

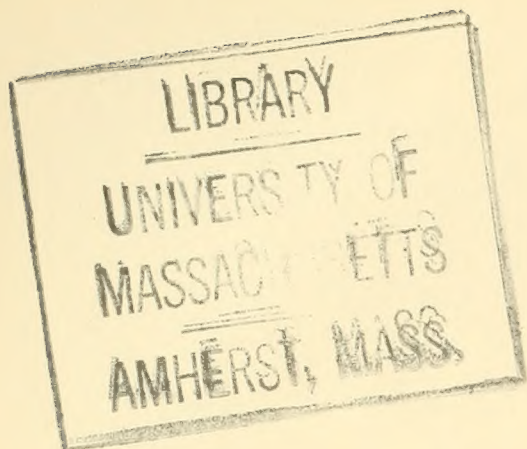
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AN

ILLUSTRATED WEEKLY JOURNAL

OF

HORTICULTURE IN ALL ITS BRANCHES.

FOUNDED BY

W. Robinson, Author of "The Wild Garden," "English Flower Garden," &c.

"You see, sweet maid, we marry
A gentler scion to the wildest stock ;
And make conceive a bark of baser kind
By bud of nobler race : This is an art
Which does mend Nature,—change it rather : but
The art itself is nature."

Shakespeare.

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THE GARDEN]

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RHODOCHITON VOLUBILE

The GARDEN.

VOL. XLIII.

ROSE GARDEN.

NATIONAL ROSE SOCIETY.

EXHIBITING ROSES FROM HEAVY AND LIGHT LAND.

HAVING read an article on the above subject, signed C. J. Grahame, in your issue of Dec. 10, I wish to make a few remarks concerning my practical experience in this matter. I have grown, and do grow, a number of Roses on both heavy and light land. I readily admit that Roses grown on the former are, as a rule, later in coming into bloom than on the latter, but I find that the situation of a garden, the aspect of the Rose borders, the varieties grown, stocks used, and the manner in which plants are treated may make some little difference in the time of blooming. I grow Roses here in three situations, each being a quarter of a mile apart, one being up at the top of the hill and the remaining two on low ground. I grow them in several soils, in several aspects, in many varieties (a good many plants each of the best exhibition kinds), on several stocks, with several kinds of manure. I have cultivated the best varieties in the best manner known to me, using every effort to procure good blooms in an average season by the first week in July, and the result is not very encouraging. I could seldom cut on July 2 forty-eight varieties even from cut-backs that would show anything like very full strength against an amateur growing the same number of plants south of London. Few of my maiden plants, although many were worked on the Manetti planted in a light soil, produced blooms ready for exhibition by July 16 this year (Lady Mary Fitzwilliam and A. K. Williams excepted). Although I cultivate several thousands of cut-backs (besides maidens), I could only cut forty-seven varieties on the eve of the last Crystal Palace show. I have only budded a few of the early varieties of Roses (plenty of each) besides some of the new kinds this year, because I find the later varieties do not come into bloom on maidens till nearly all the chief shows are over. Now I have merely stated the results of my efforts so

far, and probably they will show that I, at any rate, ought to be very much surprised if able to show a respectable forty-eight on the great "Rose Derby" day at the Palace in 1893; whereas I might be able to do so if that day fell in the height of the Rose season.

We more northern growers, it is said, only represent 30 per cent. of the members of the National Society; therefore, we are the lesser number, and must, so long as we belong to the society, be governed by the "greater number," or, in other words, by the southern growers, who, no doubt, will enjoy the "greater happiness" (unless an exceptionally early season come) on July 2, 1893. Surely more enthusiastic northern Rose growers would join the N.R.S. if they were met half way by southerners in *re* the date of metropolitan exhibition, which, although the second national show of the year, is the Rose Derby day, so to speak. It is not to be wondered at if we only represent 30 per cent. of the members, for when we visit the metropolitan exhibition and notice that the exhibits of such men as Messrs. Harkness, Mack, and Merryweather are conspicuous by their absence, our eyes and those of others must be opened to the fact that either the fixture is too early or the season too late for northerners. There is some satisfaction to many to be able to exhibit even if they do not win. Although I admit that a day fixed for the metropolitan show to probably suit 70 per cent. of the members would and has resulted in one of the grandest of shows of Tea Roses (which are earlier than H.P.'s), still we ought not to forget the qualification National nor the future popularity of the society in the north. I must admit that I believe a northern society would be popular, and that more rosarians would join it besides 30 per cent. (the present number of northern members) of the National Society; but, for all this, "Unity is Strength," and I hope and trust that no such society will be formed, but that north and south will be united in one National Society with a qualification not only existing in name.

HENRY V. MACHIN.

Gateford Hill, near Worksop.

A RETROSPECT OF THE PAST SEASON.

AT the year's close it is often pleasant and instructive to look back upon our successes and failures. Early in the year there were very severe frosts; so much so, that a few years ago many growers would have given little hopes of their Tea-scented Roses that were unprotected. By the way, I fancy that this class is becoming hardier and of a much better constitution than in former years. Can this be from their being grown under less coddled conditions? It certainly ought to have a little effect upon future plants whether they be propagated from tender or hardy subjects. Although much of the wood of Roses was frost-bitten during the winter of 1891-92, and the plants started into growth fully three weeks later than in the majority of seasons, they broke in a healthy manner and for some time promised well; much better, in fact, than many anticipated from the state the wood was in at pruning time. Late in May and early in June was a trying time for Roses, and this was followed by a severe frost on June 17 that at one time looked like spoiling all the early flowers, and even caused some to say that the N.R.S.'s metropolitan fixture—usually the show of the year—should be postponed for a week. But, as so often happens, the last three or four days brought the Roses on so rapidly, that the Crystal Palace show of 1892 was one of the best on record. The Tea-scented and Noisettes were particularly fine and more numerous than ever before. I think that if we take into consideration the Teas staged among the Hybrid Perpetuals, we should not be wrong in saying they represented a good half of the blooms exhibited. Looking back some years further, one can remember how few Teas were exhibited compared to those of the Hybrid Perpetual class. I think it would be a fair estimate to say there were three or four of the latter to one of the former. This is due to two causes—first, the fact that Teas are quite as hardy as their rival class; and, secondly, the fact of so many of our finest varieties having been introduced during the last ten or fifteen years.

There has also been much advance made in the cultivation of this charming section, and the knowledge, gained from experience, as to the greater suitability of the Brier as a stock for them has all conduced to their present high standard. The season of 1892 has brought a few of the comparatively new Teas well to the front rank, notably Ernest Metz, Ethel Brownlow, Mme. Hoste, Cleopatra, and Souvenir de S. A. Prince. All of these were particularly prominent at the Crystal Palace and Earl's Court exhibitions. Among the Hybrid Perpetual class there were also several of the newer varieties which made a mark in the Rose world. The palm must go to Gustave Piganeau, but Victor Hugo, Earl of Dufferin, Mrs. John Laing, Margaret Dickson, Jeannie Dickson, Sala-

mander, Sir Rowland Hill, and Viscountess Folkestone also fully upheld, and even increased, their previous reputations. Gustave Piganeau is a very striking Rose, and won the medal at the two exhibitions of the National Rose Society, Crystal Palace and Chester.

As usual, the Colchester champions had a tough fight for the trade trophy both at the metropolitan and provincial exhibitions. It is singular that they should have changed places so decisively as they have done during the last two years, one winning the early prizes and the other taking all of the chief prizes later in the season, this order being reversed the following year. It is only another instance of the difference there is in the earliness or backwardness of two gardens in the same locality; but it is rendered more strange by the fact that the order was so completely reversed during successive seasons. At the Crystal Palace show everything worked smoothly and pleasantly. At Chester, on the contrary, there was much confusion, and this combined with a miserably wet day made it far from a pleasant gathering to many rosarians from a distance. The chief features of this show were the close competition between the Colchester rivals in the two premier classes and the remarkably good blooms of the dark red varieties, like Victor Hugo, Prince Arthur, Charles Lefebvre, Duchess of Bedford, Earl of Dufferin, General Jacqueminot, Louise van Houtte and Horace Vernet. The finest bloom of Gloire de Margottin that has probably been seen was staged by Messrs. Merryweather; while Mr. Pemberton and Mr. Mawley had exquisite flowers of Comte de Raimbaud and Souvenir de S. A. Prince respectively, gaining the society's medals for the best blooms of their classes among the amateurs' exhibits. Here, too, we saw that grand Rose Mrs. W. J. Grant in fine form, it succeeding in gaining the gold medal for a new Rose not in commerce. I believe it was shown better elsewhere during the past season, but here I saw enough of it to be certain it has a grand future before it.

Looking back to the classes for garden Roses we find them increasing in popularity and forming one of the prettiest exhibits in the show. Then, too, the charming hybrid Sweet Briars that Lord Penzance exhibited at the Crystal Palace could not possibly fail to please all who love this section. The colours are deep and glowing, and although the individual flowers do not last any time, the freedom of flowering of the plants must make them a grand feature in gardens where Roses can be let grow almost at will.

Taken as a whole, I do not think we were troubled so much as usual with insect pests and mildew as was the case during the previous two seasons. Among my own plants the Rose maggot was almost unknown. Aphids, too, was not very prevalent after the frost of June 17. Red spider and thrips gave scarcely any trouble, and I have seldom, if ever, had my Teas freer from mildew during the latter part of the summer. Early in August red rust denuded my Hybrid Perpetuals of foliage and made them look very bare; but as a general rule this class of Rose is almost over by that date, and consequently this incurable blight or disease did not result in much serious disappointment.

We have seldom had so favourable an autumn for the production of good blooms late in September and October, nor do I ever remember the plants ripening more steadily and satisfactorily than they have done this season. We have also been favoured with a grand time for replanting, and altogether I, for one, think the season of 1892 can be looked back upon with pleasure as being a fairly good year for the queen of flowers. Well-ripened wood upon established plants and a favourable time for early planting afford a very pleasant prospect for the coming season of 1893, when I trust we shall see the Rose even more popular than hitherto. There are a few splendid new Roses to be introduced, but it will be well to defer any notes upon these until they are before the public.

RIDGEWOOD.

STOVE AND GREENHOUSE.

WINTER-FLOWERING STOVE PLANTS WORTHY OF MORE NOTICE.

EMBRACED under this heading there are several excellent subjects which seem to escape notice to a large extent in private gardens. This may be caused by the more extended culture of those plants which are both easily grown and whose flowers last for some time when cut. Even in these cases it does not follow that more cannot be added to the list, and that with advantage. When the choice of variety is narrowed down too much there is the possible danger of intervals without anything interesting to look at and admire. More particularly in the dull season of the year should an effort be made to provide sufficient material to make the houses attractive. The greater amount of interest will be centred therein now that there is an almost entire absence of outdoor flowers. There is a disposition in some cases to grow more plants of one particular kind than can be accommodated so as to afford at the same time a fair chance to other things. In such cases the plants in bulk of any one variety are not always so good as they might be if a less number, without so much crowding, were grown. Of plants worthy of more notice I would draw attention to the following, viz. :—

APHELANDRA AURANTIACA ROEZLI.—I can very well remember when this beautiful Acanthad was first introduced, or at any rate when it first became prominent in our stoves soon afterwards. About twenty years ago I used to grow it in fair quantity for mid-winter decoration, raising the plants annually from seed, which is by far the better way of procuring a stock of useful plants. The seed wants closely watching just before it is ripe, as the seed vessels burst when fully matured, the seed itself flying as it were out of the same. It is an easy matter to thus lose the seed before one is aware that it is ripe. This raising by seed is far preferable to the slower process of propagation by cuttings, whilst it is also productive of better furnished plants, the foliage drooping down below the rim of the pot. Having relied upon cuttings alone is, I surmise, the reason why this beautiful dwarf winter-blooming plant has not been more generally grown. The spikes of flowers upon vigorous plants are, as in the case of the type, of a branching character, the colour a bright orange-scarlet, which is set off to greater advantage by the distinct silvery shading of the foliage itself. The type, *A. aurantiaca*, has a slight trace of this shading, but not nearly so markedly as in Roetzli's variety, whilst being of a much taller growth it is not consequently so useful. This will grow up to 3 feet or more in height, as I have proved myself; whereas the variety now recommended will flower at from 8 inches to 1 foot in height, and in pots from 3 inches to 5 inches in diameter. To grow it well the plants should be kept as near the glass as possible to retain the dwarf, sturdy growth. As to soil, &c., ordinary stove treatment suffices in every respect.

APHELANDRA NITENS.—This is another distinctly ornamental plant, whether it be considered from the foliage or flowering point of view. The foliage itself is very distinct, being of a shining dark metallic green, whilst the flowers are even brighter in colour than those of *A. aurantiaca* Roetzli; it is also rather taller in growth, but under good management will flower at from a foot to 18 inches; the spikes do not branch, however, to the same extent. This variety comes from Columbia and the first named from Mexico.

FRANCISCEA UNIFLORA (syn., *Hopeana*).—In this *Franciscea* we have a deliciously scented plant for the winter season, and one which will flower most profusely when it has previously had good attention bestowed upon it. I used to grow *F. uniflora* out of doors in a sunny spot during the

summer; the growths would thus be sturdy and become well ripened. The flowers open of a violet-blue shade, and as they gain age gradually fade away to pure white; thus one has blue and white flowers on the plants at the same time. I have not tried this *Franciscea* for cutting to any extent, but I am disposed to think it would prove very useful. The soil I grew it in was leaf-mould and sand with but little loam. Cuttings strike freely and the young plants flower freely also whilst still small, making thus good decorative material and a pleasing contrast to the *Aphelandra* first named. The little sprays with a few flowers and buds upon them would make a nice change where coat flowers are in request to any extent. The growth of this variety is nothing like so vigorous as in most of the kinds usually seen in cultivation.

ERANTHEMUM PULCHELLUM.—This species stands out so prominently as one of the best of all deep blue-flowered plants throughout the winter season as to merit special notice for that quality alone. It may be grown either in the form of dwarf bushes with several shoots upon them or in quite small pots with only one or two shoots. In either case each shoot will invariably flower. In growing this plant I prefer to obtain a good strong growth with relatively stronger spikes of bloom; the small plants even when well cared for will produce good spikes. The size of the plants can be regulated, as in the case of *Poinsettias*, by propagating at various times, stopping the plants once or twice, except the latest of all, which should be struck about July. Pit culture during the summer is the best, with a little warmth at command if necessary. When housed the plants should have all the light possible, being kept well up to the glass. It is a moisture-loving plant, and may be grown very well in a damp stove.

ERANTHEMUM ANDERSONIANUM.—This variety will flower at other seasons, but in the winter from January onwards it is very useful. Its strong spikes of light-coloured flowers vie with many an Orchid in their beauty. The growth is erect, more like that of a *Justicia* than the foregoing species, but by striking somewhat late in the summer any disposition towards a tall plant can be greatly remedied; the spikes are terminal and not branching. The flowers, which continue for some weeks in good condition, are pure white, the lower petals being thickly dotted with dark crimson.

CROSSANDRA UNDULIFOLIA.—This plant has much in common with the first-named *Eranthemum* as to habit and freedom of growth, and should be grown as a companion plant to it. The spikes are produced in the same manner, but the flowers are larger and of a dark orange colour. This plant for the sake alone of its distinct shade of colour and free-flowering properties should have more recognition. It has not, however, in one sense yet lost much time in making its way, having only been introduced by Mr. W. Bull for about ten years.

AMASONIA PUNICEA.—Although this plant was exhibited back in the autumn by Messrs. Veitch and Sons, who introduced it to notice, it must not be inferred that it is not essentially a plant for the winter months. It is quite unique in its style of flowering, the long terminal spikes being clothed with dark crimson bracts, whilst the flowers afford a great contrast thereto, being of a pale straw colour. Compared with some things, this plant requires care, being of a more permanent character than some stove subjects. I have raised it easily enough from seed. It should be grown in nearly all peat and be kept in the warm house at all times.

JASMINUM GRACILLIMUM.—This beautiful Jasmine can either be grown as a bushy plant or as a climber. It does best in the stove, although it does not require so much heat as many plants grown therein. I have grown it myself in a greenhouse temperature, but neither the growth nor the freedom of flowering was so good as say in a cool stove. It is a plant that will bear pruning so as to retain the bushy habit, or it can be trained upon the roof or against a wall. Too much shade is prejudicial to freedom of flower, as the

wood should be well ripened. It is a plant to which the white scale is partial; this troublesome insect should therefore be well looked after.

IPOMÆA HORSFALLII.—As a winter-blooming climbing plant this is so decidedly distinct as to at once arrest attention. Its richly coloured flowers of a deep shade of rose are produced freely in large masses, continuing to open in constant succession, although each flower is very fugitive. I have not attempted its propagation, but I think it is usual to work it on to the roots of another species. When, however, it is well established it is not at all a difficult plant to manage.

BIGNONIA VENUSTA.—If I am not greatly mistaken there are two species grown under this name, one much inferior to the other. The true variety is a gorgeous plant indeed when seen in its profusion of flower. Being a climber, and one also that requires some considerable space, it should be grown upon the roof, and if planted out in a limited space it will thrive better than in pots. It is by some classed with greenhouse plants, but this is not its best place, as I have proved. It will grow therein, it is true, but it is as it were only on sufferance; the cool stove or a warm conservatory is the best place for it. The large clusters of orange-crimson flowers are fine features in the winter, the growths then being allowed to hang downwards from the roof.

BURCHELLIA CAPENSIS.—As to temperature, this comes under much the same category as *Bignonia venusta*. I have it now growing in a conservatory, but it does not feel at home and rarely gives so much bloom as it should do. Grown in an ordinary or cool stove, it is a fine shrubby plant, its neat trusses of medium size being then freely produced. In the warmth of a stove it flowers sooner also, the blooms being of a bright scarlet colour.

THYRSACANTHUS RUTILANS.—I note that this old-fashioned, but really beautiful plant has lately been alluded to in the pages of *THE GARDEN*. Further reference is therefore unnecessary, save to confirm the remarks therein made by the writer.

SONERILA MARGARITACEA and **S. HENDERSONII.**—These and closely allied varieties are more often classed with plants of fine foliage than with flowering ones, but they are very useful indeed as dwarf plants for the sake of their flowers alone, these appearing in profusion just above the prettily spotted or marbled foliage. The colour, a soft shade of rose, is both pleasing and attractive. These plants should be worked up from cuttings every spring, being most at home in a moist atmosphere.

CLERODENDRON FRAGRANS FLORE-PLENO.—This is another old-fashioned plant, but one which lasts in good condition for some considerable time. Its fragrant flowers are most useful to mount in the same way as *Tuberose* on wires for button-hole bouquets. The greatest drawback with this plant is the spreading and somewhat large foliage as compared with the size of the trusses.

CONOCLINIUM IANTHINUM.—This plant has the same drawback in its spreading growth, but when well managed it is a really beautiful plant whilst in flower, with its pale blue *Ageratum*-like heads of bloom. It is sometimes grown in the greenhouse, but the flowers are not then nearly so fine.

HETEROCENTRUM ROSEUM.—This makes a fine show whilst in flower, the best effect being obtained from plants of good size, these throwing up strong sucker-like shoots 3 feet to 4 feet in height and bearing a good crop of flowers. During the summer in favourable positions it may be grown out of doors, or at any rate in a greenhouse. Division of the old stools is a very good mode of propagation. Not lasting very well when cut has no doubt been against this otherwise very useful plant.

H. G. H.

Kentias.—Next to the *Aspidistras*, the *Kentias* are the most enduring of any plants used for indoor decoration, and being of graceful habit, bright and fresh in appearance, it is no wonder that they have become popular. *K. Belmoreana* and *K. Fosteriana* are the most useful. As a small

plant the former is the prettier, *K. Fosteriana* being better adapted for purposes where large plants are required, having larger leaves with long leaf-stalks. Although the *Kentias* referred to are usually grown in a stove temperature, they will do well in a cool greenhouse, or in a room where the temperature does not fall below freezing point, the same plants will keep in good condition for a considerable time. If in a position where they get plenty of light and are properly looked after, they will even make good growth. Until quite recently *Kentias* have been rather scarce, owing to the fact that a very high price had to be paid for the seed, which was often unreliable. Within the last few years, however, seed has been imported in enormous quantities and of good quality. At the present time I should think that these two *Kentias* are grown in larger quantities than any other plants used for decoration. To see the enormous numbers in some of the leading market nurseries one might well wonder what would become of them, yet they still command a fair price, and seem likely to do so for some time to come at any rate.—F. H.

Heliconia aureo-striata is a magnificent plant, said to come from the South Sea Islands. It is somewhat *Musa*-like in its appearance. Although somewhat dwarf, it has bold and strikingly variegated leaves. This plant would appear to have lost a great deal of its popularity from its apparently being a bad grower, but it does remarkably well in the Victoria Nursery, Upper Holloway. Mr. Williams tells me he has found the plant thrive very much better in light leaf mould than in the stiff loamy soil in which I had usually been accustomed to grow it.—W. H. G.

Cyrtanthera chrysostephana.—J. Bezeley sends me a beautiful crown of the golden-yellow flowers of this. It is a Mexican plant of great beauty, remarkable for the red venation of the under side of the leaves which are of a rich deep green. The flowers, produced at the points of all the shoots strong enough to bloom, are some 2 inches in length and of a rich golden-yellow, which makes it a showy and desirable plant to grow for winter decoration. It belongs to the *Acanthaceæ*, and is nearly allied to the *Apelandras*. It was introduced to cultivation some twenty-two years ago by Mr. W. Bull, of Chelsea.—W. H. G.

Erica melanthera.—This is one of the winter-flowering Heaths, but the blooms are not sufficiently showy for it to be cultivated to any great extent. Still, a few specimens in a greenhouse are very pretty at this time of the year or a little later, as its season of blooming varies somewhat according to the temperature of the structure in which it is growing. It is a free, but densely twiggy bush, which is when at its best so thickly laden with bloom, that little is to be seen except the tiny pink blossoms with their conspicuous black anthers. The flowers are also slightly, but agreeably scented. It gives but little trouble at any time, and when in good condition will grow and flower well for years without being repotted.—T.

Centropogon Lucyanus.—As a winter bloomer for the intermediate house this has much to commend it, for the blossoms are not only bright and showy, but a succession of them is kept up from the autumn till spring is well advanced. It is usually grown as a pot plant, but I have also seen it in suspended baskets, and in this way the long flexible shoots, weighted down by the clusters of flowers at their extremities, had a very pretty effect.—H. P.

Calla Elliotti.—In answer to your correspondent (page 557), I may say that, judging by the plants of this *Calla* that have come under my observation since they were disposed of by auction, I do not suppose that anyone has flowered them since then, as it is apparently a summer bloomer of the *alba maculata* type, and the growth was pretty well completed before they were sold. The sale took place on June 17, and about six weeks afterwards some of them began to show unmistakable signs of going to rest, and at present,

in a maximum temperature of 55°, they are still quite dormant. The tubers are very much like those of *alba maculata*, that pass the entire winter in a totally dormant state, and are quite different from those of the common *Lily* of the Nile.—H. P.

LEONOTIS LEONURUS.

THIS rare and curious plant is a native of South Africa, and although the precise date of its introduction to this country cannot be given, it is probably nearly two centuries ago; at any rate it was grown by Philip Miller in the Botanic Garden at Chelsea in 1712. Although when well grown it is a very handsome plant, it does not appear to have ever been much cultivated, and until Mr. Lynch re-introduced it from Ghent about twelve years ago and flowered it in the Botanic Garden at Cambridge, it was apparently entirely lost sight of in this country. Plants of it are now flowering in the large temperate house at Kew. Under cultivation here it is of herbaceous growth, although very old plants would doubtless become woody at the base. The flowers are produced in whorls from the axils of leaves towards, but not quite up to, the tops of the previous summer's shoots; they are very brightly coloured, being orange-scarlet. The *Leonotis*, like the *Dead Nettle* of our waysides, is a member of the *Labiata* family, and the flowers have the same two-lipped structure. In this instance they are given a singular appearance by being covered on the outside with short hairs. Each flower is about 2 inches in length, and about forty or fifty of them are borne in a single whorl.

The mere growing of this plant is the simplest matter, but, in the neighbourhood of London at least, it is not always so easy to flower. Coming into bloom at a time when fogs become frequent, and being very susceptible to them, it is not unusual for a plant instead of being in flower to be denuded both of leaves and blossoms at this season. But in districts with a clearer atmosphere this danger has not to be feared, and there is no reason why this species should not become as generally known as its beauty and interest entitle it to be. Plants may be grown on from cuttings each year, or they may be kept for two years, but after that period the stock should be renewed. Plunged in a slight bottom-heat cuttings taken in spring root as readily as *Verbenas*. They should be potted on as required until they fill 10-inch pots. It is quite necessary to place them out of doors in a sunny position during the summer if sturdy flowering growth is to be obtained, housing them in a cool, light greenhouse towards the middle of September. Strong shoots 3 feet or 4 feet long should be sought after, these producing larger and more numerous flowers. There is indeed a danger, in endeavouring to secure bushy, well-furnished plants, of stopping the shoots too often, and thus rendering the growths so weak as not to be able to flower at all.

Like so many of the sun-loving plants from the Cape of Good Hope and Australia, this species succeeds to perfection on the French Riviera, and it is also said to be quite a popular garden plant in Turkish gardens near Constantinople. Both the generic and specific names refer to the conspicuous hairiness of the flowers. W. B.

KENNEDYA MARRYATTÆ.

If asked to name a dozen of the best greenhouse climbers in cultivation this *Kennedyia* would have a place assigned it, for it is in every respect a most desirable subject for the greenhouse, not the least pleasing feature being the length of time it remains in bloom. It is a free, yet slender growing climber, clothed with silky trifoliate leaves and deep scarlet Pea-shaped blossoms. In the "Dictionary of Gardening" the flowering season is given as March to June, but it is by no means limited to that period. It will bloom freely throughout the winter months; indeed, a thriving specimen is very rarely without flowers. A few years ago there used to be a large plant in the greenhouse (No. 4) at Kew treated as a rafter plant, that is the principal shoots

were secured to the rafter, and the minor growths allowed to dispose themselves at will. The result was, these slender shoots hung down for a considerable distance and in the greatest profusion, thus forming a living screen, and when studded with bright coloured blossoms its beauty was still further enhanced.

Kennedya rubicunda is another very desirable species, stronger in growth than the last. This has dark green leaves, while the blossoms are of a deep red colour and very showy. Other *Kennedyas* are *K. coccinea*, with bright scarlet coloured blossoms, and *K. nigricans*, a strong-growing climber with smallish flowers, purple in colour, with a yellowish blotch.

The *Kennedyas* are by no means particular in their cultural requirements, for a mixture of peat and loam with a liberal dash of sand will suit them perfectly. In the case of the strong growers, such as *rubicunda* and *nigricans*, the loam may largely predominate, while the others are benefited by an extra amount of peat. With regard to insect pests, the principal thing to guard against is red spider, which in the case of plants trained near the roof is apt to attack the foliage. H. P.

Christmas Roses in pots.—Some of the finest clumps of these most useful winter flowers I lately saw at Hackwood Park. A quantity of the largest plants are every year lifted from the open ground and put into boxes or 14-inch pots, and those I saw blooming recently in wondrous profusion were fully 30 inches across, and already had produced hundreds of blooms. When these have finished flowering they are simply cut in twain with a sharp spade and replanted in the garden borders. They suffer very little so treated, and in a couple of years are, if needed, again fit for lifting. Two batches suffice each year for indoor flowering, whilst the plants outdoors, if covered with hand-lights, give a wealth of bloom.—A.

Marguerite Carnations in pots.—I lately saw a fine batch of this Carnation growing in pots. The seed had been sown in the spring. Only very few gave single flowers, whilst the rest of various colours gave myriads of charming double blossoms. These had been found useful for all sorts of purposes and were much appreciated. The stronger plants bloomed in 6-inch and the later ones in 4½-inch pots. Their blooming period had run over three months, and they would flower for some time. It is found to be of great convenience to be thus able to raise a batch of such charming Carnations from seed in the spring. Grow them on during the summer in pots in the open or in a cool frame, and then by putting them into a very gentle warmth, have a wealth of beautiful flowers all through the winter.—A. D.

Kalanchoe carnea.—This is far from being a common plant. It is largely grown at Hackwood Park for winter flowering. The plants in pots are about 20 inches in height, have stout leathery leaves, not unlike those of the *Megaseas*, but much smaller. The flowers, which are pure white and sweetly scented, are borne in clusters like those of the *Trachelium*, but yet bear a close resemblance to those of the white *Jasmine*. Small pieces are largely employed for button-hole bouquets, the perfume being so acceptable. The original stock was raised a few years since from seed, but now the plants are annually propagated in the spring. The winter-blooming character of this plant renders it specially valuable.—D.

Azalea mollis.—That flowering plants of this *Azalea* were exhibited at the meeting of the Royal Horticultural Society on December 13 shows well its value for forcing, as very few hardy subjects can be had in bloom thus early. That they were home-grown plants, too, will come as a revelation to those who look upon imported plants or bulbs of all kinds as vastly superior to home-grown ones, especially for forcing, and as the season advances it will with no more than the protection of a greenhouse, flower much earlier than it will in the open ground. The plants shown being home-grown ones should serve to direct attention to the vast sums

we pay the foreigners for such things as this *Azalea*, *Spireas*, *Lily of the Valley*, *Hydrangea paniculata grandiflora*, and many other subjects that might be as well grown in some parts of this country, while complaints are often made of many crops here being unremunerative.—H. P.

THE TUBEROSE.

THE December importations of this bulb should no longer be lost sight of. If the first batch has not yet been potted attention should be given to the work, for it is these which will prove very useful when in flower as a change to the earliest *Gardenias* and *Rose-buds* for coat flowers and sprays as well as for bouquet work. For the Tuberose I have a liking myself for the tall pots as used by some Hyacinth growers; these pots give depth, which in the case of this bulb is of importance. In potting, I prefer to keep the bulbs nearly covered, as in the case of Hyacinths, making the soil fairly firm. This latter may very well consist of good turfy loam and leaf-mould, or, failing this, some spent Mushroom manure worked through a coarse sieve; road-scrappings can also take the place of silver sand if this latter commodity is scarce or troublesome to obtain in quantity. A moderate warmth may at once be given, but no undue excitement until the roots be well advanced, otherwise the foliage is drawn up weakly and the bulbs in a measure weakened also before the spikes appear. After one good watering to settle the soil no more is needed for some little time, the surface being meanwhile covered with a light dressing of cocoa fibre to save watering. A dry place whereon to stand the pots should be avoided; a gentle bottom-heat, as from leaves only, in a pit devoted to the early forcing of shrubs, &c., would, on the contrary, be a suitable place, but then even too much moisture from the syringe should be guarded against. By potting up a fair number a succession can be had later on, for it seldom happens that they all come into flower at one time. As the spikes appear these plants can be drafted to a house or pit with additional warmth. Those not potted up at once should not be left in too cold a place nor be exposed to a drying atmosphere. The better way to keep them is either in cocoa fibre or sand where a temperature less than 45° is not the rule. Rather than expose the bulbs I would pot all up at once and regulate the succession afterwards. For pots of the size named above one bulb is sufficient, but if ordinary 8-inch pots be used instead, three bulbs can be placed therein. Should the bulbs on arrival be found at all shrivelled, not handling plump, they may with advantage be soaked in warm water for an hour or two; this will be far better than watering freely before roots are formed. When well rooted plenty of water is required, with frequent doses of liquid manure, or soot water will answer in its place. A weak solution of this latter will also greatly help to check any development of the red spider, an insect to which the Tuberose is very subject. For this reason it is never advisable to have it in vineries, or amongst Cucumbers or Melons even. The free use of the syringe is for this insect on the Tuberose the best deterrent. H. A.

Begonia Winter Gem.—Those who may have visited the R.H.S. meeting on the 13th inst. will have noticed a beautiful exhibit of this, one of the most brilliant of all winter flowers. The extremely dwarf habit of the plant with its bright green habit and spikes of bloom sufficiently raised above the leaves to be seen to good advantage are excellent features. In the stove—not the warm one where such as *Ixoras* and *Nepenthes* thrive, but that where the ordinary run of winter-flowering plants, as other *Begonias*, *Poinsettias* and the like, are grown in a satisfactory manner—this choice *Begonia* will find a congenial home. It has, in common with those hybrids which have preceded it from Messrs. Veitch and Sons' establishment, that highly important and noteworthy feature of retaining its flowers in good condition for several

weeks. From three to six weeks these flowers will last in good order. This lasting property makes them all the more valuable for cutting from, whilst they may also be grown very successfully within the fog and smoke radius, as I have myself proved. The other two alluded to above are *John Heal* and *Adonis*. This trio should be taken more note of by those who are seeking for further and valuable accessions to winter-flowering plants.—H. A.

Aglaonema costatum.—This very dwarf and interesting decorative stove plant will prove a decided acquisition where dwarf plants are in request, whether it be in the stove entirely, or for other purposes outside of it. It has the property of retaining its foliage quite fresh throughout the winter, thus supplying the place then vacated by *Caladium argyrites*. Having in my own case grown *Peperomia arifolia argyrea* in good numbers and noted how frequently it was admired, I am all the more fully persuaded that this companion Aroid will prove valuable. The variegation is white, creamy white and glossy green, the foliage about one-third longer than wide, but seldom exceeding 5 inches in length. I was much pleased with this *Aglaonema* when it was shown by Messrs. Veitch and Sons at the Royal Botanic Gardens, Regent's Park, last spring. It is one of their introductions from Perak.—H. A.

Anthurium Andreanum.—This *Anthurium* has never attained the degree of popularity that was anticipated at the time of its introduction, but, for all this, it must by no means be passed over, for it is a wonderfully showy flower, and one that will remain bright and fresh for months. While its flowering season can scarcely be described as limited to any particular period of the year, where a few plants are grown some of them can be depended upon to flower during the winter, and just now we have several examples in bloom which will remain fresh till the spring. The loose, somewhat scandent habit no doubt detracts from the popularity of this *Anthurium*, but with regard to this feature, individuals vary greatly, some being far more tufted in growth than others; still, the finest flowers are as a rule borne by the strongest growing forms. It ripens seed freely, from which young plants can be readily raised, while it has also been employed by the hybridist, and, in conjunction with the white-flowered *A. ornatum*, has given us a race of pinkish-flowered forms, which, though pretty and useful for their free-flowering qualities, are not nearly so showy as a good form of the typical *A. Andreanum*. One of the best coloured flowers of this *Anthurium* that has ever come under my notice was shown last spring from the grand collection that Sir Trevor Lawrence has gathered together. It was awarded a first-class certificate by the Royal Horticultural Society under the name of *A. Andreanum sanguineum*. One of the first hybrids in which *A. Andreanum* played a part was *A. ferrierense*, which still remains among the best of its class.—H. P.

SHORT NOTES.—STOVE AND GREENHOUSE.

Justicia speciosa.—This is an easily-grown plant that serves to enliven the warm greenhouse during the dull days of midwinter. It forms a freely branched, but somewhat upright-growing plant, whose bright purple blossoms are borne in great profusion. This *Justicia* is not at all suited for cutting, but a group of a few plants in full flower serves to display its charms to the best advantage.—H. P.

White Poinsettia.—A good companion to the brilliant *Poinsettia pulcherrima*. We have had a good batch of the white variety this season, and it has been much appreciated. It requires a little more care, but if well treated it will make fine heads of bracts, which when associated with the red are very effective. To succeed with this care must be taken that the plants do not suffer from a low temperature during the autumn.—F. H.

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TREES AND SHRUBS.

BAMBUSA METAKE.

THE fine specimen here illustrated is the smaller of two planted about twenty years ago in the garden at Middleton Hall, Carmarthenshire. They have grown well without protection of any kind or attention beyond the necessary removal of runners invading the walk and Grass. That the climate of South Wales suits this Bamboo is evidenced by the number of healthy plants of all sizes about the grounds, most of them being from these runners. None get or require protection, though a few in exposed situations become a little browned in severe winters or continued cold winds. *Gunnera scabra* also does well with very slight protection.

R. G. LAWRENCE.

THE CUTTING OF EVERGREENS.

ABOUT Christmas-time and early in the new year there is usually a demand for Evergreens to use in various ways for festive decorations. It is not of their use that I now refer, but more particularly to the cutting of them. When there is a choice to a few days, a fine dry day should if possible be chosen. The work of cutting can then be performed with far greater comfort by the men, whilst at the same time it can also be done more carefully. It is a description of work that is oftentimes done in a perfunctory or haphazard manner, with no real thought either as to the after appearance of the shrubs or their future well-being. Of course what holds good in one kind does not always do so in another, whilst varied forms and styles of growth should also be considered. In my own case I have for several years been aiming at cutting Hollies so as to get the trees (for trees they are) into more of a pyramidal shape, not formal, as in clipped trees, but so much so as to give every opportunity for the lower branches to spread out and not be overshadowed by the branches above them. In this way I have under my care a number of well-furnished specimens from 20 feet to 30 feet and even more in height. These consist of the common Holly, the silver variegated, and the yellow-fruited kind. The soil, a light one resting on gravel, suits them very well. Aucubas I find do best when they have plenty of room to develop into dense bushes; these when too tall are beheaded, 2 or 3 feet being taken off the tops. Young growths will follow in due course. With Laurels, a medium course of cutting is better in my opinion than either of the two extremes, viz., that of constant summer pruning to keep them, as it were, in accordance with some architect's plan or excessive cutting down, as a woodman would do it, leaving everything bare for a time. A deal may be done with Yews to keep them from extending too wide when the space is limited by merely cutting out the leading shoots. By the same process the Box trees can be retained in a bushy and dense condition without being in any sense formal. When shrubs are taken in hand in time by judicious thinning out here and there, it will take years before they arrive at a size when a more radical course will be found necessary. This informal kind of pruning regulates the growth of the shrubs and prevents strong shoots from taking the lead to the weakening of the rest, with the consequent after results of a bareness both undesirable and unsightly also. It frequently happens that shrubs are left more to chance than anything else in the garden. As long as they look well at the time, be they ever so crowded, there is no thought given as to the future. This is a great mistake, the after effects of which cannot be so easily remedied.

EVERGREEN.

Digging among shrubs.—I have to deal with a heavy cold soil, in some parts clay, and if left alone it quickly becomes covered with Moss on the surface. In its management I find great assist-

ance from the annual digging-in of the leaves, not only in the easier working of the soil, but in thus preventing the leaves being blown about the lawns contiguous to the shrubberies. Therefore the time spent in digging is more than saved in after sweeping. By burying the leaves, the shrubs of all kinds are invigorated. In my case most of the shrubberies were formed of the soil excavated for house-building. This, as a rule, is not the best material for shrub culture. The common-sense plan of digging among the shrubs should be to lightly scratch over the surface close about the stems of all trees and bury the leaves. Not only are the shrubs benefited by such an addition, but the roots are not seriously interfered with, the surface is more easily worked, the water runs away and does not lie about the plants all the winter months.—E. M.

Fremontia californica.—That this shrub is a rare one in gardens, as stated on page 532, is no doubt greatly owing to two special features in connection with it, the first being the fact that it is by no means an easy subject to propagate, and the second, its having a way of dying off suddenly even when large and apparently in good health. Not



Bambusa Metake in the garden at Middleton Hall, Carmarthenshire. Engraved for THE GARDEN from a photograph sent by Mrs. R. G. Lawrence.

only have a few instances of this come under my notice, but other contributors to THE GARDEN have before now noted the same.—T.

Ivy edgings and carpetings under trees.

—One of the best examples of this work that I have ever seen is at Dove Park, Woolton, near Liverpool, where underneath tall Lime trees on each side of the carriage drive for fully 200 yards, I should say, Irish Ivy completely covers the surface, making a mass of greenery, most beautiful during the winter when the trees are leafless overhead. The bed on each side is fully 15 feet wide. Mr. Carling told me that the soil in which it is growing is very thin, and not far from the surface there is a bed of scale overlying what is known as the Woolton rock or red stone. Quite small plants were put out, many thousands being required. No labour in clearing the leaves is incurred; all are allowed to decay, this considerably assisting the growth. We have here a flint-built stone wall 3 feet high that was put together some few years since as a retaining wall for some soil. The soil was packed tightly in amongst the stones as the

work proceeded. On the top were planted long trailing shoots from the woods of the common English Ivy. The growth was rapid, and now there is a thick mass of greenery as neat as possible. An annual clipping of the current year's shoots is all that is required, and certainly nothing as a covering could be more effective.—E. M., Swanmore Park.

HARDY SHRUBS CERTIFICATED

IN 1892.

THE list of hardy shrubs certificated by the Royal Horticultural Society during 1892 is, exclusive of Roses and Tree Peonies, but a limited one, there being throughout the year less than one for each month, while the majority of the few thus honoured have been in cultivation for many years, and are now fairly well known. The first to receive recognition at the hands of the floral committee was

LILAC PRESIDENT GREY, which was shown on February 9, the plants being of course forced. The blooms of this are large and double, while they are borne in very massive clusters. As shown they were in colour almost white, but in the open ground the flowers are more of a bluish lilac tint. This Lilac is one of the varieties raised and distributed by M. Lemoine, of Nancy, who has made the production of double-flowered Lilacs essentially his own for some years. The first of this group was Lemoinei, sent out about a dozen years ago, and awarded a certificate by the Royal Horticultural Society in 1884. Since that time we have had numerous other forms put into commerce from the same source, so that the list of these double-flowered Lilacs from Nancy amounts now to a couple of dozen or thereabouts. As the range in colour is by no means great, some of the varieties must considerably resemble each other.

AMYGDALUS DAVIDIANA ALBA.—

The plant to which a first-class certificate was awarded under the above name is, I believe, regarded as the typical A. Davidiana, there being another form with rosy-tinted blossoms. A. Davidiana is a native of China, from whence it was introduced several years ago, but it is still very uncommon. It is the earliest of all the Almonds to unfold its blossoms, for in mild winters some of them will expand before January is past, while the specimens to which the certificate was awarded on March 8 were taken from the open ground. The wood is more slender and the flowers smaller than those of the common Almond, but they are borne in great profusion along the shoots of the preceding year, so that a plant in full flower is quite a mass of bloom. Being so early it will be a very useful subject for flowering under glass, as simple protection will be the only thing needed to have it in bloom quite as soon as many shrubs that need much more forcing. A woodcut of this pretty Almond was given in THE GARDEN for May 28, 1892.

EUONYMUS JAPONICUS COMPACTUS.—This is very different from the commoner forms of the Japanese Euonymus, as it forms a neat compact little bush not much more than 6 inches high, but quite upright in growth. The oblong-shaped leaves are each about three-quarters of an inch in length, of a deep shining green with a narrow margin of clear white. It will no doubt be sought after for various decorative purposes, while it could doubtless be used for edgings after the manner of Box.

RHODODENDRON CAMPYLOCARPUM.—Though perhaps a stretch of imagination to class this with hardy shrubs, it will stand the winter in so many districts without protection, that it may, I think, be included here. It is one of the Sikkim species, introduced into this country about forty years ago, but though not rare, it must still be classed with the more uncommon kinds. It may be regarded as one of the medium growing species of this district, the leaves being 3 inches to 4 inches long and about a couple of inches in width, with the edges slightly, but distinctly undulated. The blossoms are bell-shaped, a couple of inches or so in diameter, and arranged in a rather loose terminal head. Their colour is a sulphur-yellow without any spots, a tint quite distinct from that of any other Indian species. Sir Joseph Hooker in his *Himalayan Journals* speaks of the sheep feeding on this *Rhododendron* as well as on *R. Thomsoni*.

RHODODENDRON RACEMOSUM.—This pretty little *Rhododendron* from the Yunnan district of China was shown on April 19 by Messrs. Veitch, and at that time, from its very distinct character, it attracted a considerable amount of attention. It is of dwarf compact habit, flowering freely when less than a foot high. The flowers, which are borne in terminal and axillary clusters, are about an inch in diameter, pale pink, edged with a deeper tint, and slightly fragrant. Should it prove perfectly hardy it will be a very desirable dwarf-growing shrub for the rockwork. A coloured plate of this distinct *Rhododendron* was given in *THE GARDEN* October 8 last, and accompanying it will be found a most interesting article on this species and also others from the same region.

WISTARIA SINENSIS ALBA.—This white-flowered form of *Wistaria* has been before the public for many years, but it is seldom planted, and, in fact, but little known. It may be described as a pure white counterpart of the common *Wistaria*; that as shown by Messrs. Veitch on May 17 well deserved the first-class certificate then awarded it.

AZALEA MRS. A. WATERER.—This is one of the hardy *Azaleas* with large well-formed flowers of a pure white, blotched in the interior with yellow. It is a good illustration of the larger and bolder flowers that are now to be found among the hardy *Azaleas*, so many of which find a congenial home at Knap Hill, where this particular variety originated.

CORNUS KOUSA.—The specimens of this shown by Messrs. Veitch on June 21 were very attractive, and it will doubtless now be sought after, as it is very distinct from most of our flowering shrubs. It is, I believe, regarded as identical with *Benthamia japonica*, the genus *Benthamia* being now merged into that of *Cornus*. The flowers, which are yellow, are very small, and borne in little clusters, but the showy part of the inflorescence is furnished by four large pure white bracts which subtend each cluster of blossoms exactly as in the flowering *Dogwood* (*Cornus florida*). The bracts of the Japanese *Cornus* are, however, more pointed than those of the flowering *Dogwood*. Whether under the name of *Benthamia japonica* or of *Cornus*, it is certainly very little known in this country, though more than two years since, viz., December 27, 1890, in his notes from Glen Cove, United States, Mr. Falconer spoke highly of it, with the remark that it is one of the finest shrubs one can have in a garden, and it is far harder than *B. fragifera*.

VARIEGATED ELDER.—An award of merit was on September 20 bestowed upon an *Elder* whose leaves were very freely blotched and marbled with pure white, while many young leaves and tips of the shoots were almost wholly white. While a place doubtless may often be found for it, this *Elder* is one of those very pronounced subjects that are easily overdone in a garden.

HYMENANTHERA CRASSIFOLIA.—It is seventeen years since this little shrub was introduced from New Zealand, and it has now been a stock plant in many nurseries for several years. It is a dense growing bush, usually of a flattened hemispherical shape that reaches a height of 2 feet to 3 feet. The leaves are very small, but so thick in texture as to merit the specific name of *crassifolia*. The

most distinctive feature is the berries, which ripen in the autumn, at which time they are white, a tint very seldom found among berried shrubs. The fruits are, however, crowded along the undersides of the branches, and are consequently not so conspicuous as they would be if borne in a more exposed position. Though a native of New Zealand, it is much harder than most shrubs from that region. T.

Dimorphanthus mandschuricus—Unlike some of your correspondents, I admire established specimens of this fine shrub or dwarf tree at all seasons of the year. I refer especially to plants—as to winter aspect—that have acquired sufficient size and age to develop their peculiar branching characteristics, for I should indeed be surprised to find anyone who could perceive beauty in young plants say of three or four years' growth when devoid of foliage, for then they are about as ornamental as a strong bare flower stake. Even the fantastic arrangement of its bare and rugged branches during winter is interesting and distinct from most others, reminding one more of noble stags' horns than anything else I can compare them to; while in the spring the rapid development of its noble tropical-like foliage is very pleasing, and as autumn advances its beauties are heightened by the profuseness of its delicate creamy-white blooms, which are in evidence concurrently with the lovely autumnal tints assumed by the enormous leaves, both combined making up a beautiful picture of colour in the landscape. I have no personal experience of its behaviour in heavy cold soils, but here, where the reverse as regards soil is the case, it grows luxuriantly in any position and aspect, and old-established plants produce suckers in thickets, these affording a ready and expeditious mode of increasing the stock. The plants form conspicuous objects both as single specimens in isolated positions and also in clumps of considerable size. It is a shrub I would strongly advise for any position where a tropical effect is desirable.—J. R., *Tan-y-bwlch*.

Shrubberies.—The question as to how to treat shrubberies is a seasonable one to raise just now. Much, however, depends upon the condition of the shrubbery in determining whether the ground shall or shall not be dug. Many old shrubberies, especially where trees overhang, are so crowded, that the soil has become one mass of roots. There is no use whatever in such cases in attempting to dig in the leaves that lie on the surface, and there is no other course but to let them lie and decay in due time, or cover them over with a coating of soil, which, however, cannot always be found. Then there is the plan of annually clearing out all the leaves, carting them away to some out-of-the-way place to decay, bringing back in their place the leafage of the preceding year, which, with other refuse, has become thoroughly rotted and is now in admirable condition to spread over the surface as a mulch or dressing. Too much is it the case when leaves are removed from borders to allow them to decay and then employ them elsewhere. No wonder in such cases that shrubs in time wear a thin, starved aspect, and once they begin to decay there is no arresting the process without hard cutting back and giving the ground a heavy dressing of manure and soil.—A. D.

SHORT NOTES.—TREES AND SHRUBS.

Erythrina crista-galli in the open air.—Planted at the foot of a low wall at the south end of one of Messrs. Veitch's houses at Chelsea, I last September saw this growing and flowering very freely, but not of the height named by "J. F." (p. 532). From what I gathered, the plant had occupied its position for some years.—E. M.

Choisya ternata in the open air.—In many parts of this country this shrub planted at the foot of a south wall, and in some few places as a bush in the shrubbery, succeeds well. It is as a wall plant that it is seen at its best, the warmth of the wall ripening the wood sufficiently. Where the growth is free the plants

will flower twice a year. At the present time (December 17) our plants have flowers on them as well as many in open bud. It is in May, however, that the fullest crop is borne, the plants being literally a sheet of white.—E. M.

—This not so tender as many people suppose, for in the open ground, under similar conditions to the common *Laurel*, it often suffers less than that does. Of course, if the *Choisya* has been grown a good while under glass and is then planted out, it is far more liable to be injured during winter than where more fully exposed during its earlier stages.—T.

GARDEN FLORA.

PLATE 891.

BOUGAINVILLEAS.

WITH A COLOURED PLATE OF *B. SPECTABILIS*.*

THERE can hardly be two opinions as to the value of *Bougainvilleas* from a decorative point of view for the ornamentation of our plant houses. This refers more particularly perhaps to *B. glabra*, the culture of which is far more general than in the case of *B. spectabilis*, which forms the subject of the coloured plate for this week's issue. *B. glabra* has no doubt won its way to public favour more than its rivals through being better suited to pot culture—at least, its culture is more understood in the majority of gardens. Between the two as far as treatment is concerned I have in my experience noted one remarkable diversity. This is in relation to pruning. *B. glabra* is easily managed and produces its flowers and bracts in profusion under what may be termed spring pruning, as in the case of an *Allamanda*. In the case of *B. spectabilis* the same mode of procedure would mean a loss of bloom to a large extent. This latter variety flowers from the terminals of the shoots of the previous year's growth, hence in cutting these away it can be readily seen that the plant is deprived of its floral beauty. I have noted that almost as soon as the young shoots start into growth in the spring the flowers show with it and soon develop. What pruning, therefore, is required should be seen to immediately the plant is out of bloom, so as to ensure a well-ripened growth by the autumn, this latter being carefully preserved for the next season's flowering. I found this out more by accident than otherwise through the plant from which the flowers were taken that form the accompanying plate being passed over one spring entirely as to pruning. I noted afterwards as it showed for flower that if I had pruned it as I would have done *Bougainvillea glabra*, I should have cut off nearly all the future bloom. This mode of procedure by non-pruning in the spring has now been followed for several seasons, and the plant flowers regularly. This, too, it should be noted, whilst under pot culture, and that not under the best of conditions. Just now the plant is at rest, retaining a portion of its foliage, but in a house rather too cool for it. The temperature of the house now falls to about 36° when the frost is very severe, about midway between that and 46° being taken as the average during the winter at night. If I could add 10° on to the temperature I believe the plant would so thrive as to be a grand sight every spring, and that in a pot too. From my notes of its requirements I am quite disposed to think that this *Bougainvillea* has lost ground as compared with *B. glabra* more through want of suitable treatment than anything else.

* Drawn for *THE GARDEN* in the Gardens, Gunnersbury House, by Gertrude Hamilton, June 11, 1892. Lithographed and printed by Guillaume Severens.



[JAN. 7, 1893]

[THE GARDEN]



PETER BARR.



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PETER BARR.

MR. PETER BARR was born at Govan—then a prosperous weaving village on the Clyde—in April, 1826, but more to his taste than looms or their products were the Tulip beds in his father's garden, and it was their beauty decided his fate. At an early age he was employed in the seed shop of Mr. Jas. Thynne, of Glasgow, eventually taking full charge of the seed department when but twenty years of age. His next appointment was with Messrs. Daly, Drysdale and Co., seed merchants, of Newry, Co. Down, Ireland, where he passed through the terrible famine years of 1846-47, caused by the general failure of the Potato crop. From Newry he went to Messrs. Richard Smith's nursery at Worcester, then only sixteen acres in extent, and a year or two afterwards he was appointed manager to Messrs. Butler and McCulloch, of Covent Garden. After some years of experience in the London seed trade, Mr. Barr started as a seedsman in the autumn of 1861 under the style and title of "Barr and Sugden." During the last twenty years or so Mr. Barr has devoted much attention to garden plants as well as seeds, beginning with the Daffodils, and studying also other groups, such as the Scillas, Lilies, Hellebores, Funkias, while more recently he has paid much attention to the beautiful genus *Pæonia* in all its forms and variations.

Mr. Peter Barr is best known for his labours in collecting and popularising the *Narcissi* and the *Daffodils*. These once much-appreciated spring flowers, like others, however, had been thrown aside or neglected during the artificial epoch of flower gardening known as "bedding out," and it is to Mr. Barr that we are in the main indebted for again collecting and exhibiting them in London and elsewhere, and so obtaining for them that attention and culture which to-day they receive. An impetus was given to his labours in this direction by a correspondence with the late Mr. Leeds, of Longford Bridge, near Manchester, who had raised hybrids and seedlings of these flowers, which, as shown at South Kensington, had been much admired, although at that time there was little or no sale for them. This correspondence continued until near the close of Mr. Leeds' life, when it was rumoured that "if his *Narcissi* were not sold before his death, he had directed in his will that all should be destroyed!" This was so alarming, that Mr. Barr consulted the Rev. John Nelson and other friends, and the result was a syndicate which purchased Mr. Leeds' stock. While cleaning and selecting these varieties at his old bulb grounds at Garrett Lane, Lower Tooting, Mr. Barr accidentally heard that Mr. Milner, of Sheffield, had a stock of these bulbs, and he went to Sheffield to see them, and found that they had been raised as seedlings by Mr. Milner's brother-in-law, Mr. W. Backhouse, of St. John's, Wolsingham, Durham, who had sent consignments of new seedlings to Mr. Milner from time to time. Mr. Milner's stock was divided between Mr. Barr and his friend, the Rev. John Nelson, and so the Backhouse seedlings came into far more prominent notice than they had before attained. Not only did Mr. Barr collect all the old species and varieties of Daffodils from all sources, but he also, at much trouble and no little cost, selected and named the seedlings raised by the amateurs above named, and more recently he has dealt with those of other raisers, such as Rawson, De Graaff, and Herr Max Leichtlin. He has, moreover, made two or three special journeys to Spain, Portugal, and the Maritime Alps in quest of wild *Narcissi*. The extensive collection of Daffodils and *Narcissi* (seven or eight acres) to be seen in bloom at Mr. Barr's new bulb grounds at Long Ditton, Surrey, during April is a very interesting one.

Given a proper temperature and a light, airy house, I firmly believe it would vie with that better-known species under pot culture, to say nothing of the gorgeous effect produced by a plant that is growing in a well-prepared border.

If I am not greatly mistaken, it was *B. spectabilis* which used to be (and may be now for aught I know) such a splendid sight every spring at Swanscombe House Gardens, Henley-on-Thames, then under the care of Mr. Daniells. Since then, though now some years back, I have seen it thriving well at The Denbies, Dorking, in a lofty glass structure between lower houses. I should think this plant was difficult to get at, hence probably its growth would not be much restricted; but at any rate it used to flower well. Perhaps Mr. Beesley, who succeeded Mr. Drewitt in the charge of the gardens there, can inform us on this point. I note also that Mr. Herbert J. Veitch in his travels was attracted by the display of *Bougainvilleas* which he saw in the Government gardens at Saharunpur (*vide Gardeners' Chronicle* for July 2, 1892, pp. 11 and 12). He thus writes of *Bougainvilleas*: "Mr. Gallon has three distinct varieties of *Bougainvillea*, *B. glabra* and two of *speciosa*, one of which he calls *spectabilis*. The true *B. speciosa* with the dark flowers and hairy foliage generally flowers in March, whilst the one Mr. Gallon calls *B. spectabilis* flowers from September to May, being at its best in February." Which of these two (*B. spectabilis* and *B. speciosa*) as there cultivated is that known as *B. spectabilis* in English gardens I am not able to state. There is, I think, some confusion in the nomenclature. I remember some years ago one called *Bougainvillea lateritia*. This was then stated to have the darkest flowers (*i.e.*, bracts) of any. In growth it was similar to *B. spectabilis*, but I did not see it in flower. This may possibly be the *B. speciosa* of Mr. Herbert Veitch's notes. I have (in common, no doubt, with others) observed a great difference in the colour of the bracts of *B. glabra* as grown and shown. This is not because there are inferior varieties, but through too much shade having been given to the plants. By exposing them freely to the sun, and that not in either a too warm or a too moist stove, the colours will be greatly intensified. *B. spectabilis* flowers usually before much shade is required; hence the remark thereon does not apply in this case. *B. glabra* may be regulated to flower almost to a nicety by stopping the shoots and forcing a simultaneous break about twelve weeks prior to any given time in the summer. As to soils, thoroughly good peat and turfy loam will be the best for a plant growing in a bed; whilst if in a pot, leaf soil may very well take the place of peat. In any case, plenty of water is required whilst the growth is active, but much less during the winter, when *B. spectabilis* of the two should have the soil kept the moister, because of its extra amount of shoots for the next year. J. HUDSON.

Mixed planting of forest trees.—The practices of planting indiscriminately all kinds of forest trees and distributing them throughout the plantations with the regularity of the patterns upon a wall paper are at once opposed to science and to correct taste. Few foresters can boast of soils adapted to the growth of any great number of species in the same enclosure, and the recurrence of the same forms and tints in spring, summer and autumn at regular intervals throughout the woodlands entirely destroys the spirit of planting. It may often be advisable to mix up the deep and shallow-rooting trees, so that the soil may be well occupied from its surface downwards. Besides, some of those trees whose roots penetrate

the deepest bring up to the surface and scatter over the land by their fall of leaves, substances beneficial to other trees whose roots do not descend deeply enough to reach them. These substances have also a beneficial effect upon the herbage which springs up after the land is either partially or entirely cleared of timber. Though little or nothing will grow under the shade of a dense A-h, yet after the clearance of the timber the land is undoubtedly improved, and where a crop of Oaks has been matured, the land is found to be considerably benefited by the saline matter obtained from their leaves, which amounts to about 5 per cent. of their whole weight. After a plantation of Larch has been thinned out sufficiently to allow grass to cover the ground, such herbage far surpasses both in quantity and quality what the land previously produced.—A.

FLOWER GARDEN.

NOTES ON PÆONIES.

PÆONIES are most impatient of removal at any time, and for this reason alone they should be planted if possible in autumn. The chief points in their culture are a deep and very rich soil. Under no circumstances should the plants be surrounded with crude manure, but, instead, dig in as much as you like at 1 foot to 2 feet deep, so as to enrich the soil by the time the large fleshy roots are ready to descend to and receive it, which they quickly will if good healthy plants are secured to make a start with. Medium-sized plants, with two or three good crown buds to each and plenty of fresh young roots, are to be preferred to much older plants where the large trunk of the root-stock has become much cankered. If any such are received, I recommend the shortening of such large trunk-roots considerably, as well as removing any cankered parts that may be visible. In the planting of any such cankered roots and in certain soils with certain kinds, canker will of a surety be present in a greater or less degree; it will be of help to the future progress of the plants if a niche be cut around the trunk or main root at about 2 inches or 3 inches below the base of the crown-buds. This will hasten the formation of fresh roots from the latter and materially assist in the speedy building up of a new and more vigorous growth than could possibly ensue where the old and cankered pieces remain. Another good way, if the plants are large enough to admit it, is to cut the large trunk-root in two longitudinally, this, with shortening of the trunk, being also advantageous to the future plant. In planting let there be no fear of burying the crown buds, as these when left have a tendency upward, and as roots are freely produced from the base of the buds, there is a danger of these roots becoming parched and destroyed in dry weather. Where attention is given to these seemingly insignificant details at planting time it saves any after disturbance, which, as I have said above, the plants are most impatient of. Frequently I have seen it recommended that herbaceous Pæonies should be planted in the spring months, just as they are sending up their fresh young stems for the season. To plant these things at such a time is a very great mistake; in fact, no worse possible time could be chosen, for, if nothing more, the young growths are subjected to great risk in transit and are frequently entirely lost. Therefore, to all who wish to have success in growing these Pæonies I say do not plant in spring and do not wait for the appearance of new growth. Such signs as these are all well enough for the many plants that are continually emitting numerous roots throughout the season, but it is another question altogether for such subjects as only make one or two sets of roots in each year, and that with unvarying regularity. In all these latter instances the aim of the planter should be to snatch the moment between these two sets of roots and get the plants into their places. Loss of tap-root will then be small, while the small fibres should still have to come. Had I to choose any special time in the whole year, I

should unhesitatingly—and for Pæonies in particular—select from the end of September onwards to the end of the year. October, however, is decidedly to be preferred to December, because the land is generally more workable in the former month. E. J. H.

CHRISTMAS ROSES.

THE planting of these should always be done prior to the pushing forth of new foliage. I am, however, aware that in some gardens where especial attention is accorded these plants they are successfully planted in the spring months as well as at other seasons. In all ordinary instances and where no especial home is provided for Christmas Roses it is by far the best plan where they cannot be planted in early autumn to do it as soon as flowering is completed. This will give them an opportunity of becoming well established before the parching winds of March and April arrive. Christmas Roses, that is all the varieties of *Helleborus niger*, are best broken up into rather small pieces. Particularly is this the case where the plants have been allowed to remain long in one position. Very large plants with probably 100 or more flowers springing from each are exceedingly handsome looking subjects in the herbaceous border, or indeed in any position where such may perchance exist, but it does not follow that the finest flowers are always produced by these very large examples. On the other hand, I have found that the best flowers are produced on two-year or three-year-old plants, counting from the time of planting and assuming that the plants have been broken up into pieces of not more than two or three crowns each at the most. Divisions of this size are quite large enough for transplanting, so that those possessing large specimens that have not been broken up for years could soon increase their stock of this invaluable winter flower. To those possessing such plants I would suggest that a portion be broken up or divided every year, as by so doing a continued supply of flowers may still be forthcoming as before. Where, however, the dividing and transplanting are deferred till the flowering is complete, the supply of bloom will not be interfered with.

One thing is especially disastrous in transplanting Christmas Roses, and this is attempting to transplant very large examples, that is, clumps of 2 feet or so in diameter. Though nearly twenty years have elapsed, I still remember an attempt to transplant some grand examples of these *Hellebores* in the lump as lifted, and though every precaution was taken and their new quarters ready prior to the specimens being lifted, it was all to no purpose. As a result, the attempt was an absolute failure and a lesson never forgotten. Every vestige of their grand foliage was lost leaf by leaf, and when in the early autumn of the following year I lifted them again to see if anything could be done, there was hardly a living root to be found in that huge mass, all of which was in the most perfect health when transplanted early in the previous autumn. The only remedy for plants thus reduced is to wash every particle of soil from them and remove the dead roots, afterwards dividing them into small pieces of a couple of crowns each and planting them in good soil in nursery beds. Prior to planting, allow the plants to become quite dry from the washing by laying them out in an open shed, and when planting freely dust them in the trench with fine charcoal. It will also be well to plant somewhat deeper than usual, so that the new roots which shall presently issue from the base of the crown shall have the advantage of additional protection. This is the more needful because the old decayed roots will be of very little service in restoring the plant to health, and for which it must depend on entirely new roots. This to some may seem a good deal of trouble to go to, but if the variety be a good one—as it was in the case of that I nearly lost—it will be well repaid, as in two or three years these divisions will have made nice flowering plants, and in much less time, of course, where

the plants have not been subjected to a course of wrong treatment. It is at this season of the year that many who possess a stock of flowering plants of these favourite Christmas Roses are tempted to lift and pot a portion of them for blooming under glass, and for purposes of decoration, either in a cut state or in pots, few plants can equal, much less surpass them. None are hardier or more enduring, and none more free-flowering or continuous. But where the plants are few in number and valued accordingly, the protection of a handlight will keep the flowers clean and pure, while no probable danger hangs overhead. All plants lifted and potted for flowering under glass will, if at all large, be best broken up into small pieces when flowering is over and replanted in good rich soil.

The position this section of Hellebores appears to prefer is one sheltered from cutting winds and also protected from hot sun. Distant shade is preferable to that provided by a wall, for example. An abundant depth of soil where the roots may be constantly cool is, however, the chief point. Given this, you may plant your Christmas Roses in a greater variety of positions with success than in those instances where depth of good soil is wanting. It is nothing unusual for their roots to descend to 2½ feet or 3 feet in the earth where the soil will permit, and it is more than probable that their roots will go down far deeper if an opportunity be afforded them. I mention this that amateurs who would desire to make a special feature of a few plants should in the first instance provide a fitting and a permanent home for these very desirable garden flowers. There are some excellent varieties in commerce at the present time, and a good one, if costing a little more primarily, will not require any more room than an inferior variety, while the satisfaction and pleasure obtainable by planting the best kinds will increase year by year, as will also the plants and the quantity of flowers. E. J.

CLEMATISES.

THERE are few plants that give more satisfaction than the Clematis, for it is hardy, beautiful and easily cared for. To do well it must have rich soil. When planting, dig a large and broad hole, and fill it in with a compost of one-half well-rotted cow manure and one-half good strong rich loam. The Clematis also likes plenty of water while in bud and bloom, but not on the tops, as the water spoils the blossoms. The early or spring bloomers, which flower on the old or last season's growth, should not be pruned until all the blossoms are gone, while the summer and autumn bloomers, also the bush varieties, can be trimmed in the spring, as they blossom on the young wood. The best of the shrubby or bush sorts are *C. stans*, *C. Davidiana*, *C. erecta* and *C. erecta flore-pleno*, the last-named being very scarce and hard to obtain. Most of the climbing, spring-blooming varieties have light lavender or white flowers, and all are handsome. One of the very best is Miss Bateman, with large satiny white flowers; with me it has a tendency to bloom from the ground up, and is desirable for planting by a verandah on that account. Most of the climbing sorts (unless trained horizontally) are allowed to grow or are trained perpendicularly, and the result is a mass of blooms at the top of the trellis. In this way they are not nearly so beautiful as if trained so that the whole vine would have flowers from the ground up. Owing to the fashion of having dwellings and even the roofs painted in loud and glaring colours, it is difficult to recommend any variety of Clematis to plant against a porch, except some of the white sorts, as the contrast would cause ridicule. Some of the double-flowered climbing sorts, like Duchess of Edinburgh, do not grow with me so strong as the single sorts. The gem of the summer-flowering varieties is Jackmanni; it is especially desirable and beautiful as a bedding plant grown as follows: Make a circle 12 feet in diameter, cover it with netted wire, known as chicken fencing, laid flat, but raised from the surface of the ground at outer edge 1 foot; at the centre of the circle raised from

3 feet to 3½ feet, leaving three or four narrow spaces from outer edge to near the centre, large enough to walk in to train the plants. Plant on outer edge from eight to ten plants of Jackmanni in specially rich soil, and the second year they will be beautiful and improve every year. The wire netting is supported from the ground by strong wire or thin iron, bent square, and with both ends in the ground, and the netting tied to it to hold it in place. It can be removed during the winter.

The best of the late summer or autumn-blooming varieties is *C. paniculata*. This is truly a gem. On account of its Hyacinth fragrance, handsome foliage, and pretty white star-shaped flowers, it is peculiarly adapted for planting near verandahs. I have cut shoots of it this summer from 10 feet to 12 feet long, covered from end to end with beautiful white flowers. Just imagine how nice this flower is for decorating a table or room, and for relieving the effect of large flowers in bouquets or baskets it is as good as *Stevia* or *Gypsophila pani-*

Penshurst a scented *Carnation*? I have grown some hundreds of it, but never found the flowers sweet-scented.—HIGH PEAK.

USE OF OIL JARS.

THESE great handsome jars used for bringing the finest oil from Italy to London may be made good use of in the garden. We saw a pair in Mrs. Earle's garden at Woodlands, Cobham, used with very good effect—one on each side of the garden door. The best things to put in them would be half-hardy plants, like Myrtles, large Heliotropes, or Oranges, which could be taken intact into the cool greenhouse or conservatory at the approach of frost.

THE AURICULA—SHOW AND ALPINE.

THIS pretty spring flower begins to get very interesting soon after the new year comes in, especially if a good collection of the best show varieties is grown, for if the plants are grown in a heated house the leaves slowly unfold soon after Christmas. There is considerable difference even amongst the best cultivators as to the treatment of these choice alpine plants. I was talking to a good grower and successful exhibitor of Auriculas, their winter treatment being the theme, and my friend seemed quite surprised when I stated that I liked to expose the plants to a good hard frost. His treatment was the very reverse of this, for he hurried his plants into a heated house as soon as frosts set in, and did not like them to be exposed to a lower degree of cold than about 35° Fahr., this over-careful treatment making them quite greenhouse plants. Our entire collection is now out in the open garden fully exposed to frost, and as I write these lines the plants are frozen to the bottom of the pots; every part of the ball is as hard as stone, for the ice is 3 inches thick, and we have had 18° of frost. I find when the plants have been exposed in cold frames to a rigorous winter we have very little of the woolly aphid, which seems rather tender, and cannot endure being frozen hard for a week or two at a time. I fancy if Auricula fanciers were to return to the old-fashioned way of frame culture entirely, never allowing the plants to go into a greenhouse, we might have less bother with this troublesome parasite. The great advantage of a heated house for Auriculas consists in the facility with which the plants can be protected when they are in blossom. The flowers of these garden favourites are more fragile than one would suppose. They suffer



Italian oil jars used for half-hardy flowers. Engraved for THE GARDEN from a photograph taken at Woodlands, Cobham.

culata, or *Statice imbricata*. When well taken care of it grows from 15 feet to 25 feet in a season, commencing to bloom the last week in August, and lasting until October 1. The curiously shaped seed-pods, which when ripe are slightly red and green, are as effective as the flowers, when combined with autumn leaves and grasses for decoration. It grows readily from fresh seeds. It will become very popular as soon as it is known to the public. I have heard of some trying to palm off *C. flammula* for *paniculata*.—J. T. TEMPLE, in *American Gardening*.

Autumn-flowering Carnations.—In THE GARDEN for December 3, Wm. Allan, Gunton Park, writing on the above, recommends *Celia* as a good autumn bloomer. I have looked through several catalogues, but cannot find it mentioned, and as I am getting a collection together should like to add it to my list. Does Mr. Allan grow one called *Saccharissa*? It is one of the best autumn bloomers that I know and stands forcing well. It is a true *Carnation*, yellow striped carmine, faintly Clove-scented. Does Mr. Allan find the *Pride of*

sadly from damp, and frost is ruinous to them. From an ordinary garden frame frost may be kept out by double mats, but these encourage rather than defy damp; whereas in a heated house or pit the blossoms are not in the least injured either by the damp or the cold. About the middle of January, or at least not later than the first week in February, we place our plants in a pit heated sufficiently to keep the frost out, but we do not mind the temperature falling so low as the freezing point, as this I find does no injury to the most delicate flowers when the air is dry, for we are careful to see that the atmosphere is dry when a low temperature is expected. At this season of the year the plants require very little water indeed, and it is usually applied to them early in the day, so that the paths, &c., may be dried up before the house is shut up in the afternoon. Artificial heat should be applied very carefully, and only to keep out frost. An important part of the cultivation of the show Auriculas used to be the surface-dressing, which was always considered an essential part of their culture, and no good grower would venture to leave this out of the year's work. I regularly surface-dress our plants for years, and generally

found that few or no roots were found in it at the time the flower-trusses were fully developed. I examined plants in other gardens near Manchester where very much richer dressings were used, and found the results the same; so it was gradually dropped, and the plants seemed to do just as well without it.

Green-fly is the most troublesome parasite we have to deal with amongst Auriculas; it is more partial to the green-leaved varieties, not caring to attack those with the farina densely powdered upon the leaves, although they are not exempt from it. The fine grey-edged variety George Lightbody is most frequently attacked, but Prince of Greens, Rev. F. D. Horner, and other green-edged varieties are much injured unless the pest is destroyed on its first appearance. It is well to fumigate the plants in the house as soon as they have made a little growth, and this will destroy any that may yet be invisible to the naked eye. The trusses and leaves are apt to become drawn up in a heated house; therefore, see that plenty of air is admitted, but care should be taken to shelter the plants from frost winds from whatever direction they may blow. The trusses must also be shaded from bright sunshine, which would soon curl up the petals, especially those of the selfs, which curiously enough are much more susceptible of injury from sunshine or cold winds than those of the grey, green, or white-edged varieties.

In the early spring months the seedlings just pushing out of the ground demand attention. It is better to place the seed-pans in the house with the flowering varieties, as they come up more freely and grow more rapidly, but they do not make very much growth at first, and it requires some patience to prick out the tiny seedlings which may have just made their first leaves after the two seed leaves. A dozen of these minute plants may be put into a 3-inch pot. The soil must not be suffered to become dry, or the plants may disappear. The off-sets put in last autumn will also require to be potted off; some of them are so small, that they must be planted in $2\frac{1}{2}$ -inch pots, and it is well to repot the whole of them in February whether they be large or small, as they start away more freely in the new soil, which should be a little lighter than that used for the flowering plants.

Alpine Auriculas of the choicer named varieties do better in pots and treated very much the same as the show varieties, but the flowers are altogether less liable to injury from cold winds or from frosts. They are nearly all well adapted for planting in the rock garden or for the front lines in herbaceous borders; they like well-drained good soil, moist in summer. The potting soil for Auriculas is not quite so important as some fanciers would lead people to believe. I have tried them in the most approved composts of the old growers, and find that they were much in error in the use they made of rich stimulating manure. The plants, if overfed, are generally short-lived. They thrive admirably in the same soil we use for Fuchsias, Pelargoniums, and plants of that kind, such as four parts of good loam, one of decayed cow or horse manure, one of leaf-mould, and a sufficient allowance of coarse white sand. The flower-pots should be well drained and the plants may be repotted once a year during the summer months.

J. DOUGLAS.

Planting perennials.—For some plants particularly such as flower in the early spring months, it will be obvious that to plant these the moment they are in flower, or expected to flower, is altogether wrong, as not only does it completely spoil the season's blooming, but it likewise overtaxes the energies of the plant at a wrong season, while if the planting be done when growth and flowering are completed, the strength of the plant may be all directed to one important particular, namely, that of becoming established. Nor is this all, for invariably in the autumn there is time for such work to be done well, but in the springtime there is a greater demand upon one's time—so much so, that the work is often done hurriedly and too often thoughtlessly, and has to be done over again.

Just such an instance occurs to my mind. A newly-made border of herbaceous plants was planted last spring. It was about 150 feet long and 6 feet wide. Unfortunately the plants came to hand at a busy time, but as the border was ready, the plants were unpacked and planted in the course of an hour or so, or rather they were put in small holes and a little earth placed round them, and the owner boasted of the rapid way in which the work had been done. The result of all this was that this border was an eyesore all the summer, and only the strongest and most vigorous plants made any attempt to grow. Singularly enough I paid a visit to this very garden the other day, and found it all topsy-turvy, and a couple of men digging up the 3-feet-high plants from near the grass verge, and changing their places with those whose stature was only some 6 inches, and which in the hurry and bustle had been planted at the very back of the border. It is, therefore, best to undertake such work at the right time, and when due thought can be given it.—E. J.

THE WEEK'S WORK.

HARDY FRUITS.

PROTECTING GOOSEBERRIES.—In suburban gardens house sparrows are the greatest enemies to fruit-buds, more especially those of Gooseberries and Currants, but well into the country these are not nearly so troublesome, though bullfinches work more destruction even than do all other kinds of birds in the aggregate. Early pruning naturally favours the birds' movements, and greatly lessens the chance even of a partial crop of fruit being had. In all cases, therefore, where the buds are liable to be cleared off wholesale defer pruning till they are too far advanced in growth to be interfered with, some market growers not pruning till the earliest fruits are large enough for marketing. Protective measures should be early resorted to, not waiting till the birds have already made a start, bullfinches sometimes nearly clearing the bushes of buds before being seen. Covering permanently with three-quarter-inch galvanised wire netting is the surest and in the end cheapest form of protection, and if a framework is erected over the bushes fish-netting may be used instead, this being taken off when the bushes are in full leaf, and returned directly the fruit commences to ripen. Black cotton or cheap thread freely run from branch to branch in all directions, and this can be done very rapidly by means of a shuttle sold for the purpose, greatly baffles small birds and not unfrequently saves the greater portion of the buds. Lime and soot water applied to the bushes with a syringe, so as to coat them with the mixture, is another good preventive of bird attacks, but this is liable to be washed off, and must be renewed once or twice during the early spring months. One of the oldest and still one of the best ways of baffling birds is to gather the bushes well up together in the form of a cone. Two pairs of hands well furnished with leather gloves are needed, the branches being kept together by means of a few coils of strong tar-twine. When the branches are thus well drawn up together the birds rarely ever touch the outsides of the cones even.

PRUNING GOOSEBERRIES.—Where pruning can safely be performed it should be done soon, this admitting of the ground being manured if need be and very lightly forked over, so as to turn in the weeds or manure without damaging many surface roots. The bushes not being crowded, much thinning out and reducing of size are not desirable, by far the heaviest crops being had where the market growers' very light system of pruning is followed. In this case only the lower under shoots are cut out, the fruit on these being liable to be spoiled by splashing, while any straggling growths or branches are cut back to well placed back shoots, with a view to preserving well-balanced heads. If very crowded, a little thinning out may

also be done with advantage, the old bearing wood being principally removed, the bushes when completed bristling with young shoots left to their full length. Fairly good crops can be had by spurring back all the young shoots to the old wood, much as Red Currants are treated, and those trees trained against north walls or a fence of any kind should be pruned in this manner. In these instances train the leading branches about 6 inches apart straight up the walls or fences, and do not shorten them till the limit is reached, the strong side shoots being well spurred back. Young plants should be freely cut back till sufficient shoots are obtained to lay the foundation of a tree or bush, after which be content to thin out the latter, spurring back all superfluous shoots on the trained trees. Gooseberry cuttings may be made and inserted in a border at the foot of a north or other cool wall whenever there is no frost in the ground. Select long and straight young wood, as Gooseberry bushes with short stems are of little value, this being especially the case with many of the large fruited varieties, which seem to prefer trailing on the ground to growing uprightly. Shorten the cuttings to a length of 15 inches, cut cleanly across below the lowest joint and trim off the thorns and all but the topmost four buds. Insert these cuttings 5 inches deep and 9 inches apart in rows 18 inches apart, taking good care to fix them firmly. Most of them will strike root and form three or four shoots next summer, and these being cut freely back during the following winter good serviceable bushes will be the result.

GOOSEBERRY CATERPILLAR.—Very severe frosts have no appreciable effect in reducing the severity of attacks from the grubs of the Gooseberry saw-fly; in fact, they never did more mischief than during the summers of 1891 and 1892. The cocoons must be impervious to frost, as the latter finds its way far more deeply than the former are supposed to hibernate. Where there were attacks of caterpillars last season, there is every probability, unless preventive measures are taken, of there being still more of them to contend with next season, and even if only a very few were seen, something should be done to guard against worse attacks next April or May. A heavy dressing of newly-slaked lime, lightly forked into the surface well up and to a distance of 2 feet from the stems, will sometimes prove efficacious, as will also a light surfacing of gas-lime; but the plan of removing the surface soil well down to the roots, burning this and the cocoons it contains, replacing the soil with fresh loam and manure, is most to be commended. Where spent tanner's bark can be had fresh from the tanyard, a heavy mulching of this, especially about the stems of the bushes, is an excellent preventive, the flies apparently never finding their way through this, or else the juices worked down are destructive to the cocoons. The trees and bushes in quarters permanently netted in are the most liable to be over-run by caterpillars, most probably owing to the flies being protected from birds, as the latter are very fond of the caterpillars.

CURRENTS.—Red and White Currants are also liable to be stripped of buds by small birds, but not so much so as are Gooseberries. The same preventive measures, with the exception of that last mentioned, are applicable as in the case of Gooseberries. Not much, if anything, will be gained, however, by delaying pruning any longer. Red and White Currants grown as bushes on a short clear stem should have the centre kept open, the main branches being left about 12 inches apart. In order that the latter may be well furnished with short fruiting spurs, the leading shoot on each ought to be shortened to about one-third of its length, and where there is room for another branch, reserve a well-placed young shoot, shorten to one-third of its length, and gradually build up a strong bush. All superfluous or side shoots should be spurred back to about half an inch of the old wood, the fruit being principally borne in clusters round these spurs. Cut young bushes back rather freely until a good foundation is laid. Wall trees should be pruned on similar lines. Black Currants should be cut rather hard for two or three

winters, or till a good head is formed, after which be content to keep the young shoots freely thinned out, only foreshortening all straggling branches. Propagate exactly as advised in the case of Gooseberries. W. IGGULDEN.

THE KITCHEN GARDEN.

MUSHROOMS.—Up till now the weather has been all in favour of Mushrooms in heated structures, the temperature keeping up well without having recourse to too much heat in the pipes. Now that there is a sudden change to severe weather, there is the danger of the air becoming too dry for the well-being of the Mushrooms, that is if the temperature is kept too high; 55° is a suitable temperature, or it may drop 5° lower on occasions. Lower than this the Mushrooms do not grow freely enough. I have previously called attention to the advisability of keeping the surface of the beds which are in bearing covered over with clean mats, kept off the surface by strips of wood resting on bricks. This keeps the temperature about the surface more regular, and when the pipes are warmer it does not affect the growth, as it might do where fully exposed. Where the surroundings are likely to become dry, do not on any account neglect damping down, a little liquid manure also being very beneficial, this assisting in charging the air with ammonia, which is desirable if Mushroom culture is to prove successful.

SUCCESSIONAL BEDS.—During severe weather where the material is being prepared in open sheds, the frost is apt to take an effect upon it. This must be guarded against, or else when made up the bed will rapidly become too hot. To guard against this, cover the heap of material over with a few old mats or even long litter. This will draw up the heat and so cause the moisture to become dispersed. To get Mushroom-bed material into good condition for making up into beds, the moisture must not be dried out, but dispersed through the action of fermentation. The beds cannot be made too firm, as with well-prepared material the beds are not likely to rise too high. After the beds are spawned and ready for soiling, take care not to use cold soil from the open. It should be taken into the structure a few days beforehand, so as to become well warmed before being placed in close contact with the manure. For keeping a suitable temperature in the bed whilst the spawn is working, use a few old mats laid on the surface in preference to hay, which lies too close.

ASPARAGUS.—With the turn of the day Asparagus forcing will become more general. Of course, the supply to be obtained will depend upon the roots at command, as with a sufficiency of strong roots the forcing of Asparagus is a simple matter. A low-heated pit or frame is the best position for forcing, as here the temperature is easily kept up. The bottom of the frame should be filled up firmly with well-worked fermenting material as a medium for bottom-heat, this ranging about 80°. A layer of 2 inches or 3 inches of light and friable soil should be spread over and underneath the crowns. A watering with tepid soft water at a temperature of 90° will assist in settling the soil about the roots and starting the grass into growth. A top-heat of 55° to 60° will be quite high enough. In three weeks it should be fit for use. Whether it should be blanched is a matter of fancy, but if so, excluding light by covering over the glass will be found the best plan, or rather better than covering over the crowns with an extra depth of soil. Where the forcing has to be carried out solely in hotbeds see that the material is in a suitable condition for maintaining the heat, as on this depends whether the roots are enabled to be well forced out.

SALADING.—Unless provision has been made, the supply of Lettuces in many instances may be getting scarce. Salad without Lettuce is poor, and however plentiful other material, such as Endive, Witloof, Mustard and Cress, may be, Lettuce is necessary to make it thoroughly appreciated. In the event of Lettuce falling short, seed may be sown thickly in boxes and the young plants cut over in

the same way as Mustard and Cress. Up till now it has not been any trouble to blanch Endive, this taking place rapidly either in the frames or even when stored in sheds. If blanching should be backward, this now quickly takes place by placing a few heads in the Mushroom house at intervals of a week. Do not put in large quantities, as when once blanched decay is not long in afterwards setting in. Endive, like Witloof, must not be used too freely in salad. A. YOUNG.

PLANT HOUSES.

FUTURE ARRANGEMENTS.—This is not, strictly speaking, a subject for this week altogether, but relates to work all through the season. At the commencement of a new year it is, however, a matter which should be well considered, so that definite plans may be laid for future working. If one has a clear idea of what should be the future arrangements as it pertains to any department of gardening, and the same is acted upon in good time, the future success in any instance will be more nearly ensured. Later on, as work presses on all sides, it is useless to think or wish that certain things had been done some six weeks or two months sooner so that the most could have been made of the season. A late start in nearly every case means far less satisfactory returns. The requirements of no two places are alike, and cannot therefore be any better compared than can one garden with another as to its successful working. What is wanted, perhaps, very particularly in one instance is probably in another of only minor importance; whilst also what will succeed in one case without any trouble will in another be a source of difficulty to the grower.

For my own part I think it should be a gardener's aim to always have something under cultivation that will create a fresh interest as it develops. To always be following on the same lines year in and year out must in course of time become tiring to those for whose pleasure and enjoyment any gardener has to provide. There is an ample field for extended culture of various plants, more particularly so now-a-days when specimen plants are in less favour than they were. Then, again, the growing of plants for a private supply is totally different from having to provide for the public at large. The more that a private gardener tries to avoid running in the same line as those who grow for market supplies, the better will be the results as it relates to attractiveness. Some plants, for instance, become so common as to be seen here, there, and everywhere. These may be ever so good in their way, but the fact of being met with so frequently causes less interest to be taken in them. The more attractive we, as gardeners, can make our plant houses will not only yield more pleasure to our employers, but should also give to each of us greater satisfaction. A deal which can be turned to a good account by ourselves may be learned by comparison with other cultivators. The sources of supply also are now much enlarged to what they were within the memory of most of us in middle life. It is no very long time since *Spiræa japonica* was seldom seen, or the Roman Hyacinths, or the Berlin crowns of Lily of the Valley; yet now it may be fairly asked, "What should we do without them?" Then, again, as it pertains to fine-foliated plants, many of us can remember when small decorative plants of Crotons, Palms, and other things were only seen in units where they are now grown in scores. Plant culture has undoubtedly increased and widened its borders, taking up more time than it used to do in many gardens without, I fear, in many cases any corresponding increase in either houses or labour. To this I attribute more than anything else the numerous complaints now to be heard of the mealy bug in our fruit houses. This would not have happened if so many plants had not been crowded into them instead of being retained in their own quarters.

The retention of old, shabby-looking and scrubby plants unless for stock purposes should be stu-

diously avoided. The labour involved in bringing back to health a sickly plant oftentimes is more expensive and troublesome than working up a fresh stock. Young fine-foliated plants well grown and in good character are far preferable to others more leggy and otherwise not so attractive. Again, among flowering plants, who would not prefer in the case of *Ixoras* and *Gardenias* in the stove, of *Epacrids* and *Azaleas* in the greenhouse, comparatively young plants to others that are possibly larger, but in a measure starved? The overstocking our plant houses with any one given kind of plant is a mistake, and to the detriment of other things in the long run. Then, again, where every success has attended the labour bestowed upon any particular subject for some few years, there will in some cases come a time of failure through the want of proper care, future success being reckoned on as a matter of course, as in the past. It is thus possible to get quite out of the running, so to speak, the reason why not being attributed to the real source of failure.

In cases where plants of their respective kinds have been grown for several years and made prominent features, it is just as well to endeavour to work in something fresh to afford variety. The arrangement too of the plant houses if copied from year to year will cause a lack of interest, the same plant or plants, may be, in the same place. These if not too large or too heavy to be moved may advantageously be turned about, others being brought into more prominence if possible. Any possible feature that can be worked out should at least be attempted. For instance, where basket plants have received but scant attention, there is a wide scope for fresh features. So also is there in the many climbing plants for the roofs of stoves, temperate houses, and greenhouses. The covering of bare and oftentimes unsightly walls is another subject worthy of extended notice. There is, in fact, many ways and devices which suggest themselves if future arrangements are duly considered in good time.

J. HUDSON.

ORCHIDS.

ALMOST as soon as I had penned the remarks in my last cultural notes the weather changed to intense frost, clear and bright at first, but near London at least this clear weather could not be expected to last, and soon we had the usual keen frosts and very dense fogs. Cultivators with but little experience get alarmed when they have to face a combination of fog and intense frost, but there is no need for anxiety when the houses are well built and the heating apparatus in order. In such weather as we now have it is easy to realise the value of houses well furnished with hot-water pipes and a good heating apparatus, for where there are many glass houses and several boilers driven to the full limit of their working powers with several thousand feet of hot-water pipes, a gardener cannot keep his mind easy in severe frost unless he has confidence in the material. Indeed in some gardens not only is a spare boiler kept in stock for an emergency, but spare collars, lengths of pipes, elbows, T pieces, &c., so that workmen may have everything at hand to repair any damage that might occur. It is almost impossible to tell beforehand where a leak or fracture in pipes or boilers is likely to occur, and a collection of choice Orchids might be ruined for lack of this preparation. The season is now close at hand when many plants will be in full growth; indeed some are now in the midseason of their growth. Such are *Miltonia Roezli* in the warmest house and *M. vexillaria* in the Cattleya house. At this season both of these well-known species should be as near as possible to the glass roof without endangering their life or health by being subjected to a too low temperature, for the coldest part of any Orchid house is near the roof glass close at the base of the rafters or sash-bars. These two species should be repotted at the end of summer or early in autumn, and I have so often urged the importance of keeping them free from insect,

pests that no more need be said on that point for the present. Other species of *Miltonias* cultivated in pots or pans, for some of them are better grown in one and some in the other, as *M. candida* and the variety *grandiflora*, which are so useful for flowering in September; also the vigorous *M. Regnelli* and *M. Clowesi* may be planted in flower-pots quite half filled with clean potsherds laid in loosely. Others, of which good examples are *M. spectabilis* and *M. Moreliana*, which are of dwarfer habit and extend themselves laterally, may be planted in pans; the best potting material is equal portions of good fibrous peat and Sphagnum, mixing with this a good sprinkling of clean potsherds broken up and some pieces of charcoal. I do not like much charcoal, nor coarse white sand, both of which are sometimes too freely used. Nearly all these *Miltonias* are *Cattleya*-house plants, and they seem to do better on the more shaded side of the house. Some persons tell us to arrange our Orchids on the shady side in summer, but advise them to be placed where they can obtain all the light possible during the winter. This may do very well for those who grow a few dozen or even a hundred or more, but when the houses are filled with plants it cannot be done, because those plants that require much light in summer also require all that it is possible to get for them in winter; it would be an absurd thing to move *Cattleyas* and *Lælias* from the lightest part of the house in winter to make room for *Miltonias* and such things. We have to leave them where they are, and find it answers best, but it is not difficult to raise them a little nearer to the glass. Many plants of *Miltonias* die altogether through exposure to too much sunshine. Some of them take on a greenish yellow tinge naturally in the foliage, but the green disappears altogether sometimes, and the plants languish and die. It may be necessary with some old plants to break them up and remove most of the spent bulbs, repotting them again in smaller pots and pans. When Orchids of this kind show symptoms of bad health it is caused either by too free exposure to sunlight, overpotting, or an injudicious application of water.

The early summer-flowering *Cypripediums*, such as *C. villosum* and *C. villosum* var. *Boxalli* now require plenty of water at the roots, and the plants which were not repotted last year should be top-dressed; we use a little good fibrous loam with the peat for these, and also for *C. caudatum*. They are all showing their flowers, and to ensure a good bloom they should have liberal treatment. We have plants it takes two men to move down from the stage, and such large specimens are repotted once in three years only, but they are surface-dressed every year about this time. I begin to have much more faith in surface-dressing Orchids than I used to have. We may take it that whether they are the terrestrial species like some of the *Cymbidium* and *Cypripediums*, or truly epiphytes like the *Lælias* or the *Cattleyas*, under the natural conditions of their growth they always receive what we would call a surface-dressing from decaying leaves or other organic matter. We may see how much tendency all Orchid roots have to run up to the surface of the potting material or to run through it close to the surface, not dipping into it until they reach the sides of the flower-pots, when they either push down between the sides thereof and the potting stuff or else turn round when they come to the crocks and go quite round their circumference inside the rim. *Cymbidium eburneum*, *C. Mastersi*, *C. Parishii*, &c., which are usually potted in loam with the roots well under the surface as we would repot a *Pelargonium*, will at this season push them up to the surface, and they may be seen pushing about with the points of the shoots showing above ground as if they were looking for fresh material. I generally at this time place a surface-dressing of two parts loam and one of manure with some coarse sand added to keep the material open, and into this the new roots run freely. It is better to put two dressings than too great a thickness of it at one time. While the severe frost lasts do not try to keep up the night temperature quite up to the regulation standard.

We have often had the *Cattleya* house down to 50° and the warmest house to 55° in very cold weather without any injury to the plants.

J. DOUGLAS.

ORCHIDS.

MASDEVALLIAS OF THE SACCO-LABIATE GROUP.

I AM very fond of these plants, and I fail to see why they are discarded so much, for although this section of the genus commands a better price than many of the other groups, it is not very popular. It should be borne in mind that the species belonging to this group of *Masdevallias* are found growing at lower elevations than is the case with many of the other species, consequently more warmth is required to ensure their well-being. I do not think they will succeed unless a temperature of about 50° is maintained. In such a temperature I have found them thrive well through the winter, usually flowering in the early spring months.

M. CHIMÆRA, which may be taken as the type of the group, is found growing on the trunks of trees, and was first introduced by M. Linden, of Brussels, who at the same time imported with it *M. nycterina*, which although of the same group is yet very inferior to it. The true form of *Chimæra* is a grand flower; the scape usually points downwards, bearing several flowers; these are triangular in outline, the ground colour pale yellow, much spotted, with blackish purple and copiously veined with the same colour, the entire inner surface being hispid; the tips of the sepals are lengthened out into tail-like points, and thus the flower measures a foot or more across from tip to tip of the sepals. Of this plant there are several varieties, most of which have been described as specific forms, but I quite agree with those who put them down as varieties of *Chimæra*. I may notice the following as being the most remarkable, viz., *Roezli*, *Roezli rubra*, *Wallisi*, *Gorgona*, *Winiana*, and *Backhousiana*, with several others which vary in colour and size considerably from the typical plant. In a state of nature they grow upon the branches of trees where they get an abundance of shade and moisture; here the plants grow with the greatest vigour. Where the atmosphere is not so suitable the growth of the plants is less robust, although they bloom quite as freely. These plants require a slightly warmer atmosphere during the winter, not but that they will exist and flower well too if kept in the cold house, but this causes them to lose the upper part of the leaves, which turns brown. I therefore think the best plan is to remove them to the *Cattleya* house in the winter months, putting them back into the cool house as the sun begins to shine with more power. They may be grown in hanging wire baskets, which should be well drained and filled with a mixture of good leaf-mould and peat fibre. The plants should have abundance of moisture throughout the year, but less during the winter than at any other time.

M. BELLA is another species of this section, with quite as massive flowers as *M. Chimæra*, but the tails, I think, are not so long; the sepals are ochrous-yellow on the inside, blotched and spotted with brownish purple. On the outside they are of a deep purple; the lip is large, shell-like, and pure white. It grows under the same conditions as *Chimæra*, being found with it in a state of Nature.

M. CARDERI, although not bearing a large flower, is one of the prettiest of the genus. It was discovered by Mr. Carder and sent home to his partner, Mr. Shuttleworth, at Clapham Park, some ten years ago. The blooms are campanulate, the colour white, brownish purple near the base, the small tails being about 2 inches long, yellow. In a plant which I saw flowering with Mr. Seeger at Dulwich I noted the tails were quite 2½ inches

long and of a soft purple. It is quite a gem amongst *Masdevallias*.

M. HOUTTEANA is another very interesting and free-flowering plant, with blooms of a creamy white spotted with reddish purple, the tails of the sepals being of the same dark colour. It is named in honour of M. Louis van Houtte, of Ghent.

M. NYCTERINA was distributed in the first instance as *M. Chimæra*, and though far less beautiful, it is a very distinct and pretty plant; the sepals have a ground colour of pale yellow, freely spotted with purple, the tail-like points being of the same dark colour, and about 2 inches in length.

M. RADIOSA is another beautiful plant, having somewhat small flowers, which are of a blackish hue; the tails almost black and the shell-like lip white.

The above, together with *troglodytes*, *vespertilio*, *erythrochaete*, and *Chestertoni*, comprise the majority of this group hitherto brought into cultivation; all will thrive and do well under the same conditions.

WILLIAM HUGH GOWER.

Lycaste Harrisoniæ eburnea.—J. Edwards sends me a beautiful flower of this variety. It is a massive waxy flower, and the slightest bruise robs it of its beauty. The sepals and petals are thick and massive, waxy in texture, and pure ivory white; the lip, too, is white, streaked and veined with purple, the base of the lip being soft yellow. This is a variety of the old *L. Harrisoniæ*. The typical plant, this variety, and any other forms are all deserving special attention.—G.

Orchids for an intermediate house (*C. Pearson*).—You have not been forgotten, although some time has elapsed since you asked for the names of about a dozen Orchids which would grow and thrive with your other plants. The following I think you will find suit you well: *Aerides odoratum*, *A. crispum*, *Brassia Lawrenceana*, *Calanthe masuca*, *C. veratrifolia*, *Ceologyne cristata*, *Cattleya Mendeli*, *C. labiata*, *Cymbidium Lowianum*, *Epidendrum radicans*, *Lælia purpurata*, *Lycaste Harrisoniæ*, *Miltonia candida*, *M. Clowesi*, *Oncidium sarcodes*, *O. sphacelatum*, *Phajus grandifolius*, *P. Wallichii*, *Sobralia macrantha*, *Vanda Amesiana*, *V. Kimballiana*, *V. tricolor*, *Zygopetalum crinitum*, and *Z. Mackayi*. There are many others which would thrive with you, even if the temperature of your house falls a few degrees lower than you put it.—W. H. G.

Lælia peduncularis.—S. Carmichael sends me a flower for a name, which I give above. This was always said to be a rose-coloured variety of *L. acuminata*, but this plant has proved itself to be the same as Lindley called *L. rubescens*. It is a dwarf evergreen plant that succeeds well in a well-drained pot or basket, which should be hung up near the roof-glass. It requires the heat of the *Cattleya* house, with plenty of water to its roots and moisture in the atmosphere when growing, and any amount of light and sunshine, shading only slightly during the middle of the day. When its growth is completed it may be removed for a time to the warm end of the cool house, but when the flower-spike or spikes appear a little more heat and water will greatly assist in developing the blooms, which are of a beautiful bright rosy purple with a blotch of very dark purple in the throat.—W. H. G.

Dendrobium album.—Of this plant there must have been a good importation some time ago, as I have seen it flowering in a great many gardens quite up to the end of the year. In all the gardens that I have seen this plant it is named *D. chrysanthum album*. This is wrong, as *D. chrysanthum* has nothing in common with this species, which at first was named *D. aqueum*. It requires strong heat and plenty of moisture when growing.—W.

Lælia Arnoldiana.—J. Crispin sends a flower of a beautiful *Lælia* which I take to be this plant. It was introduced a year or two ago by Messrs. Pitcher and Manda, of Hextable. It is a lovely

flower, measuring 4 inches across, and of a cheerful rosy pink hue, the sepals having plain edges, the petals slightly waved at the margins. The side lobes of the lip are slightly paler than the sepals, the front lobe flat and of a deep rich rose colour, the throat traversed by two yellow raised plates. It must not be confounded with *Cattleya Arnoldiana* raised and sent out by Mr. Sander. This is a cross between one of the summer-flowering *C. labiata* and *Lælia purpurata*.—W. H. G.

Odontoglossum constrictum.—H. Brown sends a nice spike of this plant with the query, "What is this? It is a very pretty and fragrant plant." The blooms each measure $1\frac{1}{2}$ inches across, the sepals and petals nearly equal, ground colour bright yellow, blotched with tawny brown, the lip white, blotched with rose in the centre.—W. H. G.

Odontoglossum gloriosum.—Amongst a fine lot of *Odontoglossums* in Mr. Cobb's garden is a very fine form of this plant. This is the form figured by Bateman, having a large branching spike and good-sized flowers, the ground colour being a light yellow, blotched and spotted with chestnut. *O. gloriosum* seems to be rather looked down upon by growers, but I think, though less gay and attractive than *O. crispum* and many others, it well deserves extended cultivation.—W. H. G.

Lælia autumnalis atro-rubens.—A fine flower of a very nice variety of this plant comes to me from the Rev. E. Handley, Bath. The flowers are superior in size to those of the typical plant, and, besides, are more brilliant in colour. The sepals and petals are of a uniform rich bright crimson, faintly tinged with purple, the throat and side lobes of lip, both inside and out, being pure white, whilst the front lobe is of a deep, but brilliant crimson, the column crimson-purple. It is one of the best forms of this variety which I have seen.—W. H. G.

Odontoglossum Wilckeanum.—J. Herriot, in sending a flower of this plant asking my opinion, says it appeared amongst a lot of *O. crispum* which he bought two years ago. The above is what I take it to be. It is a supposed natural hybrid between *O. crispum* and *O. luteo-purpureum*. The flower now before me is a beautiful variety, the sepals and petals measuring close upon 4 inches across; these have a creamy white ground, faintly tinged with yellow, and broadly blotched with reddish brown, but the lip is too much curled, and detracts from the beauty of the flower.—G.

Lycaste plana (*M. C.*).—This is the name of the flower sent. I do not know what you mean by the true tricolor, as I do not remember a species so named. The plant does exhibit three colours, *i.e.*, green in the sepals, white petals, and a crimson front lobe to the lip. This kind blooms during the autumn and winter, and is very pretty, although somewhat cast on one side by many, the green sepals being the cause I suppose. It lasts a long time in good condition.—W.

Phalænopsis speciosa.—"J. B." sends me blooms of this species which bear out the remark that it is a variable plant as regards the colour of its flowers, No. 3 being a good form of what I regard as the typical plant, having sepals and petals spreading and nearly equal, of a uniform rich magenta, with a narrow marginal white border. The lip is small, furnished with a brush in front. The other flowers are deficient in colour, and the sepals and petals are more or less transversely barred with white. This I look upon as the true *speciosa*.—W.

Chrysanthemum M. E. A. Carriere.—This is a splendid variety for giving late blooms. When cultivated for a limited number of large blooms the colour is bluish white, but grown rather for a number of smaller flowers it is pure white. I cut a fine lot of it for Christmas Day from plants struck rather later than those for large blooms. The points of the shoots had been pinched out about twice and the plants were allowed to grow away at will and produce their flowers in clusters of

three and more on each branch. In this manner the flowers are really fine for any form of decoration. If a few larger blooms are required, remove all side buds, allowing but one on a shoot to develop.—E. M.

ORCHARD AND FRUIT GARDEN.

FRUIT GARDEN IN A MUDDLE.

AMATEURS in very many instances display a lamentable want of system in their arrangements of fruit trees and bushes, and not a few private gardeners are content to plant pin-cushion fashion. Vegetables and fruit can be grown together with a fair amount of success, but in most instances the results would be far more satisfactory if the trees and bushes were grouped together, the vegetables also having their quarters wholly given up to them. The fact of the gardens being on a small scale, or say half an acre or thereabouts in extent, does not materially alter the case, unless to strengthen my arguments in favour of some system of arrangement other than that which generally passes for such. If either standard or half standard fruit trees of any kind are dotted about the garden, these greatly interfere with the cultivation of the ground, and in the course of a few years vegetables cannot be profitably grown under or very near to them; whereas bush or small fruits succeed admirably planted as an undergrowth to the trees. The ground, being broken up to a good depth, or bastard trenched where the subsoil favours this proceeding, and in fairly good order as far as fertility is concerned, will support the trees and bushes for several years without manurial dressings being applied, while in after years a good surfacing of solid manure forked in or otherwise during every second or third winter will be all that is further needed. Digging among or about fruit trees and bushes is most injurious to these, as it inevitably destroys very many of the best or most fibrous roots. Vegetable culture simply drives the roots of fruit trees down into the cold, and in many cases very poor subsoil, the usual result of this injuriously deep root-action being first a strong unfruitful top-growth, and then a gradual decline in vigour till they become stunted, the crops being of poor quality accordingly.

Now if the trees and bushes are all grouped together, preferably in one quarter, or else alongside the walks, there is a greater likelihood of these receiving fair play, the vegetables also thriving far better when they get the full benefit of deeply, well-cultivated ground and are not unduly shaded overhead. Stunted trees, scrubby bushes, and Strawberries too old and poverty-stricken to produce fruit worthy of being protected from birds prevail in far too many gardens, and more often than not are most apparent where there is no system of arrangement. In these days of cheap vegetables and fruit these must be well grown, or they will not pay for the labour and room expended on them, and I would, therefore, strongly advise the owners or those in charge of badly arranged gardens to take steps at once towards rectifying the blunders that have previously been made. Large bushes of Currants and Gooseberries can be moved readily and without the loss of a crop, always provided an ordinary amount of pains is taken in lifting them so as to preserve a good-sized ball of soil and roots. Old Raspberries do not transplant so well, and the better plan in this case is to form a fresh plantation of these, preserving the old stock till such time as the young canes are strong.

Cherries that have not been partially or wholly lifted during the past ten years cannot be moved so easily or safely, but younger trees or any that have been cut round with a view to causing the formation of a thicket of root-fibres not more than 3 feet from the stem—a distance of 2 feet being preferable—can be shifted with ease and safety. Amateurs, however, ought not to run any great risks with what good trees they may be the fortunate possessors of, but there is nothing to prevent many of them from making quite a fresh start, more especially with young trees not interfering with the best of those they already have till such time as the new trees are producing freely. Evidently the cost of trees and bushes has no deterrent effect on many owners of small gardens, though they seem to prefer to buy a few every winter and to drop these in promiscuously. Better, far better that a good, well-selected stock be purchased and properly planted when the garden is first taken possession of, compensation for this judicious outlay commencing during the second summer after planting, and gradually improving till at the end of about ten years, when all would most probably be at or near their best.

Even when the trees and bushes are grouped together at one end of a garden, mistakes can be, and not unfrequently are made, in arranging them too thickly. If too many standard or half-standard trees are planted, the chances are these will soon over-grow and render of little value the bushes among them. What may be termed the orthodox distance for planting standards is 25 feet apart each way, White, Red, and Black Currants and Gooseberry bushes being arranged 5 feet apart each way all over the intervening spaces. If the standards are valued more than the undergrowth, and there is no mistake about their productiveness during an average season, it may be thought desirable to have rather more of these and fewer bushes. In this case the standards may be planted more thickly if due regard is paid to the habit of the kinds and varieties, those of strong growing, spreading habit alternating with those either less vigorous or of more erect growth. Plums are admirably adapted for alternating with Apples, Pears also as a rule requiring less space than Apples. If Apples alone are planted, then ought such spreading varieties as Early Julien, Duchess of Oldenburg, Warner's King, Blenheim Orange, Bramley's Seedling, Golden Noble, Claygate Pearmain, Tyler's Kernel, Peasgood's Nonsuch, Cox's Orange Pippin, Wellington, and Winter Queening to alternate with the more erect-growing Ecklinville, Worcester Pearmain, Keswick Codlin, Manks Codlin, King of the Pippins, Baumann's Reinette, and Pott's Seedling. Under these circumstances, and the ground not being very rich, the standards may be put out 18 feet apart each way and two bushes disposed between them in the lines, and two rows in the spaces between the latter; or if preferred, the standards may be arranged 24 feet apart, pyramids and bushes of Apples, Pears and Plums, the two former on dwarfing stocks, being planted 12 feet apart midway between and singly in the lines of standards, Currants and Gooseberry bushes being also planted singly between the rows of trees and 6 feet apart in a line midway between the latter.

When first put out the ground will be thinly covered in either case, and there is nothing to prevent either vegetables or Strawberries being grown among the trees and bushes for two or three seasons at any rate, bulbous-rooted flowers, notably Narcissi, Daffodils, and Anemones, also succeeding well for many years, or

enough to bear well. Apples, Pears, Plums as long as desirable. If pyramids and bushes are planted alongside garden walks, room can usually be found for Gooseberries in the angles between the trees, Strawberries also succeeding fairly well as a front row. Either single groups of Raspberry canes may take the place of some of the bushes or they may be planted 15 inches apart in rows in the place of Gooseberries or Currants. I. M. H.

Canker in Apple trees.—Canker in Apple trees is, I think, very much aggravated by the conditions of the soil and the manner in which the trees are managed. Some varieties are much more liable to canker than others. It is idle to say that all sorts of Apples will grow in any soil, no matter how favourable the situation may be as regards the climate, shelter, &c. I have here many instances of this. Ribston Pippin as a standard, Scarlet Pearmain as a bush, and Gloria Mundi grown in the same way exemplify this too well. The first has been planted fourteen years, and during that time the tree has been replanted at least three times in various kinds of soil; the stem is thicker, of course, but the head does not cover a bit more space now than it did when first planted. Growth has been made at times freely, owing to the change of soil, but the succeeding winter has laid the foundation of canker, which was fully developed the next season. Many examples might also be quoted of trees that showed decided signs of canker at one time, as the result not of deep planting, but of a system of too close cropping. The constant adding to the soil of manure and other materials raised the soil about the trees so much that the roots were deeply buried, canker in the branches quickly following. The spread of this was checked directly the trees were lifted, their roots brought nearer to the surface, and instead of the ground between the trees being cropped with vegetables, it was laid down to grass. Soil that is heavy, therefore retentive of moisture and consequently cold during winter and spring, is conducive to canker in some sorts of Apple trees, particularly if the roots are deep and away from the influence of the sun. Shoots that are not ripened owing to the causes above named are almost certain to be affected with canker. With such a large number of varieties, it is possible to make a selection suitable for any soil, but the difficulty is to know the offending sorts when making the selection.—E.

Protecting Fig trees on walls.—In the most sheltered parts of the country the covering of Fig trees on walls may not be necessary, but to ensure a good crop it is essential to protect the trees in many districts. I find Bracken well packed among the branches an excellent protection. Of course it is necessary to unnaill the leading or scattered branches, bring them closer home, and then cover with the Bracken. I prefer Bracken cut green and allowed to dry, covering all over with mats to keep the protecting material neat and from being blown about. If the Bracken is allowed to die down before being cut it, is brittle and worthless as a protecting agent. Figs are not readily injured when the wood is kept thin in the summer, and a good ripening season follows. It is after wet autumns that the trees suffer most, hence the necessity of protection. It is also advisable to cover with decayed manure the roots of trees requiring it. Those which are too gross should be mulched with leaves or dry litter.—G. WYTHES.

Pot Strawberries.—Héricart de Thury is the favourite first early variety at Hackwood, where it is remarkably well done. It gives plenty of fruit of capital flavour and good size. The earliest batch of plants I noticed recently standing on the floor of a vinery that was kept only just warm. Mr. Bowerman strongly holds that many failures with early pot Strawberries arise from the too sudden rushing of them from cold into heat; hence he invariably gives the plants a little more for a few weeks in a very gentle warmth. That specially helps to incite the roots to action before the

crowns move very much, and when the plants are shifted into a warmer house they respond to the greater heat with all the more certainty of carrying a good crop. I observed also that at Hackwood the large numbers of pot plants for successional purposes were all standing out in the open on a hard ash floor, and all very neatly and perfectly set in ashes, being also banked all round by a mass 12 inches wide. It is strange then to find practice so much differing, as whilst some will get all their plants into frames, others will stack them in clamps on their sides, and others, as in this case, leave them exposed to frost, snow, and rain. However, it is held at Hackwood that it is a too common fault to allow Strawberry plants in the winter to become far too dry, and the roots suffer. The results from outdoor exposure seem to be here in any case first-rate.—A. D.

Apple Dr. Harvey.—In reply to Mr. Wythes, I may say that I do not know Waltham Abbey Seedling, but I am assured on good authority that Dr. Harvey differs from it in being much sweeter. The growth of Dr. Harvey is rather slender on old trees, but the leaves are of fair average size. One of its peculiarities is that, in common with Cornish Gilliflower, Blenheim Orange, and a few others, it bears many fruit-buds at the ends of the young growths, and the old spurs do not produce their buds very thickly, but there is generally enough for a good crop. Next year I hope to be able to compare wood, leaves, and fruit of both varieties.—J. C. TALLACK.

KITCHEN GARDEN.

FORCING POTATOES.

In many establishments forced Potatoes cannot be had too early, not that the quality can be considered so very good when secured very early, but they come in for a dish when the prefix early gives them the passport. Of course, anything like a regular or daily supply of very early Potatoes is seldom looked for, as if so, long lengths of heated pits would be needed. For producing these very earliest dishes I have now for some years relied exclusively upon those grown in pots. The pot culture of Potatoes is very simple, and they grow to a usable size if not earlier, at least quite as early as any planted out in heated pits, and the quality is generally better on account of their being enabled to be dried off at a time when this process is the most needed, *i.e.*, a week or so before being required for use. By also growing them in pots it sets the frames at liberty for later crops. If the sets are not far advanced, or at least not sufficiently so to need immediate planting, the best course is to start them in boxes. The sets should be laid in in a single layer on leaf soil, with a little of the same material sprinkled amongst them, and if kept fairly moist and also placed in a warm structure, the sets will not be long in making a strong and sturdy growth. For early pot work 9-inch or 10-inch pots are quite large enough. Free drainage is very essential, for if this should become at all choked the haulm will turn yellow and collapse before the tubers have barely formed. The soil also must be fairly rich, light, and open. I use three parts light loam, one part leaf soil, and some old Mushroom bed material with a little charcoal. When ready for the tubers the pots are taken to the structure it is intended to grow them in and there prepared. The pots are about half filled with soil, placing two sets in each pot, covering them with 2 inches of soil, which will allow room for a little top-dressing later on. If the soil is in a fit state, no water will be needed until the tops are through the soil, and then only but very little. During the early stages it is much better

to allow the soil to become fairly dry before giving water. The main essential for a free, healthy growth is keeping them well exposed to the light, with neither too high a temperature nor too moist. Ours are placed in the Peach houses or vineries which are being started, and where they remain until they become too warm or shaded, when they are shifted into another. Later on, as the haulm grows, it will be necessary to place two or three small sticks around the sides of the pot and tie with matting.

The best variety I have tried for pot work is Sharpe's Victor. Mona's Pride, when it can be had true, is also good, the quality of this being preferred by many. Sharpe's Victor, however, on account of its short top and early tuber-forming, is a reliable kind. Beds formed with fermenting material are liable to lose heat very quickly during cold weather, that is unless the temperature is well maintained with linings. The low brick frames or pits heated with a flow and return pipe are the best. Not that fermenting litter or leaves should be dispensed with in these cases, as a body of quite 18 inches or even 2 feet should be packed into the frame in order to cause a genial heat. Ten inches or a foot of light and fairly rich soil should also be provided for the Potatoes. Drills 4 inches in depth should be struck out a foot or 15 inches apart, in which place the tubers 6 inches asunder. In the meantime between the rows of Potatoes a few rows of Radishes may be sown, or rows of Lettuce planted. Early Paris Market may be set out 6 inches apart, when the plants would grow and be fit for use before being smothered up with the tops of the Potatoes. A little ventilation more or less, according to the weather, is very essential to ensure a sturdy and healthy growth. Planted-out Potatoes may easily be kept too wet, and there is also the danger of keeping them too long without water. The soil must be kept fairly moist, and this anyone can easily gauge by grasping a handful of soil just beneath the surface. I have seen people keep the soil so dry, that upon a spell of bright weather occurring in March the tops have collapsed when the tubers should have been swelling off.

In the majority of instances, however, the forcing of Potatoes has to be carried out by the aid of hotbeds. In my own case I have plenty of deep brick frames for vegetable forcing, and by filling these with fermenting material, there is not the likelihood of the heat being so quickly blown out during cold and windy weather. A. Y. A.

SOWING PEAS IN POTS.

At this season there are various means adopted to secure a few dishes of Peas in advance of those sown in the open ground early in the year. I am fully alive to the fact that Peas sown outside at the end of November or early in December will give a few early dishes, but on heavy land it does not pay. A sheltered border is also necessary, and there is continued warring against mice and birds before a crop can be secured. I am aware that sowing in pots causes a certain amount of work, but it gives a fair return, and a good dish of Peas is always appreciated. I do not like sowing Peas in pots in strong heat a month or six weeks before they are wanted to plant out; I believe this to be the cause of many failures. In the case of Peas sowing may take place towards the end of December—that is, if the plants can be given a warm border in March. I usually sow from the 18th to the 30th in cold frames, using 5-inch pots and not sowing too thickly, also using good loamy soil not too light, as if at all light and porous the roots do not take such a firm hold. Some fine or lighter soil may be used for covering the seed. If the soil

is damp, one good watering with tepid water at the time of sowing will often be sufficient till the seed has germinated. It may be objected to that early sowing causes weakness by the seed being so long in the pots before planting out. Such is not the case, but the reverse, as the growth is slow at the start, and therefore when the seed has germinated, the Peas are as good as those sown in the open in March and above ground in April, and being raised without heat there is no fear of collapse, provided due attention is paid to moisture and keeping as near the glass as possible, and giving free ventilation by removal of lights in favourable weather. It will also be observed I recommend larger pots than is usually employed, thus allowing more root space, also good loam in place of leaf-mould, this adding to the strength of the roots and tops. Early Peas raised in this way suffer little injury if planted at the time named. Cold east winds are more harmful, but these may be minimised by placing branches with the foliage on to break the wind, also by drawing up the soil against the plants and well firming the ground when turning out of the pots. The variety to be sown is also important. I do not think it necessary to sow the small round white Peas in pots, as though a few days earlier they give a poor return. Of course if earliness is the important point, they are valuable, and even when this is not essential, a few rows planted out as advised will give a dish or two in advance of the wrinkled kinds. For general cropping, Chelsea Gem is in advance of other kinds, and when sown in pots can be had fit for table the first week in June. I would also advise a trial of the larger Peas, such as Duke of Albany. They do equally well, and though termed second early, are but a few days behind the earliest. Last year I sowed a fair portion of the Duke, and got a fine lot of pods ready for use on June 10. When sown for early work they are much dwarfier, not more than 3 feet; indeed I topped some at 2½ feet, and when grown thus there is little trouble with stakes. The pods being fine are much valued so early in the year.

G. WYTHES.

A NOTE ON BEETROOT.

THE trial of Beet at Chiswick should prove of service in reducing the number of so-called distinct varieties in cultivation, and the confusion that these create in the minds of those who are undecided as to what to order each time the seed list is made out. No less than sixty presumably distinct forms were shown at the last meeting of the R.H.S., but in the notice of the meeting given on page 550 of THE GARDEN it was stated that many were synonymous with well-known varieties. For this trial to be of any real value it ought to be announced soon which are the best varieties or types, a list of synonyms being given, though it is very doubtful if this will have the effect of preventing the majority of local seedsmen and some who have a wider clientele from attaching their own prefixes to the best varieties in general cultivation. In many instances they are not content with claiming the variety as their own improved strain, but they go further than this and charge rather dearly for their pains in the matter. All things considered, Dell's Crimson is the best Beet in cultivation, and as a consequence the synonyms are particularly numerous. The former may be purchased say at the rate of 1s. per oz., but when the seedsman honours (?) it with his own particular patronymic, then the price goes up another 6d. Unless I am greatly mistaken the rage for novelties in the way of vegetables is less pronounced than formerly, and the time may not be far distant when the well-tried old forms will be most preferred, the glowingly described and presumably new and distinct forms being taken little heed of. My advice to those who have found a variety of

Beet that succeeds well on their particular soil, the roots being of medium size, well formed, richly coloured, tender and sweet when cooked, is to grow no other. On our rather strong soil Crimson Ball, a good form of the Turnip-rooted, is the best for early use, but by far the most space is devoted to Dell's Crimson. The latter may be sown early in April without much risk being run of the roots becoming coarse, though I find the end of the month or even early in May answers better. In the case of Pragnell's Exhibition, early sowing would result in the growth of roots more resembling Mangold than Beet, and in most seasons the roots are too large even when late sowing is resorted to. Exhibitors now-a-days favour large roots, and while this rule holds good, Pragnell's variety will be most shown. Cheltenham Green-top and Omega also grew too large each time they were tried here, but all three might yet give satisfaction in other gardens. Crimson Ball would be the best for shallow ground resting on gravelly, hot subsoils. I could, if so disposed, give a fairly long list of what I consider synonyms of the best types, but am of opinion that this should come from "headquarters" or where there is the least likelihood of mistakes being made.

I. M. H.

Midland Counties Pansy Society.—I have read your strictures on the action of Mr. Wm. Sydenham in reference to the circular sent out with the schedule of the Midland Counties Pansy Society, and I think it is only fair to him to make you acquainted with the reasons for his having done so. The work of getting in subscriptions fell upon me as the hon. sec., but I found much difficulty in getting together the necessary funds for prizes and expenses of our annual exhibition, and with advancing years and broken health, I determined that I would not again incur the anxiety. To prevent the collapse of the society, or at all events hinder its operations being carried on on a greatly reduced scale, Mr. Wm. Sydenham and some of his Tamworth friends offered to take the society in hand if the next exhibition could be held at Tamworth, and that he and his friends would raise the necessary funds by application to friends and customers interested in the culture of the Pansy. As the cultivation of the Pansy is greatly on the increase in the midlands, chiefly through the influence of our society, the offer was gladly accepted, and I agreed to continue the secretarial work. It is far from being an easy matter to raise the necessary funds, and although the circular is not a judiciously worded one, I must say in all sincerity that selfishness is not at all a characteristic of Mr. Wm. Sydenham. On the contrary, he has with his relations generously contributed to the fund.—WM. DEAN.

The Gardeners' Orphan Fund.—The monthly meeting of the committee was held at the Horticultural Club, Hotel Windsor, on Friday, the 29th ult., Mr. Herbst presiding in the unavoidable absence of the chairman, Mr. W. Marshall. Some special subscriptions and donations were announced by the secretary, among them: from the Reigate Chrysanthemum Society, per Mr. J. Brown, secretary, £20; the Rugby Chrysanthemum Society, per Mr. W. Bryant, secretary, £9 2s. 6d.; receipts from the sale of flowers at a table in the recent Chrysanthemum exhibition at Edinburgh, £20; the Midland and Birmingham Carnation and Picotee Society, per Mr. R. Sydenham, £5; Mr. Harvey, The Gardens, Stanton-in-Peak, Bakewell, per Mr. Bolas, £2 10s. From boxes the following: Mr. H. Herbst, £3 10s.; Mr. G. W. Cummings, The Grange Gardens, Carshalton, £2 6s.; Mr. William Marshall, Bickley, £1 7s. 3d.; Mr. C. Gibson, Morden Park Gardens, 18s.; Mr. A. Waters, The Gardens, Hopwood Hall, Middleton, 15s.; Mr. R. Scott, Bradford, 5s.; and Mr. A. Read, The Gardens, Grittleton, Chippenham, 5s.; making a total of £65 19s. The secretary reported that six applications had been received from candidates at the

next election, and adding to this number the nine candidates who failed to secure election last year, there would be fifteen candidates from which to elect eight recipients. The rules of the fund set forth that in the event of one of the unsuccessful candidates dying the votes received for that child at the last election may be given to another child of the same family. The annual general meeting and election of children were fixed for Friday, February 3, to take place as usual at the Cannon Street Hotel, and the committee will meet on the 20th inst. to make the necessary arrangements. Various cheques were drawn, including one for £159 5s., the allowance to children for the first quarter in the new year.

The Alexandra Palace and Park.—At the meeting of the Hornsey Local Board held on Monday night, January 1, Mr. H. R. Williams, the chairman of the board and joint author with Mr. Littler, Q.C., of the scheme now before the public for the purchase of the Alexandra Palace and Park as a place of recreation for the public, moved a resolution stating that the alienation of the Alexandra Park and Palace for building purposes would be a lasting and irreparable injury to the northern suburbs as well as to the metropolis generally, and cordially approving of the efforts now being made for the preservation of the park and palace as an open space, and expressing the willingness of the board to contribute the sum of £25,000 towards the purchase, provided that the remainder of the purchase-money be raised and that the whole of the property, comprising (with the site of the palace) 430 acres of land or thereabouts, be secured and dedicated to the service of the public. Mr. H. R. Williams, in moving the resolution, expressed his belief that upon reflection and with further information the London County Council would agree to contribute towards the purchase, and he was sure the Middlesex County Council would liberally do so. In referring to the proposed purchase price (£275,000), he said that he always had considered that the cost would be about £250,000. The repayment of the necessary loan would be spread over sixty years, the charge being equal to about three farthings in the pound. The resolution was carried unanimously.

Chrysanthemums for market.—Being about to start with a fresh collection of Chrysanthemums, would some of your readers kindly give me the names of the best sorts, early and late, for cut flower purposes, such as find most ready sale at Covent Garden, and are most in favour in private establishments for the above purpose and for conservatory decoration, not for exhibition?—A. E.

The longest Cucumber.—Will you kindly oblige me by letting me know the length of the largest Cucumber grown? A friend of mine was telling me that he saw one once as long as 6 feet 2 inches, and out of curiosity I want to know whether this is the case.—W. A. P.

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No. 1104. SATURDAY, January 14, 1893. Vol. XLIII.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—Shakespeare.

ROSE GARDEN.

HARDY AND DELICATE TEA ROSES.

I TRUST that those who agree with me in regard to the advantage of protecting their Tea Roses have taken time by the forelock and protected their plants. The thermometer has marked 19° of frost on several nights recently at 6 feet from the ground, and this is only the 1st of January! We may yet have a repetition of the zero markings which occurred in recent years in this district and in other parts of England. I propose in this article to enumerate some thirty Tea Roses and take them as a basis for my subsequent remarks on their relative frost-resisting powers, and I may as well take this opportunity of saying in reply to "A. H." and others that I never give an opinion of, or mention cultural matters in relation to any Rose that I have not grown and attended to myself at some time or other, although (as in the case of *Devoniensis*) I may not at the present time have every one of the varieties named amongst my Roses, but I have other Tea Roses (new ones, &c.) which I have not mentioned specifically in this article. I do not place the Roses exactly in the order I esteem them but I may say that I do so approximately. Unfortunately, I find some varieties very difficult to grow successfully, having a small garden and not possessing a south wall, and I think that Roses like *Maréchal Niel*, *Jean Ducher* and *Devoniensis* require specially warm and sheltered positions to succeed well with them and get blooms of the high form requisite for exhibition amongst such growers as everyone has now-a-days to compete with at our National Rose Society's meetings and also at all other meetings of well-managed Rose societies. I have grown amongst others the following thirty Tea Roses, first-rate for exhibition and other purposes, viz. :—

Maréchal Niel, *Comtesse de Nadaillac*, *Innocente Pirola*, *Catherine Mermet*, *Mme. Hoste*, *Souvenir d'Elise*, *Cleopatra*, *Hon. Edith Gifford*, *Mme. de Watteville*, *Mme. Cusin*, *The Bride*, *Princess of Wales*, *Anna Ollivier*, *Ernest Metz*, *Marie van Houtte*, *Ethel Brownlow*, *Souvenir de S. A. Prince*, *Mme. Lambard*, *Jean Ducher*, *Caroline Kuster*, *Francisca Kruger*, *Rubens*, *Mme. Bravy*, *Souvenir de Paul Neyron*, *Souvenir d'un Ami*, *Etoile de Lyon*, *Mrs. James Wilson*, *Mme. Willermoz*, *Bouquet d'Or*, and *Devoniensis*.

In the above-mentioned thirty varieties I do not think any kind is extremely delicate except *Devoniensis* and *Etoile de Lyon*; next to them I would place *Maréchal Niel*; *Cleopatra* is also not robust, and *Ernest Metz* I am still doubtful about. But I ascribe my losses in the case of the last two varieties to the fact that, in being new Roses, they may not as yet be fairly established in constitution, and in a few years they may do as well as others at present considered quite robust.

I have not found *Comtesse de Nadaillac* to be very delicate, but it is a very poor grower, not making much progress with most people, although with some rosarians—Mr. Burnside and, I believe, Mr. Girdlestone, for special instances—this Rose grows uncommonly well. I have seen Mr. Burnside's garden and plants, but with him all Teas seem to grow as well and

freely as we should all wish to have them. The Tea Roses are, in my opinion, different to the Hybrid Perpetuals in regard to the value of their early growth, it being of very decided advantage to get good strong early wood with the Teas. But you cannot force them so to grow; it must come naturally, and in Mr. Burnside's garden the soil seems specially adapted for such growth in Tea Roses. The position of his house and garden is somewhat bleak, so that he is entitled to some compensating advantages. Many people think that *Innocente Pirola* is a delicate Rose, but I have never found it so, and the same fact applies to *Mme. Cusin* and *Mme. de Watteville*; perhaps the latter is, however, unable to stand a very extreme low reading of the thermometer.

It would be difficult—in fact, at present impossible—to tell at what temperature the Tea Rose collapses, but with the careful observations which of late years rosarians have been taking of such matters, I have no doubt that before long this question will be solved, and we shall then know with certainty what we may look forward to after a severe winter has passed. There is no doubt that the *Dijon* Roses are the most robust of the Tea varieties, but they are not of much value to those of us who are exhibitors. The Tea Roses which vie with *Gloire de Dijon*, *Mme. Berard*, and *Bouquet d'Or* in the power of resisting extreme cold are *Marie van Houtte* and *Mme. Lambard*. Unfortunately, these Teas, although most beautiful at their best or when good, are seldom of first-rate form, their centres, as every exhibitor of Teas well knows, becoming confused as the Rose develops, and what promises in the bud to be a most splendid specimen becomes useless when fully expanded.

Edith Gifford and *Anna Ollivier* I find to be robust and good growers, but *Catherine Mermet* is more delicate, and so is *Mme. Bravy*. *Niphetos* is a Rose I have discarded long ago, as it is delicate, a poor grower, and cannot stand a severe winter out of doors, besides which disadvantages it cannot compete with success against such Roses as *Innocente Pirola*, *Souvenir de S. A. Prince*, or *Edith Gifford* amongst the white and cream-coloured varieties.

The *Bride* is said to be a bad Rose for severe weather. I have not found this to be the case so far, but with me the plants do not grow very robustly, and, as in the case of *Ethel Brownlow*, I have never as yet cut an exhibition bloom that I considered of the highest class, although I hope this year to be more successful. With some rosarians the *Bride* is the easiest and most successful Tea Rose grown. I have seen splendid specimens, notably one in 1891 shown by Mr. Page-Roberts at Reigate Rose show. Although I always protect carefully, yet in the winter of 1890-91 I lost nearly 100 Tea Roses. Last winter I was more fortunate, and I think the mortality was limited to some two dozen plants. I hope the fates may be again propitious, and that the present winter may not be a disastrous one.

C. J. GRAHAME.

Croydon.

Rose Duchess of Edinburgh.—This Rose never attained a very high degree of popularity, the reason for which is perhaps not far to seek. It was a mistake no doubt to class it amongst the Teas, as it has neither the fragrance of a Tea Rose nor the character of its growth. It would be more correct to describe it as a vigorous growing China. I am not, however, much concerned about its rightful place in the list of Roses. I rather wish to direct attention to its merits as a wall Rose where the position is fairly well sheltered, as we have none too many red Roses suitable for covering warm walls. When the plants get established

they will make shoots 6 feet long in one season. It would be better perhaps if the growth were less stiff, but this fault may be got over by putting in an increased number of plants where there is much space to fill up. The colour may be described as a rosy crimson, and the flowers are produced on long stiff stems which hold them erect. It is for this reason that I prefer the *Duchess of Edinburgh* to *Reine Marie Henriette*, as the blossoms of the latter hang down their heads in a very disappointing manner.—J. C. CLARKE.

MARECHAL NIEL ROSE.

THE behaviour of this Rose in the open air perplexes me as much as under glass. I have had several plants under observation about ten years, and only one of them has made a respectable growth. This one has made four or five shoots varying in length from 12 feet to 20 feet. This growth it made during the first three years after it was planted. Strange to say, it did not flower until the third year. Since then it has bloomed regularly, but the leading branches have not extended each year more than 1 foot or 18 inches, and the side growths to about the same length. Two other plants which are now about fifteen years old, and which occupy a wall on the south front of a house in a very bleak situation, have not reached a height of more than 9 feet. They make a little growth every year, and flower fairly well, and they look as well now as at any time since I have known them, but they show that they have a struggle to exist. What puzzles me most is that there is not the least sign of canker either above or below the ground in any part of the stem or branches, yet I have invariably found that plants in a similar condition under glass would show unmistakable indications of canker; as a matter of fact I have not met with a cankered plant in the open air. With regard to younger plants, their behaviour is satisfactory in the open air sometimes. The largest flower of this Rose I ever saw was on a plant that had been two years planted on the south front of a villa, the colour being a rich deep golden-yellow seldom met with in this Rose under glass. I do not know if any reader of *THE GARDEN* has adopted the cutting-down plan with this Rose in the open air after the first lot of flowers is over. If so, it would be interesting to hear the result. It has been tried by a friend of mine on a plant that had made two shoots about 5 feet long. The second year after planting, as soon as the flowers had faded, the shoots were cut down to within 1 foot of the stem or old wood, but the result, as I anticipated, was not satisfactory. Fresh growth was made by the cut-back shoots, but it was so late in the summer before the plant could be cut down, that there was only time enough for it to make growth about 2 feet long before the cold weather set in and checked its further progress. The behaviour of this Rose under glass is pretty generally understood. I refer to it now for the purpose of saying that in the year 1887 I placed four plants in the inside border of a span-roofed greenhouse. Two of them were on their own roots obtained from cuttings taken from an exceedingly vigorous plant. One of the others was budded on the seedling *Brier* stock, and the other on the *Manetti*. Both of the last-mentioned plants are already attacked with canker. One of the own-root plants has made excellent growth from the first, with no signs of canker at the present time. The other plant which is on its own roots has not made any growth more than 5 feet long, although quite free from canker. This experience appears to point to the fact that own-root plants are not so subject to canker as those on any other stock. I should like to record what I believe to be a departure in furnishing a house with the growth of this Rose without resorting to putting in fresh plants. Anticipating two years ago that my plants would ultimately succumb to an attack of canker, I brought a long shoot down from the roof on to the border, and buried a portion of it in the soil about 4 inches deep. In three or four months the part buried in the soil

had sent out roots, and at the present time they are sufficiently numerous to sustain the growth which it has since made, and which is very much stronger than other parts of the plant. Last spring when I cut down the growth of the other plants I cut back the layered shoot as well. Since then it has made four vigorous shoots, some of them more than 20 feet long, so that it is evident, from the condition of the growth on the other part of the same plant, that the layered shoot derives the greater part of its support from its own roots, and that it is capable of a separate existence if it were severed from the old plant. J. C. CLARKE.

OWN-ROOT ROSES IN QUANTITY.

PROBABLY one of the most primitive methods of obtaining these was the best. Just before the fall of the major portion of the leaves, viz., towards the middle or end of October, take off and insert the cuttings. It was a moot point at one time whether these two operations should proceed abreast. Some contended that they should, others that Rose cuttings rooted best with a rest between the removal of the cuttings from the parent plants and their insertion in their new rooting quarters. A slight wetting, they contended, favoured surer and speedier rooting. The reason for this contention could never be said to have been made plain, and the practice of securing this interregnum between the making and rooting of Rose or other cutting, has fallen into disuse. In practice, however, it mostly occurs, and is at times of considerable duration. For example, in not a few gardens of late, owing to the long-continued frost, many Rose or other cuttings have probably been made as a matter of convenience and to forward work as much as possible when the thaw comes, and unless the cuttings are left too long out of the ground or allowed to become too dry, they seem little or none the worse for the delay.

There are few more simple and surer methods of rooting Rose cuttings in quantity than their insertion in October or November. At that season it is hardly an exaggeration to affirm that every fairly ripened Rose shoot with two buds may be converted into a good Rose bush. Some enthusiasts would dispense with the second eye and say every Rose bud is already a rudimentary plant. But with the coldness and uncertainty of our climate, and the little heat of the earth from October to April, I would not counsel the budding our Roses in the soil during these cold months. For greater safety, as well as multiplying our chances of success as far as may be without undue waste of the raw material of our future Roses, it is desirable to multiply the number of buds on our Rose cuttings to six or more instead of reducing them to two or one. This would leave two or more good buds under and as many above ground. The base buds should be looked to to give us our normal roots. Any other buried buds, looked upon as reserve forces, may be left intact until we see how the base buds have rooted. There is no evil, but, may be, great good as well as perfect safety in this course, as each sucker on own-root Roses is also a Rose of equal value to any other portion. Any of the latest developed suckers of to-day may prove the head and crown of the Rose to-morrow. Cuttings of Tea or other Roses from 6 inches to 9 inches long are very handy for rooting freely and furnishing beds and borders afterwards. There may be modes of rooting such under various methods of sheltering and warmth, but few yield better results than the first and the simplest of them all.

Trim the cuttings straight across under a bud with a clean cut, and either leave the bud intact or rub or cut it off. It is really of little moment. Either way the cutting, if firmly inserted in sandy soil to a depth of 3 inches or more, will probably grow. Should the base buds be removed, roots will be formed under or around it, and a Rose bush in embryo be the first product. Should the base bud be left intact, roots and a strong root bud will probably be produced simultaneously. And should the latter grow very vigorously, as it mostly does, so soon as the cutting is well rooted, the shortest cut towards a strong Rose bush in the least time often lies in cutting away the whole head of the cutting, with the exception of the one root sucker. The cuttings can hardly be inserted too firmly. In rows from 15 inches to 18 inches apart, and 3 inches to 6 inches between the cuttings are convenient distances. Light sandy soil with a liberal dash of leaf-mould is perhaps the most favourable to the free rooting of Rose cuttings. After insertion and treading home, a mulch of at least 2 inches of cocoa fibre refuse is the best protection against frost. Tea Rose cuttings in addition should have a screen of litter or Fern fronds as high as their tops. D. T. FISH.

NATIONAL ROSE SOCIETY.

NORTHERN AND SOUTHERN EXHIBITORS.

I HAVE carefully read Mr. Machin's article (p. 1) in your issue of the 7th inst. I cannot say it has altered any opinions which I held when writing the article which appeared in your issue of December 10.

I must premise my remarks by saying that Mr. Machin is incorrect in stating that the northern growers and members represent 30 per cent. of the National Rose Society's roll of subscribers; they stand at about or under 20 per cent. I took the number carefully from the list for 1892, which gave the names of some 500 members, and those of the northern subscribers came to about 90; the western subscribers, including such celebrated names as Cooling, Budd, Hill-Gray, Burnside, and Baker (of Exeter), came to about 50 members, and the southerners to some 370. The subscribers to the society now figure up to over 530, and a good many names are not on our printed roll for 1892; about twelve of these new members I know to be southerners, and I should say the figures of the members are now approximately:—

Southern	400	say 75 per cent.
Northern	90	16 "
Western	50	9 "
About	540	

the percentage being very different to Mr. Machin's expectations.

I do not quite follow Mr. Machin's reasoning in speaking of his difficulties in Rose culture for exhibition when he says, "I have only budded a few of the early varieties (plenty of each), because I find the later varieties do not come into bloom on maidens till nearly all the chief shows are over." If by early varieties Mr. Machin means those which come into flower earliest of all (such as Viscountess Folkestone, Margaret Dickson, Rubens, Edith Gifford, and others), then I should have thought it would be an advantage and assistance to him to bud very many of such varieties in order to show in the 48 class at the Crystal Palace on the 1st (not the 2nd) July this year.

Mr. Machin should not, in discussing the facilities and advantages offered to exhibitors by the National Rose Society, omit to mention the Rose meeting held in the north, which this year, in deference I believe to his wishes and invitation, is to be held in his own district and town of Work-sop. The northern or provincial meeting in 1893 will be held on July 13. I cannot tell whether Mr. Machin was consulted about the date, but I think it is more than probable he was; consequently the date must have been considered to suit the sur-

rounding Rose districts. If it be too early for northern growers, I should say it is not now too late to get the date altered to the following week. We who have Rose gardens or grow Roses in the south would not dream of giving an opinion on the proper date for the provincial show which is specially intended for our northern members, and as we of the south seldom can exhibit in good form after the first week in July, few of us ever attempt it. I cannot understand why the northern growers are blind to the fact that it is quite possible (we know it is a matter of certainty) that the Rose grower who exhibits from southern gardens (especially those who grow on light soil) cannot show to advantage after the early days of July. A writer in one of your contemporaries recently stated that he, a grower of Roses in Essex on heavy land, could not understand the ephemeral Rose season of other southern growers; that he was able from heavy land to show and gain first prizes on June 20, to continue to exhibit till and including the month of August, finishing up then with four first prizes! Yet this gentleman, who is in agreement with Mr. Machin and shows by his own lasting power as an exhibitor that dates are of no real importance to him, wishes to deprive the majority of our society of the metropolitan date which best suits them.

Some months ago I analysed from the official return the results of the winning exhibits at the Crystal Palace in 1892, and found that the following counties were represented as winners on the 2nd of July: Berkshire, Essex, Hereford, Herts, Kent, Middlesex, Norfolk, Nottingham, Northampton, Oxford, Somerset, Suffolk, Surrey, Sussex, Wiltshire and Worcestershire, in all sixteen counties. It will be noted that Hampshire, Devonshire, Cornwall and Dorset are not mentioned. These, being the most southern counties, were in all probability then (on the 2nd of July) over their best Rose period and unable to exhibit. Twenty counties are thus accounted for. All that remained, then, were ten counties, and I have no doubt that some of these were represented by exhibitors, who, however, were not prize-winners. Surely prize-winning exhibitors from sixteen counties in England, the four most southerly being unrepresented, must be said to be a National representation of Rose growing!

I cannot see that the N.R.S. northern members have any fair ground for complaint against our executive, as—

(1) They are in a very decided minority, and the southern members are undoubtedly entitled to a date which suits them.

(2) The northerners have a provincial show specially arranged for them, and with good prizes given to them by the N.R.S.

(3) The northern members have done nothing for our society which entitles them to more consideration than the metropolitan members.

(4) They have shown no reason whatever that they should have two Rose exhibitions at dates to suit them alone, to the destruction or even possibility of damage to the southern growers' chances of exhibiting in their proper form.

Croydon.

CHAS. J. GRAHAME.

The small-leaved Mock Orange (*Philadelphus microphyllus*) we noted in several gardens last year, and as this is the planting season, we refer to it again as a shrub that should be planted with moderate freedom, being less unruly in growth than the other kinds. It is very dwarf, and a good way is to plant it on the outskirts of the lawn, its flower-laden branches touching the turf and scenting the air for many yards around. The leaves are not unlike those of the Myrtle, but smaller, and are a delightful set-off to the white flowers. It is an introduction from Mexico and is fairly hardy, but not so in the more northern districts of England; at least, we have had complaints that it is too tender for complete exposure. But in all more southern districts it is quite at home, and must be kept from those things that are of stronger growth. Such a sweet little shrub quickly becomes over-shadowed by more robust neighbours, and it would have a sorry time in a garden shrubbery.

ORCHARD AND FRUIT GARDEN.

PEAR MARIE LOUISE.

THERE are few, if any, better-known Pears than Marie Louise, and certainly none more generally popular. Raised in 1809 by the Abbé Duquesne and named after the consort of Napoleon, it reached this country in a comparatively short space of time, or, according to our authorities, in 1816. From the first it was found to succeed well as a standard, and its merits soon became widely recognised, as the

and most profitably clothes a high wall that forms one of the sides to a structure supporting a large reservoir. The locality is by no means favourable to hardy fruit culture, being on a dead level with the river Derwent, and frequently flooded accordingly. As far as my experience goes, this excellent Pear does not require a very warm site, some of the best cropping trees I have had anything to do with being against a wall facing due north. In the gardens here there are trees trained against walls with south-east, south-west and north-east aspects, and although all are in good health and as productive as those of most other varieties, it

On poor soils the growth is scarcely vigorous enough, a fairly strong loam best suiting the variety. Unless this can be given, the trees are apt to become stunted and flower far too freely to be productive, there being such a thing as having too much blossom. Last season the trees generally flowered most abundantly, but the flowers being stronger than usual there were fewer failures to set owing to any inherent weakness, though severe frosts worked sad havoc among the trees. In the case of the tree figured there are no apparent signs of want of vigour, yet the blossom was most abundantly produced, the tree when photographed presenting a most beautiful sight, and that, too, in spite of the comparative smallness of the flowers of this variety. When trees are in the happy condition shown in the engraving, something is necessary in most cases to be done towards sustaining their vigour. Where good loam is available, it pays well to add one half hundred-weight of half-inch bones to every heaped up cartload of it, and to place this in a trench well within reach of the roots. Especially are such additions to the border necessary where it is desirable that the trees should continue to grow strongly without their productiveness being impaired. The next best thing is to bare the surface roots, returning the soil on to the top of a good dressing of solid manure. There are various other manurial dressings that might be substituted, but I have most faith in manure obtained from mixed farmyards. Not unfrequently the best flavoured fruit, if somewhat scrubby in appearance compared with that obtained from wall trees, is obtained from pyramids, standards, and espalier-trained trees, but this would be less often the case if the former were kept better attended to at the roots. Marie Louise keeps better than most varieties after it is ripe, the natural season extending from the middle of October to the second or third week in November. This can be improved upon or lengthened considerably by gathering the fruit at different or say at fortnightly intervals, ripening that first picked in heat, and keeping some on the trees as long as they will hang. Marie Louise d'Uccle is quite distinct from the variety under notice, and though more productive is inferior in point of quality. W. IGGULDEN.



Marie Louise Pear tree in bloom.

many fine trees to be seen forty years ago bore witness to this. It is one of the least fastidious varieties as to climate, and may be found and is recommended to be grown in the more northern districts, as well as in the midlands and the presumably more favoured southern counties. Wall trees, however, are most often met with, and under liberal treatment remarkably fine ones can be had, Marie Louise thriving particularly well and cropping very heavily and consistently when allowed plenty of head room. If corroboration of the latter assertion is needed, one has only to pay a visit to the gardens at Elvaston Castle, near Derby, to see the grand tree of Marie Louise that so effectually

is from the coldest site I most frequently gather the best crops. From the cooler aspects the fruit is also of good size, clear-skinned and very superior in point of quality. Those, therefore, who are in doubt as to what to plant either against cold walls and also any of great height, say up to 20 feet high, ought not to hesitate about giving Pear Marie Louise a place.

So good a variety ought also to be included in quite limited collections of either bush, pyramid, or standard trees. It is the freely or naturally grown pyramids and standards that give the best results, and I need hardly add that the latter should be on the Pear stock.

The Blenheim Apple.—This seems to take on a finer colour in Berkshire than in Kent. Some handsome specimens have been sent us by Mr. Hewett, of Shiplake Court Farm, which surprised us by their beauty of colour and fine quality. It is certainly a remarkable Apple for the autumn. Nothing comes quite so good from abroad for cooking in its season, and it is also a first-rate eating Apple when fresh. Our ways of keeping fruit, however, do not suit it, and it would be interesting to find out whether we could not keep the Blenheim longer fresh by putting it in cool, dark cellars, where the temperature is always very low and never varied, and the fruit not looked at and turned over in the old way, but simply packed in barrels and boxes from the trees, and left in the dark and cold till wanted.

The Pear tree psylla.—Bulletin 44 of the Cornell University Experiment Station is devoted to the Pear tree psylla, which suddenly appeared early in 1891 in many widely separated portions of New York and the neighbouring States, and destroyed thousands of dollars' worth of fruit and many valuable trees. It was not a new pest here, having been imported probably as long ago as 1832 from Europe. No doubt it has been slowly increasing in numbers until, under favourable opportunities, it all at once worked immense damage. This year the insect did little injury in the orchards which it devastated last year, but it

is an enemy against whose attacks Pear growers must ever be on the alert. They should examine their orchards just when the leaves are expanding, and if the nymphs are numerous, the trees should be sprayed at once with the kerosene emulsion. A second and third spraying will be profitable if the attack is serious, especially if but little rain falls to wash off the honeydew. The destruction of the nymphs is practicable during a period of about two weeks in the middle of May, and a thorough spraying then will so discourage them, that little attention will be needed later in the season. Most of the damage is done before the middle of June, but spraying after this date will decrease the number of insects from which the hibernating forms are produced, and the orchard may be saved from a severe attack the following year.

Pear Marie Louise d'Uccle.—I cannot agree with J. C. Clarke's remarks on p. 546 regarding this Pear. It is a very fine-looking Pear, large, smooth, of beautiful colour, but quite worthless for dessert, and not one of the best for stewing, being too soft, therefore apt to boil to a pulp if not looked after sharply. —T. ARNOLD.

PEACHES FOR PROFIT.

It is quite evident that if the markets are likely to be glutted with Grapes, such at present is not the case as regards Peaches and Nectarines, as these command as good prices as ever they did. Peaches and Nectarines are quickly spoiled, so if they should not be in the best condition when sent off, either too ripe for safe carriage or not fit to keep for twelve or twenty-four hours after they reach the salesman's hands, they are best not sent at all. Peaches also show the ill effects of bad packing as soon as any fruit, and this, probably, is the reason why disappointment has been experienced by those people who may not have had such favourable returns as they expected. Of course gluts will occur with Peaches like other fruits, but I never yet had cause to complain of salesmen's returns during the months Peaches were in season, and if they were good they invariably fetched high prices. As far as I can learn, Peaches are not sent into the markets in such quantities as formerly, the reason probably being the disappointment experienced with the returns. Taking one season with another, I market about a hundred dozen both from under glass and from open walls.

The most profitable will be found in the earliest and the latest, extra early varieties realising fancy prices. Fine examples of midseason fruits will also fetch a good price. It must not be thought from the remarks above made that Peach growing can be taken up with a certainty of being made a paying investment. If carried out judiciously and on economic principles, and where the soil is naturally adapted for the requirements of the Peach, Peach growing will pay as well as any other class of fruit grown under glass. It would be an expensive proceeding for a grower for market to have to excavate and make expensive borders; therefore, caution is needed that any structures that it is contemplated to erect are on a suitable site. We often hear of the enormous crops of Grapes growers for market are enabled to secure, and this without the aid of expensive borders, but I never yet met with an instance where the soil was not naturally adapted for the Vines. It is just the same with the Peach; if this is to succeed well with a minimum of trouble at the start, the soil must be in good condition. I have good reason to be satisfied with the prices open-air Peaches realise, but for this purpose the grower would not have to rely upon early fruits, as at the time these became ripe there would be plenty of good midseason Peaches from under glass, and with which outside fruits could not compete. I have often surprised people with the prices I have secured for good open-air Peaches. Even last season good fruits of Dymond, Sea Eagle, and Walburton Admirable fetched from 10s. to 15s. per dozen. Crimson Galande and Bellegarde also sold well, the quality as well as colour being all that could be desired in a

market Peach. For a market Peach there must be both size and colour, poorly coloured fruit even of fair size failing to secure the best prices. In selecting the fruits I always find it pays best to well grade the fruit, even if there should be three sizes. The very finest will invariably secure a high price. Many men can grow Peaches to perfection, but they fail in putting them on the market in the best possible condition. Y. A. H.

PEAR DOYENNE DU COMICE.

TO THE EDITOR OF THE GARDEN.

SIR,—The Pear Doyenné du Comice is a valuable kind when grafted on the Quince, as then it is productive and bears "best Pears" abundantly enough, but when grafted on the Pear stock, as our dry soils require that it should be, it is too long to wait until it comes into bearing, and then the yield is too scanty. However, I have never repudiated this variety as worthless. On the contrary, have I not highly recommended it in my "Traité de culture fruitière et commerciale," in which I have mentioned instances of good crops having been gathered from it?

At the present time we have another variety named Doyenné du Comice Panaché, equal to the type in its fine habit of growth, and with fruit of the same size, but handsomer in colour, being of a rosy tint streaked with yellow and green. I need hardly add that its flavour is at least as fine and distinct as that of the type, as this is a constant feature in variegated varieties of fruit. At all events, the tree is more productive—a consideration which no one should lose sight of.

This season I am sending out a variety of Pear named Directeur Hardy, a very vigorous-growing and productive kind, bearing large-sized fruit of the same quality as the Doyenné du Comice. This variety, which was raised as a seedling from Louise Bonne d'Avranches, well deserves the attention of those who are planting fruit trees. —CHARLES BALTET, Troyes.

—I was rather surprised that the above splendid Pear should have been looked over by Mons. C. Baltet. If I were limited to two Pears it most certainly would be Doyenné du Comice and Marie Louise. I have mentioned two because to me the two mentioned are inseparable. If I were still further limited to one, then I should be puzzled, for granting that Marie Louise is the surer cropper of the two, then I certainly think the balance is brought up by Doyenné being the richer in flavour. Is it not remarkable that this excellent Pear is not grown more generally, for such is the case so far as this neighbourhood is concerned at least? It makes one of the finest pyramids, and, more than this, its fruit is generally smooth and free from fungus, which cannot be said of the majority of our choice Pears when grown as pyramids or bushes. Its fruits are larger and perhaps better coloured when grown against a south or west wall. The good old Williams' Bon Chrétien bears splendid crops of passable Pears on standards, pyramids, or bushes, but they are not to be compared with those from a tree on a west wall. "I." rather favours the Quince as a stock for the Doyenné, but although it is a good grower, it is by no means a rampant one. One thing should be borne in mind: it is a most profuse bud-former, and perhaps a judicious thinning of these might be done with advantage. All things considered, I think the Pear stock is the best for this Pear. —T. ARNOLD.

Plum Cos's Golden Drop.—Too much cannot be said of the fine late Plums commended by "Dorset," page 478, last vol. I quite agree with him that Cos's Golden Drop is the very best Plum, early or late, in existence, and marvel much that our hybridists have not made more use of it. This is the more marvellous, as this fine Plum is somewhere about a hundred years old, and we have little or no proof of its potency in the form or flavour of any modern Plum. This fine Plum and another (Coe's Late Red), also commended by "Dorset," were probably raised by Mr. Coe, of

Bury St. Edmunds, on a small piece of ground a few yards square. The Golden Drop was supposed to be a hybrid between the Egg Plum or Magnum Bonum and the Green Gage, as they grew side by side in Mr. Coe's garden. If so, it retains most of the size and colour of the White Magnum Bonum packed full of the most luscious flavour of the Green Gage. It is, as "Dorset" states, invaluable as a late dessert Plum in orchard houses. It is equally or more useful hung up by the stalk when ripe in a dry room. Being a clingstone, it bears this treatment admirably, and I have often preserved it thus till March or April. Dr. Lindley declared that he had eaten a year after gathering Golden Drop Plums that had been wrapped in tissue or soft paper and kept in a dry place.—D. T. F.

Peaches in New England.—After his address on orchard fruits, delivered before the Massachusetts State Board of Agriculture a fortnight ago, Mr. J. H. Hale, who is perhaps the most successful grower of Peaches in New England, replied to a number of questions from his auditors. The off-hand answers were quite as good as the address, and we add a few of them. Peaches should be fed with chemical fertilisers only. We apply every year all we can afford, that is, about 1200 lbs. of bones and from 400 to 800 lbs. of muriate of potash to the acre. Sulphate of potash gives the best colour to Peaches, but cotton hull ashes is perhaps a better form of potash. Yellow-fleshed Peaches have more tender fruit-buds than other kinds. We shorten in the new wood from one-third to one-half in the spring when the fruit-buds begin to swell. We can get a good Peach crop with 90 per cent. of the buds winter-killed. After the fruit is set for a full crop we thin until there are no two Peaches within from 4 inches to 6 inches of each other. This is a costly treatment, but it pays. The extras sell for six times as much per Peach as the seconds do, and they do not exhaust the tree as much. The finest fruit this year came from fourteen-year-old trees. An elevated plain is not as good for a Peach orchard as a hill-side with a sharp decline. The fruit should be fully mature, but not mellow, when it is picked.

Fruit keeping well.—I, like Mr. Groom, consider that Apples are keeping wonderfully well this season, in spite of the many complaints heard to the contrary. A great mistake is made in gathering the fruit too early. The weather here was sufficiently mild to admit of many sorts remaining on the trees unusually late, although a few degrees of frost do not impair the keeping quality of most sorts. Several varieties here, notably Cox's Orange Pippin, Alfriston and Mère de Ménage, were subjected to 6° of frost while hanging on the trees. The two latter are at the present time as plump as possible. These were not gathered until October 24. Waltham Abbey Seedling, Yorkshire Greening and Chatley's Kernel were allowed to hang on the trees after the leaves had fallen. Especially plump is the fruit of the first-named, considering that it is not a long keeper. In Apples, the same as in all other fruit, the worst matured and grown decay first, showing that they are not perfectly ripened. The premature decay of such fruit should emphasise more strongly the necessity of a better state of cultivation. Where the trees are of a size not too large for lifting, if there is a suspicion of the roots being too deep or in soil not congenial to their welfare, the best plan would be to replant them, bringing the roots nearer the surface. It is surprising what a change in the development of the fruit and the colour of the leaves quickly takes place where the roots are laid in different soil to that naturally employed, and which has not proved congenial to the welfare of the trees. Nothing is better for working a change quickly than decayed vegetable refuse, wood ashes, decayed leaves and refuse potting soil. Another point that ought not to be lost sight of is that of planting such trees on the surface and raising around them a slight mound, which in time gradually sinks down to the natural level.—E. M.

Jasminum nudiflorum has been the subject of several notes in THE GARDEN recently, and its

beauty when associated with Ivy pointed out. Before the present severe frost set in we saw in a suburban garden a wall of considerable length covered from base to the summit with the yellow flowers, making a sheet of colour—a charming winter picture. This Jasmine is very common, and, unfortunately, sometimes treated anyhow, but it pays for attention, as in the case above mentioned.

FERNS.

BLACK MAIDEN-HAIR SPLEENWORT.

(*ASPLENIUM ADIANTUM-NIGRUM*.)

I HAVE had several inquiries from readers of THE GARDEN asking what is the plant called "French Fern." The black Maiden-hair Spleenwort is the Fern which is sold under this name in Covent Garden Market. It is a beautiful and handsome plant. The fronds are triangularly elongate, and vary from about 3 inches to some 20 inches in length. The colour is rich deep green, and the stems and footstalks are black. The fronds are evergreen, so that in the winter season they are exquisite adornments for mixing with a few cut flowers in rooms, and being from the outside, they are capable of lasting a very long time in the cut state. I have noted how well this Fern does in the open-air fernery if planted in suitable soil, and I like to have a quantity of broken sandstone to mix with the loam and peat, to make the compost gritty, as in this mixture, if well drained, it succeeds best. In addition, I like to have some slabs of sandstone to put in the soil, for in no way does this Fern look better than when growing upon and over this. But, well as it does when planted out in this way, it does not thrive well treated to pot culture. This Fern is widely distributed throughout the three kingdoms, as well as in the Channel Islands. There are about a dozen well-established and named varieties, which are all beautiful; but the most distinct kind is the form known as *variegatum*, which is prettily streaked and blotched with white, and contrasts finely with the black stems and the dark green of its pinnae; but for good general effect, use the normal type for decorating rooms and apartments, which grows plentifully in parts of this country. J. J.

Hymenophyllum caudiculatum is a fine species, which by some is considered difficult to grow. Much of the brown and rusty appearance which the plant assumes, I fear, is the result of too much heat and over-dryness. The plant is a native of Chili and Brazil and likes a very moist atmosphere. The temperature may fall to 30° or even lower, provided there is a very humid atmosphere. During the hot weather the temperature should never be higher than 65°. Under these conditions the plant is the picture of health in Mr. Dorman's garden, and the fronds are bright and green, without any of the brown tips which are so frequently seen in this species. The fronds are from 1 foot to 15 inches long, three times divided, the segments not being so finely divided as in some kinds, and the ends of the pinnae lengthened out into tail-like points.—W. H. G.

Lomarias in winter.—*Lomaria gibba*, though one of the most useful Ferns for decoration during the summer months, is not often found to be of much service during the winter, as it soon suffers if exposed to the cold. Although one of the first to suffer from extreme cold, *Lomaria gibba* does not require a high temperature; in fact, it does better in an intermediate house. The great thing to be avoided is sudden change and to keep the fronds dry. Cold water dripping from the roof will be sure to discolour the fronds wherever it touches them. A cold draught will also have the same

effect. Usually the effect of cold on Ferns is not seen until after the temperature has again risen. Young seedlings of *Lomaria* may be grown on in heat, but after they are well established in 5-inch pots, they should be gradually hardened off, and by the time the plants are large enough for decoration, they will have fronds of good substance. Although I should not recommend *Lomarias* for decoration in winter, yet plants which have well matured fronds in the autumn will do good service if treated as cool greenhouse Ferns. It is keeping the plants in a growing state when they ought to be at rest which does so much mischief.—F. H.

***Pteris serrulata*.**—Of the numerous varieties of this Fern, there are none more useful or more elegant than the old form when it is well cared for and grown as it may be seen in some of our market nurseries. It has to some extent been neglected through the broader fronded varieties finding more favour, yet it will be long before it is superseded entirely. Undoubtedly it is prettier, with its long slender drooping pinnae, than the more erect-growing varieties, which have broad pinnae. To have this Fern in its best form, it should be grown on in a moderate temperature and fully exposed to the light. If not allowed to get stunted, it will make a fine plant before the fertile fronds ripen their spores. This is one important point, for after they begin to shed their spores the plants lose their bright fresh appearance, and when grown for cutting from this is of importance. If grown in a light open position, the fronds will last equally well if cut before the spore-cases begin to change colour, and they then have that light green shade which is more desirable than the more sombre hue of the matured fronds. Older plants may be kept tidy by cutting away most of the old fronds after a set of new ones has developed. After plants have been resting a little they throw up a good number of fronds at the same time, while young plants, or those kept continually active, produce them singly.—F. H.

Variegated Ferns.—"H. P." is correct in his surmise (p. 590) that the new varieties raised by Mr. May are related to *Pteris Victorizæ*. The varieties in question were all raised from one sowing of *P. Victorizæ*. How it should happen that several distinct forms should be raised is a problem, more especially as several plants of each variety appeared. At the time the variety *P. Reginæ* was named it had not fully developed fronds. It has now in its fully-developed state all the characteristics of *Pteris serrulata*, and *P. s. variegata* would be a more appropriate name. Besides the varieties which have been referred to, and for which first-class certificates have been awarded, there are several other intermediate forms; in fact, I have never seen so much variation in one batch of seedlings as in the one in question. I quite agree with "H. P." in respect to *P. Victorizæ* being a most desirable variegated Fern. The white marking is particularly clear and distinct, and though not so vigorous as some Ferns, it makes a very pretty plant, especially when grown on freely from spores without receiving a check. I now have a fine batch of this *Pteris*, which does not suggest that it is a delicate variety.—A. HEMSLEY, *Edmonton*.

Davallias.—The *Davallias* are very useful at any season of the year, but may be more particularly recommended for winter use. Many of the varieties have fronds of remarkable substance, and will last for a long time when used for cutting. They should be used in place of Maiden-hair for many purposes during the winter. *D. elegans*, one of the most useful, makes fronds freely and is very light and elegant. I also find that variety may be raised from spores without much difficulty, and seedlings make better plants than divisions. Where a light shading is used, the *Davallias* may be grown in pans or baskets suspended to the roof, and will not take up much space during the summer. *D. fijiensis plumosa* is another fine variety for cutting from, but does not make fronds so freely as *D. elegans*. There are several others which might also be recommended, but as the best *Davallias* have recently been referred to in the pages of THE

GARDEN, I only intended calling attention to their great value for cutting from during the winter. I may add that cut fronds should be put into water as soon as possible after they are cut, or they are inclined to curl up. I do not mean to dip the fronds, but simply to put the stems in the water. F. H.

SHORT NOTES.—FERNS.

***Leucostegia parvula*.**—This is another choice gem, more often called *Davallia parvula*, under which name I had the first plant that ever came to this country presented to me by Mr. Stuart Low. It has a very slender creeping rhizome clothed with ferruginous scales, and the fronds are very dwarf, finely divided and vivid green. This plant requires stove heat, coming, as it does, from the Malay Islands.—W. H. G.

***Dipteris Horsfieldi*.**—This is a magnificent new Fern which I recently saw growing with Mr. Sander. It is a strong growing, handsome Fern, making fronds some 3 feet or more long on a footstalk as long. The fronds are dichotomously forked, toothed at the edges of the lobes, very leathery in texture, deep green on the upper side, very glaucous beneath. This is a genus containing only a few species, but there is one, viz., *D. Lobbiana*, which is well worth the attention of collectors.—W. H. G.

***Rhipidopteris peltata*.**—This is a very handsome dwarf-growing plant. The fronds proceed from a slender creeping rhizome and are evergreen. The fertile frond is entire and entirely covered with sori on the lower side. This is a stove plant, being a native of the West Indies. It does well in shallow pans, in which I saw it very fine in Mr. Dorman's garden at Sydenham. It should be potted in coarse peat, mixed with some turfy loam made sandy.—W. H. G.

***Llavea cordifolia*.**—I recently saw this Fern in a friend's garden doing remarkably well; in fact, I had never seen such a specimen of it before. As I had not seen the plant for some years, I began to fear it was lost to cultivation. This plant was named by Smith *Ceratodactylis osmundioides* in 1839, but he was not then aware that it had been named already in 1816 *Llavea* by Lagasca. It is a pretty and very remarkable Fern, and it appears to be found in the neighbourhood of Oaxaca, in Mexico. The crowns are clothed with long whitish scales, and the barren fronds resemble those of the *Osmunda*. It is an evergreen cool house Fern of exceptional beauty.—W. H. G.

Two winter-flowering Honeysuckles are *Lonicera Standishi* and *L. fragrantissima*, which are easily detected on a mild winter day by their sweet scent—like that of the common Honeysuckle of the hedgerow. They cannot be called climbers, being more bushes, but may be planted against a wall. Where the weather is favourable, a profusion of flowers will be produced in mid-winter. They are not things to plant freely, as they are not effective; but there are many walls in gardens, crowded with old-fashioned things, upon which space could be found for one or other of these kinds. Their fragrance is very sweet, and on the wall of the museum facing the round pond in the Royal Gardens, Kew, they are well established.

Iris alata is one of the most beautiful flowers of the winter season. It blooms in the depth of winter when the weather is favourable, and is a delightful *Iris* to grow in pots, similar to the Violet-scented *I. reticulata*. When thus grown it may be had in bloom very early, and those interested in hardy bulbs will remember the fine group of it shown by Mr. T. S. Ware, of the Hale Farm Nurseries, Tottenham, at the meeting of the Royal Horticultural Society on October 4. It is a South European species, and was introduced early in the present century, being known also as *I. scorpioides*. A few potsful in the greenhouse are very welcome, the flowers large, the tube being from 3 inches to 6 inches in length; the limb is lilac-purple, and the falls of a blue tone, veined with a deeper shade. Its growth is characteristic, the leaves lanceolate, and much like those of the Leek both in colour and general shape. When

planted in the open, a sunny sheltered corner must be chosen, and in the event of bad weather protect the clumps with a hand-light. One does not very often see this beautiful Iris in gardens, and more seldom still grown in pots for the greenhouse.

STOVE AND GREENHOUSE.

ARTIFICIAL TREE STUMPS AT LYONS.

FROM time immemorial horticulturists have secured the double advantage of setting off their plants and also producing shade effects in winter gardens by raising to certain distances from the ground broad-leaved subjects (such as Ferns, Palms, and Cycads) the stems of which were too short for the desired elevations.

The device—a pleasing one enough in its way—which we employed up to the last few years, and which consisted in surrounding the prop and the plant-box or tub with a metal grating and filling up the intervening space with a compost in which could be grown *Selaginellas*, *Tradescantias*, *Oplismenus*, *Fittonias*, &c., to cover and conceal the grating is, however, open to the objection that both the plant-tub and its wooden support are very liable to decay in consequence of their constantly moist surroundings, and also that the soil in the plant-tub, becoming channelled by frequent waterings, is apt after some time to be more or less pervaded with cavities, the effect of which is very detrimental to the well-being of the plant.

Taking into consideration the durable qualities of cork, which have been proved by the satisfactory use that has been made of it in this respect for some time past by Orchid growers, Professor Gérard, director of the Botanic Gardens at Lyons, and myself thought that this material might answer well for making artificial tree stumps, the exterior of which, being formed of a substance which naturally covers the trunks of certain trees, would have a natural appearance, a feature in which all the existing arrangements of this kind were entirely deficient.

For this purpose the proper kind of cork should be selected, rejecting the handsome smooth slabs from which bottle corks are cut and which are technically known as “female” cork, as this kind does not possess the furrowed exterior which the artist who wishes to imitate Nature should seek for. The proper kind to use is technically named “male” cork, and is that which is first produced on the tree. The outside of this being much more furrowed and uneven than that of the other kind, it is commonly rejected by cork-cutters for the very same reason which renders it preferable for our present purpose. Cork of this kind can be procured from Spain, or, doubtless, more easily and cheaply from Algeria, from which country we have imported without any great difficulty more than 22 cwt. of “male” cork during the last three years at a cost of twenty-five francs (£1 sterling) per 220 lbs., delivered at Marseilles. It is sent to us in broad flat slabs and also in cylindrical rolls, the former of which are used in making the body of the stump and the latter for the branch stumps and pockets. After being immersed in hot water for a quarter of an hour the slabs of cork become as pliable as leather, and can be moulded to any form the gardener wishes. In this work, however, he should always be assisted by an artist competent to suggest some pleasing and effective design. The cork, when it cools, retains the form to which it has been moulded, and it is fastened on with a few small nails.

It is probable that by adding to the hot water a few crystals of sulphate of copper the cork would be rendered still more durable, and, taking into account the high character which this chemical bears as a preservative agent, we intend to try it, hoping that it will not injuriously affect the pliability of the cork nor be in any way detrimental to the plants.

We give three illustrations here which, better than any long description, will indicate both the different stages of construction and the effect which “male” cork exhibits when used for this purpose. The first figure shows the skeleton of the structure—a piece of a tree-trunk firmly fixed in the ground and supporting a broad tub, in which will be planted some such subject as a *Latania borbonica* (*Livistona chinensis*, R.B.), as shown in the second figure, in which both stump and tub are entirely concealed by the covering of cork which has been attached, in the first place, to the tub and then to a number of rafters which have been disposed so as to give a sufficient width to the



The first stage: The trunk of a tree and a tub.

lower part of the structure. The third illustration shows the completed artificial tree-stump furnished and embellished with various epiphytal plants, fine-leaved *Begonias*, Ferns, Aroids, Pepper-worts, *Bromeliads*, &c. The varieties of plants and the modes in which they may be arranged in these ornamental structures are without number. Of course, Orchids will form some of the most elegant and effective subjects. Mosses, *Selaginellas* and Grasses, such as *Oplismenus imbecillis* and its variegated variety, may also be employed to great advantage. Lastly, I would specially recommend that some of the fine graceful twiners should be allowed to grow pendent from the extremities of the branch-stumps. Climbing plants are everywhere to be met with in warm and temperate glasshouses, and the only difficulty is in making a selection where the number of eligible subjects is so large.

As concerns the structure itself, it will at least be acknowledged that the transformation is of such a kind that its artificial character is not perceptible—the very result that was aimed at!—E. DEVILLAT, in *Revue Horticole*.

Uroskinnera spectabilis.—This native of Mexico is a very pretty flowering plant that ought

not to be allowed to drop out of cultivation, though such appears likely to be the case, for it is now quite rare. It belongs to the order *Scrophulariaceae*, and forms a plant of a half shrubby character clothed with oblong-shaped leaves, which are each about 3 inches to 4 inches long and covered with whitish hairs. The flowers, which are borne in terminal spikes, bear a good deal of resemblance to those of a *Pentstemon*, their colour being deep mauve on the outside and white within. The individual blooms are about 1½ inches in length and three-quarters of an inch across the mouth. It is by no means a difficult plant to grow, provided the temperature of an intermediate house be given it. Cuttings strike readily in the spring, and a compost of loam, leaf-mould and sand will suit the plant well. It was introduced from Mexico in 1856.—H. P.

Strobilanthes isophyllus.—In a warm greenhouse or in a structure kept at an intermediate temperature this is a very pretty winter-flowering plant, and one that given anything like favourable treatment can be depended upon to bloom freely for two or three months at the dull period of the year. It is a bushy growing, but somewhat upright-habited plant, with lanceolate leaves of a very deep green colour and a great profusion of lavender-mauve-coloured blossoms. True, they quickly drop, but a succession is kept up for some considerable time. It is increased by cuttings of the young shoots during the spring months, and if these are grown on freely they will form good flowering plants by the winter. Throughout the summer they should be grown quite cool. The plant in question is also known by the generic name of *Goldfussia*. It has been known in this country for nearly fifty years.—H. P.

PROPAGATING CALADIUMS.

AT the present day *Caladiums* are decidedly popular, and as the demand for them seems to be on the increase, a few words as to their propagation may not be out of place. Some cultivators allow the tubers to remain in the pots they have grown in, while others turn them out and store them in sand. Where the pots have been allowed to remain undisturbed and there are large clumps of any particular variety, it will be generally found on shaking off the soil that several tubers are present. The small ones may then be potted singly and the larger ones so treated or put two or three together in a pot, according to the purpose for which the plants are required. Should there not be small tubers enough for propagating, some of the larger and more irregular-shaped ones can often be cut up into several pieces, each with a good crown, from whence the future growth will make its appearance. If these tubers are cut clean, dusted over with a little powdered charcoal, and allowed to dry for a few hours, they may be potted and treated the same as tubers that have not been thus mutilated. While there is no difficulty in increasing *Caladiums* when one has a good stock, the case is different when there is but a single tuber perhaps no larger than the top of one's finger to commence with. In that case the rough-and-ready method above enumerated cannot be carried out, greater care and propagating appliances being necessary for success. A close propagating case in the stove where there is a gentle bottom-heat will be just the place for the increase of these choicer *Caladiums*. I have tried various methods, but that which I prefer is to pot each tuber singly in a small pot, using for the purpose light sandy compost. If plunged in a gentle heat they will soon start into growth, when before the first leaf is expanded the plant is turned out of the pot and the soil shaken from the roots, the light nature of the compost rendering this easy. Then it will be seen that as a rule the leaf has its origin on a little protuberance about the centre of the tuber, while a few roots are already putting in an appearance close to the base of the leaf. With a sharp knife, this leaf, with a small portion of the tuber to form a base and its attendant roots, can be taken off, leaving the bulk of the original tuber untouched. The separated portion must be

at once potted, using for the purpose a light sandy compost, and if the leaf is pretty well advanced, a small stick, to which it must be tied, will render all safe. As the *Caladium* grows quickly, care must be taken that the tie is not too tight; otherwise the young foliage may be permanently injured. Directly they are potted these young shoots must be replunged in the close propagating case, when they will become nicely established in about a week, and can then be hardened off. The remaining—that is, the major portion of the tuber—may be again repotted in light sandy compost, and also plunged in a little bottom-heat. As the central crown has been removed some of the hitherto latent buds will start into growth, even a small tuber producing often two, three, or even more. When sufficiently advanced these may be taken off as above detailed and treated exactly as those first produced, but as the propagating process is not often carried beyond this second crop, what remains of the original tuber should be allowed to remain attached to the strongest shoot. As these young *Caladiums* quickly become established they must be hardened off and shifted on into larger pots as required. This method is by no means the only one followed for the increase of *Caladiums*, though I prefer it to any other. By some the upper part of the tuber is not covered with soil, which is open to this objection that the roots do not start so freely as on those that are covered, while if laid in *Sphagnum*, as is sometimes done, the young roots are then very brittle and liable to be injured. Though the time for these operations may vary somewhat according to circumstances, the latter part of January is a very suitable season to get all the tubers potted and place them under conditions favourable to starting into growth.

T.

Rhododendron jasminiflorum.—This is especially interesting from the fact that it is one of the original species from which Messrs. Veitch have created their magnificent group of hybrid varieties. Apart from the interest attached to it on that score, it is a really beautiful little flowering shrub for the warm greenhouse, and one that will often flower during the winter months. It forms a small much-branched bush, clothed with neat roundish leaves, while each shoot is terminated by a cluster of pure white Jasmine-like flowers. Its season of blooming is by no means limited to the winter, as it both grows and flowers nearly throughout the year. This *Rhododendron*, which is a native of Mount Ophir, in Malacca, was introduced into this country in 1849.—T.

Pavonia Wioti.—A few years ago this plant was met with far more frequently than it is at the present day, and in August, 1883, a coloured plate of it was given in *THE GARDEN*. It is allied to the *Abutilons*, but its nearest relative is the Brazilian *Gœthea strictiflora*; in fact, by some authorities a couple of the *Pavonias*, viz., *Wioti* and *Makoyana*, are included in the genus *Gœthea*. *P. Wioti* is an upright-growing shrub, somewhat sparingly furnished with foliage; while the flowers, which are borne in a terminal corymb, are very curious and pretty. The most conspicuous part of the inflorescence is furnished by the outer calyx, which is large, of a bright reddish pink colour and split up into narrow segments. The petals are of a dull purple tint, while the blue anthers are very conspicuous crowded together at the contracted mouth of the corolla. A good strong corymb will produce as many as a dozen flowers, and as they do not open all at once, a succession is kept up for some little time. In this species the leaves are very distinctly serrated, but in *P. Makoyana* they are only slightly toothed, which furnishes one of the means of identification, the other points of difference being that both flowers and foliage are very much darker in colour; while the bright-coloured outer calyx is not cut up into linear segments, as in *P. Wioti*. The flowers, too, are principally produced from the axils of the leaves on the upper part of the stem. The flowering season of these *Pavonias* does not appear to be limited to any particular period of the year, but they are more useful during the dull days of

winter, and if needed they can then easily be had in flower. Like many of their allies, they are apt to run up tall and naked at the base, so that the better way for winter flowering is to strike the cuttings in the spring and grow them on freely; when in pots 5 inches or 6 inches in diameter, they will form neat flowering plants. A fairly good soil of not too light a nature will suit them well. Cuttings are very easily struck at any time during the growing season.—H. P.

PLANTS WITH VARIEGATED FOLIAGE.

THE great variety and various shades of colour in foliage will make up as bright and effective a group and be more enduring than when flowering plants are used. I do not mean to depreciate the value of flowering plants for decoration, yet in making a



The second stage: The trunk of the tree covered with male cork.

display I prefer to keep to fine-foliaged plants if a good selection of well-coloured material is at hand. Flowering plants and green foliage go well together, but variegated foliage and flowers never seem to me to be quite in harmony. In large groups a few tall white Lilies may be used in the background, or perhaps a few good sprays of *Odontoglossums* or other light-coloured Orchids may be used here and there in the foreground. In groups at flower shows it is no uncommon thing to see *Pelargoniums*, *Fuchsias*, and other showy flowering plants grouped among beautiful *Crotons*, *Dracenas*, and other bright-leaved plants, the effect being that the shades of colour do not harmonise and one spoils the other. In very large groups where a belt of neutral colour can be brought between flowers and coloured foliage, a fine effect may be produced, but what I most object to is an indiscriminate mixing up of all classes of plants as is frequently seen not only at flower shows, but also in conservatories. For the latter

I would particularly recommend that allied plants should be grouped together—for instance, *Begonias* of various shades arranged together with a good background of tall green-leaved plants, and an edging of *Isolepis* or other suitable material. A few nice leaved plants may come between these, and say a group of *Fuchsias* or *Pelargoniums*. Of course, this system of arrangement cannot always be followed, yet it may be done to a great extent, and by making a feature of some particular class of plants and using only such other material as will add to rather than detract from the effect, a much finer display may be made. When fine-foliaged plants are used it is not necessary to make quite so much distinction; for instance, *Crotons* and *Dracenas* go well together, especially when arranged with an undergrowth of Ferns and a few tall Palms; variegated *Cyperus*, *Dieffenbachias*, and a number of other variegated plants may be used in the same group and will harmonise together.

Within the last few years fine-foliaged plants seem to have been more appreciated. The London florists use them very largely for all choice work not only as plants, but when cut. Besides the choice indoor plants, many hardy subjects provide useful material. F. H.

Acacia lineata.—For pot culture in the shape of little bushes this *Acacia* is a very desirable one, as it will not only flower freely in a small state, but it also blooms earlier than many members of the genus. It is rather an upright-growing freely-branched species, whose slender shoots are clothed with narrow leaves, and plentifully studded with little orange-coloured ball-like clusters of blossoms. If required to be kept in a small state it may be cut back after flowering, and then placed in a growing temperature to encourage it to break freely.—H. P.

Treatment of Schizanthus in winter (H. C. M.).—You did well to remove the plants from the frame before Christmas, or perhaps they would have been nipped by the sharp frost. You should keep them near to the glass in the greenhouse, but do not attempt to give them heat. The plant should have ample root room, and be potted in a mixture of about equal parts of turfy loam, good leaf-mould, and rotten manure, the whole made fairly sandy. Treated thus and not allowed to become drawn, they will produce a wonderful show of bloom in spring.—W. H. G.

Resting of Bouvardias.—Some people often find a difficulty in getting *Bouvardia* cuttings to root, but this is on account of the plants the cuttings are taken from not being sufficiently rested. As the season will soon be here for propagating, care should be taken that the plants for this purpose have a thorough rest. The plants will rest well in a temperature of 45°, and water should be entirely withheld. If the plants have any scale upon them, and after they are rested preparatory to placing in heat, look them over carefully and wash well with an insecticide and sponge. If the stock plants are well cleansed, there will not be nearly the trouble afterwards.—A. Y.

Three Begonias.—P. Wilson sends three *Begonias* for names. No. 1 is *Begonia microptera*, an Eastern plant, having been introduced from Borneo by Messrs. Low, of Clapton. It is an erect plant with long leaves which are deep green on the upper side, paler beneath; the flowers are borne in a terminal head, and are paper-white with pale

yellow stamens. It succeeds well in small pots. No. 2 is the plant that was so well-known in our gardens thirty years ago under the name of *B. Griffithii*. It is a compact growing plant with large obliquely-cordate leaves; the colour is deep green, having some distance within the margin a complete zone of greenish white; the underside is red; the flowers, large and numerous, are white on the inside. The plant is found in Northern India. No. 3 is *B. glandulifera*, a small growing stemless plant from Trinidad, with large bright green leaves. It bears a branched panicle of rather small pure white flowers. This forms a handsome specimen, and is well deserving attention from the amateur. —W.

NEW STOVE AND GREENHOUSE PLANTS OF 1892.

IN reviewing these productions after the close of another year, it must be borne in mind that the majority of those which are strictly new have not as yet been placed in commerce. Thus in some cases it is quite as possible to under-estimate their special value as it is to place too much confidence in their future usefulness. Some classes of plants—*Crotons* and *Dracenas*, to wit, from amongst stove fine-foliaged plants—have become so numerous as to leave far less room for any striking novelty to impress itself upon the public at large. In some instances it will take several years before the real merit or value of a plant is known sufficiently to cause a great demand for it. It would, therefore, be premature to condemn any plant in which there are some signs at least of improvement until it has had a fair trial, and that under varying conditions. During the spring season there were several noteworthy exhibits of seedling *Amaryllis*, which show that further improvements have been capable in this grand family of bulbous plants. Of these, note should be made of the following, which obtained certificates when shown, viz., *Mars*, a rich deep red of good substance; *Eclipse*, ground colour white, with crimson veins, the finest of its colour yet seen; *Silver Queen*, a beautiful pale variety with red markings; *Crimson King*, a rich deep crimson self of fine form; *Firebrand*, flowers veined with rich scarlet and edged white; *Charles Penny*, crimson-scarlet, with broad petals; *Sylvia*, a distinct cross with *A. reticulata*, having the foliage of the latter, the flowers a bright rosy crimson, veined with white, with a broader margin of the same colour. Other kinds were also shown, proving that the standard is more than sustained. During the same period a few at least of very promising additions were made to the *Roses*. These, having been shown from under glass, can very well be included in this list. Of these, note should be made of *Hybrid Tea Lady Henry Grosvenor*, a delicate blush-pink, the blossoms large, the habit dwarf and sturdy. Another *Hybrid Tea* called *White Lady* was also certificated. In size it approaches that of *Her Majesty*; in the colour there is a slight trace of pale pink or blush. In *Tea Rose Corinna* we have a promising addition to garden or pot *Roses*, the growth very free; also the flowers, which are most beautiful in the bud stage, the colour a shade of salmon-pink. Another *Tea* called *Waban*, a sport from *Catherine Mermet*, has flowers several shades darker than that well-known kind. Two new varieties with much of the character of *La France* are to be found in Denmark, in which the colour is much darker, whilst in *Caroline Testout* the colour is paler, the silvery shading more handsome and the pink much lighter.

Of other flowers coming under the definition of florists' flowers, attention should be directed to *Canna Alphonse Bouvier*, the habit dwarf, the flowers crimson and of large size. In *Pelargonium* (decorative section) *Arete*, which is a sport from *Volonte Nationale*; the colour of this latter and well-known variety is far deeper in the sport; in this case a bright cerise, with the most profuse flowering character. In *Auricula Golden Drop* the lovers and growers of this class of plant will find an acquisition; the flowers are double and of a pale lemon shade, lasting well in good condition.

The now popular *Clivias* (*Imantophyllums*) have a further addition in Mrs. P. C. Glyn, the flowers large with broad petals, borne in a large truss; the colour a bright orange with light centre. As a forcing plant (being shown in February), *Lilac President Grevy*, a double variety, as shown almost white, is a further addition to a popular class of plants for forcing. Two new Chinese *Primulas*, *Pink Queen* and *Peach Blossom*, are both beautiful varieties with finely fringed flowers, the colours in both cases being soft and distinct; these were shown at the January meeting of 1892. During the same period, i.e., prior to the Temple show, the following first-class certificates were awarded: To *Bertolonia Comte de Kerchove* and *B. argyroneura*, both lovely varieties of these handsome dwarf stove plants, the former being the darker kind, olive-green and rosy pink predominating, whilst in the other the colouring was a pale green suffused with silver. In *Elæis melanococca* we have an old Palm, re-introduced to notice, a fine hothouse variety. From the Burford Lodge collection of Aroids came *Anthurium Andreanum sanguineum*, a very superior form with deep blood-red spathes. Two new, but totally distinct *Bladder* plants were shown at one of the April meetings—*Utricularia Humboldtii*, with flowers larger than *U. montana* and of a pale lavender-blue shade, the spikes long, the foliage broad, and *U. longifolia*, which has short spikes and narrow foliage, the flowers being a lovely pale mauve in colour. In foliage plants *Grevillea robusta elegantissima* is a distinctly handsome variety, far more elegant even than the type. *Spiræa Thunbergii* bears some resemblance to *S. astilboidea*, but is more graceful in habit. Another Aroid (*Aglaonema costatum*) is a marked addition to the dwarf decorative stove fine-foliaged plants (see p. 4, Jan. 7, 1893). *Caladium Souvenir de Paro* is quite a miniature bicolor, being as dwarf as *C. argyrites* and compact. *Tillandsia Moensii* and *T. Massangeana superba*, two very beautiful *Bromeliads* which should be as plentiful as *T. splendens*, both being fine additions to their class. *Dracena Coulingii* is another hybrid with much longer foliage than *D. terminalis alba*, but with the same markings. *Lotus peliorrhynchus* (the Bird's-foot Trefoil) should make a beautiful basket plant; it has a long pendulous growth and small red flowers. In *Pardanus pacificus* was shown a noble, robust-growing form of *Screw Pine* with very broad stout foliage, bright green in colour.

The foregoing were the chief exhibits prior to the Temple show in May. At that gathering there were several distinctly handsome plants shown to which certificates were awarded.

CAMELLIAS.

AT this season, when there is not quite such a pressure of work amongst plants in general, it is a good time to turn one's attention to *Camellias*. Perchance they have not had for some months more attention than has been absolutely necessary in the way of watering and syringing. Some cleaning may be found needful, more particularly if there be any scale or other insects upon them. Where this is the case, it had better receive immediate attention. The plants should be kept well moistened with the syringe in advance of the cleaning by means of sponges for the leaves and small stiffish brushes for the wood. White scale is the worst insect pest upon the *Camellia*, not only disfiguring the foliage, but being also the hardest of all to eradicate. For this an extra strong solution will be found necessary, say one-fourth stronger than the standard advised for use, two excellent insecticides being Veitch's Chelsea blight composition and Bentley's soluble paraffin oil. When using these beyond the prescribed strength, it will be safer to spray the plants lightly soon after sponging to prevent injury to the leaves. Another capital method to adopt is that of using the insecticide quite hot, say from 85° to 100°. At this temperature it will be found more effectual, but the difficulty arises as to how it is to be kept warm enough. This may be overcome by means of a spirit kettle, frequently adding fresh water

and liquid. It may be necessary here to allude to one fact as regards insecticides in general. It is that of not omitting to well shake the bottle or tin before pouring any of it out, so that it is thoroughly well incorporated. The white scale and other kinds too often cluster close around the flower-buds, from which they will have to be moved with a pointed stick. Where any plants are badly infested it will pay to do the work well, even at a cost of time and labour. In the case of plants growing in borders, there is the subject of top-dressing to be considered; this may well be done at this season, using good soil only. In my own case I find good fibrous loam and peat with some spent Mushroom-bed manure and road-side scrapings a suitable mixture. This is applied when it is all fairly well dry, so that it can be pressed down firmly all over the surface, for I do not believe in keeping the top in a loose state; the moisture escapes from it more freely, whilst the roots do not take to it so kindly. Before applying it, however, the surface of the border should be looked over to remove any sour soil.

In the case of pot plants, where there is room the same attention should be given, but it is not advisable to disturb the surface roots to do it. If any pot plants are in need of a shift, this necessary work from time to time having been postponed, it may also be done now without any fear of bad results. Where the balls are already full large and cannot be exceeded, they must be reduced; in doing this I prefer to slice off the outer portions of the ball rather than adopt the more tedious process of pricking out the soil with a stick. It can be cut away sufficiently with a sharp instrument, such as an old carving knife or a piece of an old scythe. Thus treated the old roots will break out afresh and make plenty of young fibre in the new soil in due course; whereas, by the other process the loose roots are pressed down closely beside the old ball in the act of ramming down the fresh soil; this cannot be done without injury to them. The bottoms of the balls should be sufficiently reduced to allow of a fair top-dressing as a finish. If from three-quarters of an inch to 1 inch of fresh soil can be added all round, it will give the plants fresh food for a good few years to come. The soil I would recommend is peat and loam in equal parts with a moderate use of bone-meal or finely crushed bones, which in this case are preferable to any manure, as they provide food in prospective rather than in the more immediate future. In any case where there is the slightest suspicion of dryness at the roots it is much better to soak the balls well before potting; one then knows more about how to treat the plants afterwards, care, of course, being more necessary in the case of newly-potted plants.

Where plants which are growing in borders are becoming exhausted at the roots more radical means need to be adopted. I have found that one good way of doing this in the case of plants 12 feet or more in height was not to remove or lift the plants at all, but to take away all the soil at a distance from the plants up to within about 1 foot or so of the stem, thus leaving a ball in each case of about 2 feet in diameter. This was done down to the crocks or brick rubble constituting the drainage, which was also taken out and relaid afresh after all the finer soil was cleared away. In doing this each plant stood in its position safely enough, not being undermined. The filling up again was an easy matter, being done as firmly as possible, using the soil as in the case of potting, but rougher in each case, with roadside scrapings mixed with it. The plants took to this fresh soil without any check to them; the new soil was of course made higher than the balls of the plants, so as to direct the water towards the roots. In my case I always prefer to syringe my *Camellias* the winter through; the plants appreciate this, I find, whilst it preserves the leaves quite clean and glossy-looking, no cleaning being necessary, as insects are a rarity. This syringing keeps a moist atmosphere, the position being a dry one, too near by far to the boiler and pipes, which it is compulsory to keep partially warm for other reasons

The little warmth and a dry atmosphere would have a tendency to bud-dropping, which is thus to a large extent avoided by syringing daily, even when dull or cold. Being within the radius of fogs and smoke, it is all the more necessary to keep to the syringing whilst the buds are expanding, even from the embryo stage upwards. These appear to be susceptible to injury from this source; whereas the foliage is not, or only in a slight degree. The moisture appears to ward off injury or modify it to a large extent.

Bud-dropping is annoying from whatever source it may originate, and if it can be avoided, it should be by all possible means. Dryness at the root whilst the buds are swelling up, from a small size even until they are almost showing colour, will cause it, and that to a grievous extent. The Camellia is most decidedly a moisture-loving plant and should be treated accordingly, provided the roots are, as they ought to be, in good condition to receive it. In the case of sorts which are not found to cast their buds or where any hardly ever do drop, it is advisable to thin them out in good time. If there be an equal and good set, one bud to a shoot of medium growth and two to a stronger one are quite enough for any plant to carry. There is another practice which is not, I think, adopted to any extent when treating young plants that it is desirous to make into good bushy plants; it is that of disbudding the terminal wood-buds also. In doing this, back-breaks are made, and instead of one or two buds starting into growth, three or four are secured, which in itself is no slight gain when building up young specimens. Newly imported plants of small or even larger size will usually be found growing in peat. The sooner these are attended to at the roots the better will it be for them, otherwise they will probably feel the change of treatment, &c., all the more. If they are in small pots with plenty of roots, the best way will be to shift them into a size larger, first removing any loose soil; if not so well rooted, the same size of pot will do again, first reducing the ball a little to admit of fresh soil. Why I advise this is because our foreign neighbours grow their Camellias in much lighter soil than ours; this has a tendency to become too dry, consequently the plants suffer. They are more liable to do this where only grown in small numbers, simply because the treatment so essential to them cannot be given without detriment to other things; whereas when growing in bulk (hundreds, and possibly thousands together) a different course can be adopted to suit their needs. For these in their new quarters I advise the same soil as previously quoted. Even in the case of larger plants I would follow the same course rather than let them stand over in light soil. In dealing with these imported plants, what is wanted, of course, is satisfactory progress; this will be ensured in a greater degree by following this advice. Where these plants are set with flower-buds to an excessive degree I would prefer to thin them out at once, and thus secure finer flowers, following also the hints given as to disbudding the wood-buds to obtain back-breaks.

GROWER.

A pure white Delphinium.—We understand that a pure white Delphinium has been raised by Messrs. Kelway and Son, Langport Nurseries, Somerset. It is the result of years of patient hybridising, and possesses the fine bold character that distinguishes all the other varieties raised by this firm. We shall look forward with interest to this novelty as likely to prove a very beautiful and useful garden flower.

Cypripediums are amongst the most useful flowers during the winter season, especially in the vicinity of London. One can see this by the exceptionally fine displays in such nurseries as Messrs. B. S. Williams and Son, Upper Holloway, where the fogs at times are unusually dense. When in the gardens of Syon House, Brentford, a few days, we noticed that Mr. Wythes had a splendid show of *C. insigne*, which is of the utmost value in the new year for cutting. The flowers are little

hurt by fogs, against which the *Calanthes* stand no chance. This fine old Lady's Slipper is treated almost as a hardy plant, and by reason of this treatment the flowers last much longer than would otherwise be the case, whilst they are also larger and richer in colour. During the summer season the plants are kept in a cold frame, the frames being left off at night, and in the winter season placed in houses heated just sufficiently to keep out frosts. We often see *C. insigne* and its varieties stewing in a high temperature, but the results are not so satisfactory as when the plants are given more natural conditions.

KITCHEN GARDEN.

SMALL VEGETABLES THE BEST.

COARSE or extra large vegetables are, as a rule, appreciated at the exhibition table only. In the kitchen they are wasteful and out of place. They must, in many cases, be either much cut up or greatly reduced in size before they can be properly cooked and served, and the quality inevitably suffers from this mutilation, the waste also being more than many gardens can well sustain. It does not follow that under-sized vegetables are the best, but on the contrary every variety ought to be grown to its natural size, or otherwise it may not be so tender and mildly flavoured as desirable. Where employers and owners of small gardens rightly prefer medium sized to small vegetables to any that would win prizes, these would be more often forthcoming if a better selection of varieties was made in each case. If comparatively small forms of vegetables are desirable, these can be found included in most catalogues, and properly cultivated they will prove of superior quality, productiveness also being equally satisfactory.

At present the greatest praise that the compilers of seed catalogues can bestow upon Peas is their length of pods and the extra large size of the seed. Some of the latter when first shelled are near the size of playing-marbles, whereas these are altogether too large for the dining-table of the wealthier classes, who prefer to have them very much smaller. As far as size of seed and colour is concerned, William I. is a model variety, but the quality is scarcely good enough. No mistake can be made by growing either Chelsea Gem or William Hurst extensively either under glass or on warm borders, either Exonian or A 1 affording a good succession. Telephone is not a particularly large-seeded variety, and owing to its being moderately early, is as yet indispensable. Personally, I am surprised that Wordsley Wonder has not become very popular, this second early variety only attaining a height of about 30 inches and cropping heavily, the long narrow pods being densely packed with small seed of the best quality. Criterion is deservedly very popular, this being best described as an earlier, smaller-seeded form of Ne Plus Ultra. Gladiator however, is a more fit companion for Wordsley Wonder. Duke of Albany and Ne Plus Ultra are such good disease-resisters as to be indispensable, even if somewhat large seeded, while Sturdy is a late variety that ought to give satisfaction to everybody. Large-seeded Broad Beans are of little value in many gardens. If they reach the dining-table at all, they have to be gathered when quite small and young, the only sort that can be left long enough on the stalks to fill their pods being Beck's Dwarf Green Gem. One of the smallest of kidney Beans, viz., Osborn's Forcing, is also the best in point of appearance, tenderness and flavour when cooked, but it

must be sown rather often, as the pods quickly become too old. Smythe's Hybrid is nearly as early, more productive, and the pods are small, dark green in colour when cooked, tender and delicately flavoured. All the same, it will never become very popular, owing to the pods so quickly becoming too old for use. I prefer either Ne Plus Ultra or Syon House, to neither of which can the term coarse be applied. Runner Beans of extra great dimensions are much favoured now-a-days, but I shall grow none but the old Scarlet, than which there are no more productive forms in cultivation, the pods being small and of superior quality.

It is not possible to grow Globe Artichokes too large, but it is not from seed that the plants should be raised, unless for the purpose of obtaining one or two vigorous forms. The majority of the plants raised from seed are worthless. Asparagus, again, cannot be overgrown, but more in this case depends upon the cultivation than upon the name given the selection or variety. Dell's Crimson is the Beet that best pleases the cooks generally, coarseness never being complained of when this variety is sent to the kitchen. Crimson Ball is available for early use, but on strong ground, that or any other form of Turnip-rooted Beet soon becomes too coarse. Large Carrots are most objectionable. Any of ours that attain a great size invariably go to the stables, only the medium-sized and smaller roots being sent to the kitchen. The Parisian Forcing is most preferred by good cooks, and no mistake can be made in sowing either Early Scarlet Horn, or, better still, Nantes Horn, in quantity, though not all at one time. The latter variety keeps admirably, while if a good form of Intermediate and Long Red Surrey are also grown, a long succession of superior Carrots will be available. Of Onions, the earliest and smallest will be found in The Queen, the flavour of this white-skinned variety being very mild. Early Naples is a delicately flavoured form of White Tripoli, and both this and the Leviathan White Italian can safely be served whole as a vegetable. For storing, any White Spanish variety, in addition to the long-keeping Brown Globe are ample. Of Turnips, Early Milan ought to be grown more on account of its earliness than for any other reason. Early Snowball forms a good succession, and is of fairly good quality. Veitch's Red Globe is apt to grow to a great size, but the cooks never find fault with it, and it is fairly hardy. It is not often that Chirk Castle Black Stone grows to a large size. More often than not the roots are none too large to cook whole, and this very hardy late variety is superior to all others in point of flavour and tenderness. Potatoes are naturally above the average size this season, and many of the newer forms are simply of huge dimensions. Some of them will certainly bake satisfactorily, and that is about all they are fit for. It is not often any of the Ashleafs are too large, and the same may be said of such equally well proven sorts as Cole's Favourite, Snowdrop, Cosmopolitan, and Magnum Bonum. All points considered, the last-named is yet one of if not the very best late Potato in cultivation. The Bruce, as far as my experience goes, is no improvement on it. Of newer sorts the best grown were The Gentleman, Carter's Surprise, Holborn Reliance, and Laxton's Victorious, none of these being exceptionally large with me, the quantity and quality of crops also being satisfactory. Whether Parsnips shall be very coarse or not greatly depends upon the cultivator, early sowing and allowing too much space being mistakes most often made.

Either Ayton Castle or Musselburgh Leeks are preferable to the coarser grained exhibition varieties, and whether Celery shall be of great size or of a more serviceable character greatly depends upon the cultivator.

Of Borecole or Kale, the green-curled forms, notably Read's Improved Hearting, are the best, and are never grown too strongly. The best forms of Broccoli are all liable to attain a great size, and must be treated accordingly by those who desire to have them of moderate dimensions. Brussels Sprouts vary greatly, the Aigburth being the coarsest and strongest flavoured of all. Small, very close and mildly flavoured sprouts are most in demand, and these can be most surely had if The Bullet and Ne Plus Ultra are grown. Small Cabbages are much the best in every way, and no mistake will be made by growing Ellam's Early Spring, Wheeler's Imperial, and Little Pixie. The Extra Early Forcing Cauliflower or Snowball is quite a little gem for either frame culture or the open borders, but the rest if highly cultivated attain a great size. Savoys are not very numerous, and of these the smallest are also the most tender and mildly flavoured. Tom Thumb, Early Dwarf Elm, and Gilbert's Universal are the best, Dwarf Green Curled and Drumhead, though coarser, being necessary for affording a good succession. Chou de Burghley must be sown late and grown rather thickly, or the hearts will become far too large, while Laxton's Chou de Bedford promises to become a very popular winter vegetable. Spinach leaves cannot well be too large and succulent, and the Victoria or Monstrous Viroflay invariably gives satisfaction. W. I.

BRUSSELS SPROUTS FOR MARKET.

AMONG vegetables grown for market, few, taking one year with another, pay so well as Brussels Sprouts. Their season is a long one, lasting from September till spring is far advanced, and it is surprising what a quantity of sprouts can be taken from an acre of ground during the winter months. Contrary to what might be expected, the best prices are not generally obtained in midwinter, but early in autumn, when there is an abundant supply of runner Beans and other green vegetables. The first pickings make about 8s. per bushel, and for this reason every market grower does his best to get some into market at the earliest possible date. In many places a portion of the seed is sown in warmth in February in frames heated with manure. The young plants are gradually hardened off so that they can be got into the open ground early in April which, of course, gives them a great advantage over those sown in the open air. The main crop is sown at the end of March or beginning of April, according to the weather. A large grower in this neighbourhood, but who has no means of raising plants in warmth, saves a part of his seed where the plants are to remain permanently, thus avoiding the inevitable check incurred by transplanting. The seed is, of course, put in thickly, and superfluous plants are taken out and planted elsewhere. It is said that the plants which remain undisturbed come into bearing from a fortnight to three weeks before those that are set out in the ordinary way. Where this method is practised, the land is rather light, and I doubt if it could be successfully employed on land naturally tenacious, and which is difficult to bring into that finely pulverised condition necessary for the reception of small seeds. Where the soil will admit of this way of culture being practised, it will be found of great use, both for economising labour and inducing precocity. In severe winters Brussels Sprouts are simply invaluable. When Cabbages and other winter greens are annihilated, the grower who has a few acres of Brussels Sprouts has something to go to market with. As before mentioned, the best returns are as a rule made early in the season, average prices

during the winter being from 3s. to 4s. per bushel, with a rise frequently of 1s. per bushel at Christmas and the new year. After a hard winter, when greens have been hard hit and supplies are proportionately limited, prices will rise again to their early autumn level, and will remain so until Turnip-tops come in plentifully. J. C. B.

Bush Marrows.—In market gardens in this neighbourhood the bush varieties are usually grown. They occupy so little space and are so prolific, that it seems a waste of room to plant the trailing kinds. Some of the growers save their own seed, cultivating but one kind; in some cases it is a long white and in others a green kind. The former finds the most favour, although there is but little difference in the flavour of the two.—E. M.

Mushrooms in winter.—At the last meeting of the Montreal Horticultural Society Mr. John Perrin, in a paper on the "Culture of Mushrooms in Winter," recommended that light sheets of paper, such as newspaper, should be spread over them as soon as the clumps appear, and that they should be syringed lightly two or three times a day. Under this treatment they grow faster, become larger, and weigh more, having perfect form and colour as



The white Ligurian Harebell (*Campanula isophylla alba*).

well as improved flavour. If allowed to become to any extent dry and discoloured by the air, they at once acquire an unpleasant taste similar to that of meat which has been too long exposed to the air.

Summer use for Seakale pots.—Another good, but not such a pretty use as that mentioned on page 570 to which Seakale pots can be put in summer is for growing Tomatoes in places where it is not possible or advisable to plant them out. Where the wall borders are full of roots of fruit trees that leave wall space enough for a plant or two of Tomatoes, these pots prevent the necessity of breaking the border and can be filled with soil most suitable for the plants. So little Seakale is now forced under pots that there must be many of them lying comparatively idle, and many uses for them might be found, one of the best being for sinking into the ground bottom upwards for planting delicate things in, or those which want a special soil, as the pots prevent delicate roots from becoming choked by coarser neighbours.—J. C. F.

Dwarf Beans.—We have to keep up a supply of dwarf or runner Beans all the year round, said Mr. Bowerman to me the other day. In August we sow Ne Plus Ultra in frames to give a succession so soon as the frost has destroyed Beans out of doors. Then in October we follow on with sowings in pots of Osborn's Early Forcing, the best

to be had for winter culture. These are sown in 3-inch pots, and when a few inches high are shifted into 6 inch pots, the plants being forced out to the sides of the pots by the soil. The pots are not filled at the first, but the plants are gradually earthed up. Sowings are made through the winter every fortnight, standing the seed pots along the top of the pipes to promote quick germination. The March sowings of Ne Plus Ultra, are again made in frames, and that course is continued until dwarf Beans come in out of doors. The chief outdoor variety is Canadian Wonder. A moderate temperature ranging from 60° to 65° suits best, as too great heat is productive of a dry atmosphere that is generative of red spider and sometimes causes the blooms to fall. Outdoors the best runner varieties are Ne Plus Ultra and Prize-winner, of which the stocks at Hackwood are of the finest. These are secured only by constant and the most careful selection, special pods being marked and reserved for seed-production. Dwarf Beans are found to maintain their characters more readily than are runners, but that is perhaps due to the fact that the latter have of late been so remarkably improved that reversion seems now more probable than considerable advance.—A. D.

GARDEN FLORA.

PLATE 892.

ALPINE BELLFLOWERS.

(WITH A COLOURED PLATE OF *C. PUSILLA* VAR. *CESPITOSA*.)

THE number of species of these charming Bellflowers known to botanists exceeds 230, and these are distributed chiefly over the Northern Hemisphere, the Mediterranean region, &c. The Campanulas come in between the Specularias, which are all annual, and the Phyteumas, which are readily distinguished by their peculiar flower-heads and distinct habit. Taking them altogether, there are possibly 100 species, varieties, and hybrids in cultivation in our gardens, varying in height and habit from the Canterbury Bells and *C. pyramidalis* to the tiny alpine *C. cenisia*. What would the rockery be without Bellflowers, the most beautiful and interesting of all summer-flowering alpine? They are by far the most attractive and beautiful of our dwarf rock plants; the majority of them bloom at a time when plants of this class are most needed, and with care and a little attention their flowering season might be carried well into the autumn. The whole genus is characterised by the ease with which they may be cultivated in our gardens and the abundance of their flowers. There are many more dwarf species or varieties in cultivation than are mentioned below in detail, such as *C. Morettiana*, *C. Zoysi*, *C. petraea*, *C. collina*, *C. macrorhiza*, *C. planiflora*, *C. uniflora*, *C. Scheuchzeri*, *C. linifolia*, and others which are grown in many gardens, but although distinct, there is a certain family likeness that makes it unnecessary to grow them all in one collection, especially where space is limited. Many of the Campanulas are, however, so easily managed, that a liberal selection for every rockery great or small should be made. As regards soil, plenty of vegetable matter is always desirable, and in the case of those with running underground stems, a liberal admixture of grit or broken granite will be found beneficial. Division of the tufts, cuttings, and seeds are ready means of increasing them, and the species from high altitudes should always be protected in

* Drawn for THE GARDEN at Gravetye Manor, Sussex, by Gertrude Hamilton, July 12 1892. Lithographed and printed by Guillaume Seignin.



Campanula medium

winter, and if possible spare plants kept in the cold frame in case of accidents.

C. ABIETINA.—A unique and charming species from the Transylvanian Alps. It somewhat resembles the well-known *C. patula* both in the form and colour of its flowers, but it is a perennial instead of an annual, and on this account will be found a most useful addition to the rock garden. The leaves are rather narrow with toothed edges, of a striking, pale yellowish green, the rosettes dense and attractive even in the absence of the curiously-tinted flowers. The flower-stems, slender and about a foot high, bear abundance of lovely reddish-violet flowers with a greyish-white throat. It thrives best in a sunny spot, and may be readily increased by division. It blooms all through the summer months.

C. ALLIONI.—Although repeatedly introduced into this country in quantity, and at times grown successfully, this may be looked upon as a comparatively rare species in gardens at the present time. It is the loveliest of all the alpine Bellflowers, and has baffled some of our best growers. It is said to require full exposure to the sun, and a soil composed of peat, leam and sand with pieces of flint. This soil should be firmly stuffed into the chinks between

May and June, and sometimes again in late autumn, the blooms being arranged in erect racemes, bell-shaped, pendent, and thickly bearded. Light rich soil suits it best, and it should be fully exposed to the sun during summer. It forms a long or tap root, and prefers deep to shallow soil.

C. CESPITOSA.—The true plant is very distinct from that usually grown in gardens as such, which is a mere form of *C. pusilla* under which species it will be noted. It has a dense tufted habit of growth with somewhat oval-lanceolate root leaves; those on the stems which are numerous are narrow, linear, and always dark green. The flowers, which are produced in July, are very distinct, being cylindrical rather than bell-shaped, somewhat contracted near the mouth, and truncate. They are deep violet-purple with numerous prominent ridges running their whole length. It is on whole a very distinct and showy species, thriving well in a light rich soil in sunny spots on the rockery. It is a native of Carniola, &c., and may be increased by division or seeds.

C. CARNICA is a species very much in the way of *C. pusilla*, from which it differs by its much longer narrower leaves and larger deeper shaded flowers.



Campanula garganica. Engraved for THE GARDEN from a photograph sent by Miss Wolley Dod, Edge Hall, Malpas.

rock or large boulders, and here this charming Bellflower may be expected to thrive. It increases, however, rapidly by runners, which should never by any means be checked. So long as they can travel in congenial soil the plant will thrive, but as soon as this is exhausted, the plant will soon wear out. It forms dense tufts an inch or so high, the leaves narrow and blunt. The flowers are large, bell-shaped, violet-blue, opening in July and early August. It is a native of Piedmont, &c., and may be increased by cuttings.

C. ALPINA is a curious dwarf species rarely seen in cultivation, although by no means the least ornamental of the alpine species. It is a native of the limestone rocks in the Tyrol and Carpathians, and the soil should be well mixed with old mortar rubbish. It is very impatient of moisture, especially in winter, and if not planted in a vertical position it should be covered with glass during rainy weather in winter. It rarely exceeds 2 ins. or 3 ins. in height; the stem and leaves somewhat downy, the flowers somewhat large, of a deep blue colour. It flowers in April and May, and is most readily increased from seeds.

C. BARBATA is the well-known hairy alpine Bellflower so common on all the Swiss passes. It is plentiful in all the pasture regions of the Alps, and is readily distinguished by the long projecting hairs of the corolla. It flowers on our rockeries in

It thrives on an eastern exposure on the rockery, and likes a gritty sandy soil. It flowers in May and June, and is a native of Transylvania, &c.

C. CENSISA.—This is one of the most beautiful of the truly alpine species, not, as its name would imply, confined to Mount Cenis, but pretty general throughout the Alps wherever slaty rocks are prevalent. It is usually found in sandy places by the edge of the glacial torrents wherever the ground presents a level surface, and is invariably accompanied by such rare plants as *Juncus alpinus*, *Gentiana tenella*, &c. *C. censisa* is peculiarly adapted for the rockery, where it should be grown in a peaty soil, with which granite chips and fragments of slate have been freely mixed. It should be fully exposed to the sun's rays and protected from excessive moisture in winter. It forms dense tufts of small hairy leaves surmounted by numerous lilac-purple flowers, which continue from June to August. It is readily increased by division.

C. EXCISA.—One of the most curious and interesting of the alpine Bellflowers, and one of the easiest to cultivate. It is sparingly distributed in a wild state, there being only three localities in Switzerland where it is found in any quantity, one of the best being the Simplon pass at nearly 8000 feet above sea level. It is found chiefly in the low dry store walls skirting the road, where it may be seen bursting out of every crevice, the wiry stems

laden with their curious tubular, bell-shaped flowers, between each of the lobes of which will be found a small hole resembling a punched tram-ticket. We have established large patches of this species in gritty soil, and after planting laying a largish stone over the plant, around the edges of which the young shoots soon make their appearance. The flowers are violet-purple and are produced in great abundance. It flowers in June and July and is easily increased by cuttings or division.

C. FRAGILIS.—A very beautiful dwarf alpine species from Naples, Sicily, &c., and a near ally of the popular *C. isophylla*. The stems are extremely brittle, abounding in a milky juice, which exudes freely on their being bruised. It forms tufts of long straggling stems from a common rootstock, and so long and free-flowering are these branches, that this species is very advantageously used as a basket plant for the greenhouse and conservatory, where during summer the abundance of saucer-shaped blue and white flowers is really very effective. The plant known in gardens as *fragilis hirsuta* is a variety of *C. garganica*, from which *fragilis* differs in its much more fleshy and firmer leaves, decurrent stems and longer sepals, with prominent midrib. It requires a dry sunny spot on the rockery in light, gritty soil. The young growths strike readily in a cold frame under a bell-glass, or it may be raised from seeds.

C. GARGANICA, a charming little species (here figured), is well worth a corner on every rockery. It is one of our prettiest and most abundant flowering Bellflowers, and with its variety *hirsuta* forms a most desirable pair. *C. garganica* is often confounded with *C. Portenschlagiana* or *muralis*, from which it differs by its smaller leaves, smaller flowers, in which the tube is entirely absent, the segments being divided nearly to the base, and always flat. The habit, as in the last, is spreading from a common centre. It is much used for baskets in the greenhouse.

C. ISOPHYLLA and its variety *alba*, although perfectly hardy in the open air, are more popular as basket plants for the greenhouse. It is a lovely free-flowering species. It differs from *C. fragilis* by its diffuse, more or less descending stems, larger and softer somewhat hairy leaves, and large flat flowers. Like most of the Campanulas, it is of easy culture, and with ordinary care it will thrive and flower freely in any sunny window. To grow it to the best advantage on the rockery, it should be planted so that the stems may hang over a ledge, and in this way the masses of blue and white flowers are extremely effective. It is a native of Italy, flowers with us throughout the summer, and may be increased readily by cuttings of the young shoots.

C. PORTENSCHLAGIANA.—This species, as noted above, is often confused with *garganica*. It differs, however, from this in having running underground stems, by means of which it forms large dense tufts of dark green glabrous leaves, almost round, and with deeply crenated margins. The flowers, which are produced in abundance during May, June, and July, are distinctly bell-shaped, with a long tube, and of a violet-purple colour. It is a native of Dalmatia and is readily increased by division. *C. muralis* is a synonym.

C. PULLA is a very popular rock plant, and one of the loveliest of alpine Bellflowers. When well established, it soon, by means of its numerous underground stems, forms large patches, which during summer produce innumerable deep blue flowers. This species, with *C. turbinata*, *carpatica*, &c., has produced the lovely *G. F. Wilson*, *haylodensis*, &c., all of which are of immense interest to the lover of hardy flowers. A native of the Tyrol, it flowers throughout summer, and thrives best in a calcareous soil. In the south at any rate it likes shade.

C. PUSILLA.—This appears to be a very variable species, and is variously known in gardens as *pumila*, *caespitosa*, *linifolia*, *valdensis*, &c. The form shown in the accompanying coloured plate is *C. caespitosa* of Villars, not of Scopoli, which is an entirely distinct species, and perhaps one of the rarest in cultivation. The plant herewith figured

may best be described as a robust form of the very common *C. pusilla*, a plant that does equally well in the flower as in the rock garden, and never fails with its abundance of pretty blue and white bells. In its most common form it is a dwarf creeping plant, forming tufts of oval-crenated leaves, very pale green, from which spring the hundreds of flowers which adorn it all through the summer months. Nyman, in "Conspetus Europæus," unfortunately separates Villars' plant from *C. pusilla*, placing it as a variety. This is very confusing, seeing that he already used the name for a distinct plant. And further, we believe that Villars' plant is simply *C. pusilla*, carried by floods into the plains and low-lying grounds where it naturally assumes a more robust growth. In the various districts of Switzerland, where it is found in plenty, it is most variable in height, size of leaves and flowers, and not unfrequently we found the pure white form wild. Increased by division and seeds.

C. RAINERI is a rare and handsome plant when one happens to get it true, but just now there seem to be numerous spurious forms about, so that it is difficult to know what is and what is not true *Raineri*. These forms, some few of which are really charming plants, look as if they were hybrids with *C. pusilla*, and in all cases are certainly more easily managed, and flower more profusely than we ever remember to have seen the typical plant. It is somewhat curious to note that all these probable hybrids have yellowish leaves much the same as we get in *G. F. Wilson*, which would seem to point conclusively to *C. pusilla*. The flowers of the true *C. Raineri* are large, flat, and of a fine bluish violet colour, entirely covering the plant when open. The leaves are downy, nearly round, and dark green. It may be increased by cuttings, and is a native of the Italian Tyrol, &c. Flowering July and August.

C. TOMMASINIANA.—This is one of the most distinct and prettiest of the dwarf *Campanulas*, equally at home in the flower border or overhanging ledges on the rockery, where it is always attractive during the flowering season. It is a species well worth noting, perfectly easy to manage, and flowers freely. It forms dense tufts from which spring innumerable wiry leafy stems about a foot long, gracefully arched, and from the axils of all the upper leaves pairs of deep blue narrow tubular flowers are produced, which at once mark it as something out of the common. The leaves are narrow and sharply serrated. It flowers all summer and is a native of Lake Maggiore. Readily increased by cuttings of the young growths or by division.

C. WALDSTEINIANA is a real alpine species, dwarf and very pretty when doing well on the rockery. It rarely exceeds 6 inches in height, the wiry stems being clothed with narrow glaucous leaves and surmounted with small deep blue upright flowers. It requires a sunny spot in rich gritty soil, and flowers from July to September. It is a native of the S. and E. Alps, Transylvania, &c., and is readily increased by cuttings or division.

D. K.

Ivy edgings.—A very interesting note upon Ivy edgings and carpetings appears in *THE GARDEN*, December 17, 1892 (p. 531), and when a good strong-growing variety is selected, few things make a finer edging than the Ivy. The kinds mentioned by "A." are all of great value for this purpose, but I should like to add one other, namely, *madeirensis variegata*, which, except in very cold weather, succeeds well, and the variegation of its leaves is bright and distinct, creamy yellow, blotched with green. In the nursery of Messrs. C. Lee and Son, at Isleworth, good use is made of this Ivy as an edging. It seldom gets cut by the frost, and the agreeable colouring of its leafage is retained throughout the year. The Irish Ivy is, of course, of much value. It is the best for most purposes, and then there are the narrow-leaved kinds, as *digitata*, a very charming Ivy, particularly adapted for narrow margins, as stated by "A." *H. dentata*, the largest leaved of all the Ivies, is strikingly handsome when tumbling

over old roots, hiding an unsightly fence, or mounting the brickwork of some artificial ruin, as at Gunnersbury House Gardens, Acton. When good plants are planted, they soon become established, and quickly cover space with their broad ample foliage of an intense green colour. All Ivies like damp, especially the little tender variegated kinds, that are interesting, however, only to those who wish to simply make a collection.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

Up to Christmas-time there was an abundance of all green vegetables, but if the present weather continues much longer, or even up to the time this appears in print, vegetables cannot but be cut hard, conditions which will make it all the more desirable to prepare for forcing so as to make a change in the ordinary run of vegetables procured from the open. Root crops will now be more needed, and although the palate soon tires of these, yet they make a change. *Salsify* and *Scorzenera* should now be in good condition. A layer of litter put on some time since will enable the roots to be dug at weekly or fortnightly intervals. Roots that are being dug now are much better in flavour than any dug early in the autumn and stored. It is to be hoped that good care has been taken to well protect all Potatoes, whether for seed or eating. Nothing short of a good layer of litter over the soil where the tubers are pitted in the open will save them. A layer of rough and dry litter will turn a lot of frost, whereas with only a soil outer covering it penetrates rapidly.

MAKING HOTBEDS.—Hotbeds which are now being made up will require a greater depth of fermenting material than later on in the season. For the forcing of Carrots and Radishes the greater bulk of the material used should be tree leaves if possible, with about a third of fresh stable litter. When litter has to be depended upon solely, see that it is well prepared beforehand by turning occasionally until the violent heat is well expended. Allowing it to remain in a heap until it becomes white in the centre is to spoil it, for if allowed to reach this state the heat will not keep up when the bed is made. The preparation is the most essential part in the formation of hotbeds.

FORCING CARROTS.—It is now time a start was made in the forcing of young Carrots. Where plenty of tree leaves has been collected this will form the bulk of the medium for heating, a third of fresh stable litter giving it the necessary stimulus of keeping up a steady heat when made up. A two-light frame will afford a supply for a small family. The bed must be made quite firm, from 3 feet to 4 feet in depth. If the frame which it is intended to put on is deep, fill in some more litter before placing in the soil, the surface of which should be within 6 inches of the glass. The soil to the depth of 6 inches must also be light and friable, with a fair addition of leaf soil. Sow in shallow drills 6 inches apart, scattering the seed in thinly. If sown at all thickly it necessitates a lot of unnecessary thinning out, and which is apt to unduly disturb those left. Keep the frame rather close except when the sun is shining, when a little ventilation at the back will prevent the temperature rising too high. By keeping the soil fairly moist after the seedlings are through and also carefully ventilating, a supply of young and tender Carrots will soon be had.

FORCING RADISHES.—A start may also well be made in getting some early Radishes. These are sometimes sown with the Carrots in intermediate rows, but they are best kept apart, as, on account of their early germination, they need more air. They may well be sown between the rows of Potatoes where forcing of these is about to be carried on with the aid of hotbeds. In these cases draw a shallow drill intermediate between the Potatoes, as they are less likely to interfere with the Potatoes as when sown broad-cast. A frame similar to that for Carrots is needed, or for a

small family a three-light frame could be divided between the two. There are now some very early dwarf-topped Turnip varieties, which are better for early forcing than the long-rooted. The soil for Radishes should be kept fairly moist at all times, or the roots will be hot and tough.

A. YOUNG.

FRUIT HOUSES.

EARLIEST PEACHES.—These are making fairly good progress, and the American varieties, notably *Waterloo* and *Hale's Early*, have shed fewer buds prematurely than usual. At this time of year, and at all times when the flowers are none too plentiful, extra pains ought to be taken in fertilising them as fast as they are fit. Towards midday, or when the pollen is thoroughly dry, go over the trees and lightly touch up the flowers either with a camel's-hair brush or, better still, as being the more readily used, a rabbit's tail fixed to a long stake, the aim being to carry as much of the pollen as possible to the moist stigmas. Later on, all that is necessary is to smartly tap the trellises and trees, this effectually distributing the pollen, enough of this lodging on the female organs to effect a good set. The large-flowered varieties are generally deficient in pollen, and for this reason the smaller-flowered sorts, and which are abundantly charged with it, should, in the case of the former being in the same house, be made to assist in effecting a good set, the trees being simply fertilised alternately. Disbudding, or the act of removing superfluous wood-growths, should be done gradually. A young growth should be laid in where possible from the base of each fruiting shoot and also one from the point, one from near the centre also being reserved if there is good room for laying in more bearing wood for next season. At each point where fruit has set leave a shoot, stopping this "foster nurse" at the fourth joint, but removing it later on if the fruit is pulled off during the thinning-out process. Plants in pots are frequently the most free-flowering and the freest to set, and thinning out of the fruit ought to commence rather early in this case. After the flowering period is over, recommence overhead syringings and raise the temperature 5° all round, or say to 50° by night, rising to 55° or 60° in the daytime.

SUCCESSIONAL HOUSES.—If trees of Peaches and Nectarines in pots or planted out were started early in December, then ought another house to be shut up early in January, this also being a good time to start forcing in all cases where ripe fruit is not wanted much before the middle of May. First take the precaution of well probing the borders, a good soaking of tepid soft water being given in the case of comparatively new borders found in a somewhat dry state, but older or much exhausted borders should have a soaking of fairly strong liquid manure also warmed up by having hot water added. If not already done, lightly fork away the surface soil down to the roots, this being followed by a top-dressing of fresh loam and short manure, bone-meal and wood ashes also being added with advantage. Avoid hard forcing, from 45° to 50° being ample by night, increasing to 50° in the daytime, rising to 55° with sun heat. In the later houses there should be no undue delay in getting the pruning, cleaning, and re-tying done. If the more vigorous trees have not been partially or wholly lifted, they must be only lightly pruned, or otherwise they will grow even more luxuriantly this season. Especially the long and, it may be, not any too well ripened wood on young trees should be reserved to its full length, and if young shoots are freely laid in during the summer this will greatly increase the productive area of the trees, and at the same time effectually check grossness. Also be somewhat chary in cutting out the short spurs or spray sometimes to be found on quite the strongest trees, as these not unfrequently hold their buds and produce fruit when the stronger shoots fail completely. Medium-sized shoots or those well furnished with triple buds, each having a central wood-bud, will be strengthened by being cut back to about half their length, two-thirds

being left of similarly well-furnished strong growths, or any, say, that are 2 feet and upwards in length, and yet not gross. Shoots with wood-buds at their points only should not be shortened, as there ought always to be leafy growth beyond swelling fruit. Freely thin out and foreshorten large old trees, or any that have nearly or quite filled their allotted space, this being necessary in order to promote and sustain the production of young growth much nearer the stems and main branches. To sum up the theory and process of pruning in a few words, be very sparing of the knife in the case of vigorous trees for which there is and ought always to be good room for extension, but prune freely when the trees require strengthening and are at all crowded.

INSECT PESTS.—The slow process of scrubbing and painting with Gishurst compound or any other strong mixture the trees infested with green and black-fly, scale and mealy bug is more simply and safely done by means of petroleum and hot water. This, it should be added for the benefit of new readers, ought to be applied as follows: To every 3 gallons of water heated to 120° add a lump of soft soap about the size of a hen's egg, and 6 ozs. or three wine-glassfuls of ordinary petroleum or paraffin, as usually, but erroneously termed. There is no possibility of making these ingredients mix properly, the oil invariably floating on the top. In order to prevent this and the risks of syringing with raw petroleum, discharge every second syringeful forcibly back into the can, and with the other thoroughly wet every part of the tree. Use the mixture freely, as what reaches the walls and runs down into the border will do good rather than harm, destroying eggs and insects there lodged. Repeat the dose if the first application fails to dislodge all the scale. The trees may be freely syringed a few hours later on with clear water, but this is not absolutely necessary if the proper precautions of keeping the petroleum mixed with the water are taken.

EARLY MELONS.—If a few Melons are wanted extra early, they can best be obtained from pot plants, but can be grown, if preferred, in the usual way. In any case sow seed of well-tried varieties at once. Lightly drain 3-inch pots and fill up with good loam. Sink two seeds, points uppermost, rather deeply in this, and plunge in a brisk bottom-heat. Failing the latter, set the pots in evaporating troughs filled with ashes or cocoa-nut fibre and water very carefully, especially if the pots are plunged in moist heating material. At first the seedlings will be very feeble. Raise them well up to the light, remove the weaker of the plants where there are two, and support that reserved with a stake. At no time ought the temperature to fall much below 70°; keep the Melons well away from insect-infested stove plants, and shift into 6-inch pots before they become much root-bound.

PRACTICAL.

ORCHIDS.

I FIND that a number of readers of THE GARDEN are Orchid growers on a small scale. Such amateur cultivators cannot fully carry out the instructions given, simply because they do not possess the means of doing so. I was looking over a nice lot of Orchids the other day, and found one small house only set apart for the entire collection, cool Orchids such as the New Grenadan *Odontoglossums*, *Dendrobiums* from the hot districts of India, and *Lælia purpurata* from the equatorial regions of South America all growing together, and they were looking much better than one could have expected. The house was kept warmer than the cool house usually is, and not quite so warm as the Cattleya house. In a case of this kind the gardener has a good deal of scope in arranging the plants in positions most suitable for them. The *Lælias* and *Dendrobiums* should be placed in the sunniest, warmest part of the house, selecting the shadiest part for the *Odontoglossums* and such fine Orchids as *Epidendrum vitellinum majus*. A year's work and observation in such a house as this would result in the acquisition of much useful knowledge as to the capabilities of certain Orchids

to maintain their vigour in a higher or lower temperature than we have hitherto thought essential to their perfect development. I think a good deal depends upon the treatment the plants receive from the time they are imported. Were I about to try experiments with Orchids I would purchase newly-imported plants and give them at once the new treatment, whether it was cool Orchids in a warmer house, or warm house Orchids in a cooler temperature than they had hitherto been grown in. Another point in their culture well worth considering is this. Orchids will grow well in a house not quite suited to them for two, three, or four years, but after that time they will decline in vigour, and may require different treatment. For instance, *Vanda cœrulea* will succeed well and produce grand spikes in a lower temperature than *Cattleyas* are usually grown in, but their native vigour declines in this temperature, and they will do better in a house 10° warmer. The best position for this lovely *Vanda* is near the roof glass, and our plants which declined in the *Cattleya* house have improved in a warmer one. Those who have not had very much experience with Orchids will have to learn that certain species cannot be permanently established in this country; they will grow well for a time, but by and by they gradually decline until they are not worth growing. Amongst *Dendrobiums* the lovely *D. Wardianum* will not keep up the same constitutional vigour year after year, while many others will do so, but it is a great boon to be able to purchase newly-imported plants at a cheap rate.

We are now pushing on the earliest *Dendrobiums* in a warm house; those to flower later are still where they have quite a low temperature. The best *Dendrobiums* to keep up a succession of bloom from January until June are *D. nobile*, now to be found in numerous beautiful varieties, *D. Ainsworthi* and its varieties, of which *D. Leechianum* and *D. splendissimum* are the most beautiful; they vary according to the quality of the seed or pollen-bearing parent; the specific varieties from which they have been derived are *D. nobile* and *D. aureum*. *D. Wardianum* is not excelled in beauty by any *Dendrobe*. We are also growing some of *D. Devonianum*, a lovely species, as also *D. Falconeri*, but the flowers are not so long-lasting, and they are not so well adapted for cutting. These plants can never be flowered well unless much attention has been paid to them during the growing season, but this has been fully discussed at the proper time. Another point is the starting them gradually into growth; the plants ought not to be taken from a comparatively cool house into one with a high temperature, but this is sometimes done, and the flowers open irregularly along the length of the stems, and some of them do not develop at all. My plan is to put a few plants into a vinery or Peach house and start them gently in a temperature of 45° to 50°, and when they have made some growth they are placed in the *Cattleya* house where the temperature is from 55° to 60°. A number of *Dendrobiums* are kept in this temperature all through the winter; all such as *D. Farmeri*, *D. Paxtoni*, *D. thysiflorum*, *D. Bensoni*, *D. Brymerianum*, &c., pass through their resting period in the *Cattleya* house. We are now working in the *Cattleya* house, and find some of the plants need surface dressing, and any of them that need repotting are also seen to, but our main work at this season is to see that everything is made quite clean. The plants of *C. labiata* which have now passed out of bloom must be kept dry at the roots; at least, sufficiently so to prevent their starting prematurely into growth. *C. Warneri* has started to grow, or at least the pseudo-bulbs are in course of development, but they are not yet making root-action very freely, and must not have too much water. The white varieties of *Lælia anceps*, now in flower, are very beautiful at this season of the year arranged with the brighter coloured varieties, such as *L. anceps Barkeri*. I find the white-flowered varieties are quite as free-flowering as the others, producing four and five blooms on a spike. We report the

plants about every second year generally in February, and *Cattleya labiata Warneri* at the same time, and we have had much success with both of them. The white varieties of *Lælia anceps* are treated so that roots are formed freely outside of the flower-pots, and in repotting them care is taken not to injure those roots.

The weather as I write these lines is very severe, and much care is necessary to see that the boilers are kept steadily going night and day without over-heating the houses, admitting air if possible at midday. J. DOUGLAS.

PLANT HOUSES.

THE severe weather we are now experiencing pretty generally throughout the country behoves us to look well to the temperatures of our plant houses. To endeavour to maintain the same temperature in any given case, as during the preceding mild weather, means, of course, the consumption of a considerably larger quantity of fuel. In doing this I consider a great mistake is made, for not only is it an absolute waste of coal or coke (as the case may be), but at the same time the atmosphere is not nearly so congenial to plant life on the whole. By lowering the temperatures all round from 3° to 5° when the frost is unusually severe, or the wind blowing pretty strongly and that mostly from the east or north-east, no harm will accrue; but, on the other hand, the plants will rather benefit thereby. More often than not when the heating apparatus is too severely taxed, there comes a breakdown in the weakest parts. This will occur, as all of us know who are practically conversant with hot-water heating in detail, more frequently where the amount of piping is altogether inadequate to fulfil the work expected from it, thus demonstrating in a visible manner the false economy of providing too few pipes, which results in more labour for those stoking the fires, and of course the risk of injury in the event of a breakdown in the pipes or boiler, the latter itself often being insufficient in heating power also. Rather than be compelled to depend upon one boiler of large size alone, I would much prefer two of medium size, the risk of injury thereby being lessened. This fact is now being recognised both in private gardens and large trade establishments, and that none too soon, the duplex system being much preferable.

Reverting to temperatures in particular, let me say in the case of the cold greenhouse that 35° in the morning is much better than 45°. It may be urged that this is running dangerously near to the freezing point, but with good management and a thorough knowledge gained in any case by close observation, this is, or may be, so minimised as to lead to no bad results. If the house be a span or a lean-to with sidelights, these sidelights should be covered with mats or canvas coverings; in so doing at least 5° of frost may be guarded against. What I mean by this is that if the glass outside be standing at 12° or 20° of frost it will only count as 17° or 15° of frost, and even be found to give better results when the wind is strong. Low-roofed houses that can be conveniently covered from nightfall to daybreak will give even better results than side coverings, whilst in any case the atmosphere inside is more congenial to the plants. I have often noted that when a greenhouse is well protected it does not take any great amount of heat in the pipes to keep everything safe, provided there are plenty of them. There will usually be one spot in a house a little warmer than another part. Thus in the greenhouse *Statice* may be placed in the warmest part, whilst in the stove the *Ixoras* would occupy a similar position. Where the temperature cannot be kept much above freezing point in severe weather, great care should be taken with the watering, all kinds of plants being kept on the dry side in case of frost touching them.

In the temperate house or the stove the same drop will do no harm from what has hitherto been the ruling temperature. The previous recommendations as to covering being also carried out, the variation will be much less in the temperature.

With the increased heat in the pipes there will be a need of the syringe being employed more freely than in mild and damp weather, but not heavily whilst the evaporating troughs should be kept filled up daily. Where plants stand immediately over pipes at such times there will be the risk of increase amongst the insect pests, particularly in the case of thrips and red spider. Those of us who come within the fog radius, either of London or the other large cities, have further to contend with this enemy to vegetation. Only by a practical experience of the ill effects produced by these noxious fogs can any real idea be formed of this formidable antagonist against which we have to cope. For the benefit of those who have to fight against this enemy without having had much previous experience of it, I would advise that the atmospheric moisture be slightly increased and the temperature a few degrees (say 3°) also. Some may think that this does not accord with my previous advice, but it must be borne in mind that we do not have the fogs when there is a keen wind blowing and but rarely when the frost is severe. They occur more when a thaw comes on, or when there is only a few degrees of frost.

Cold frames and pits should have been well protected before the frost became very severe. In any case where there is a suspicion of harm being already done, do not uncover immediately there is a change in the weather, but rather defer the work for a few days. Exposure too soon in such a case only intensifies the injury. Do not when first uncovered give any air either. Thus far with from 18° to 24° of frost we have kept it entirely out of a four-light cold pit with 4½-inch brick sides, by adding all round the same a lining of dry litter about 10 inches in thickness, this being firmly trodden down, the glass also covered with four mats thick and litter besides, all being dry when used. The fact of using coverings or any protecting material quite dry makes an immense amount of difference. In this pit Roman Hyacinths were coming into bloom when removed a few days back to keep up the succession, having come to no harm after a fortnight's covering up, and in no case was the soil frozen or the foliage either. Side protection adds greatly to the safety of cold pits and frames where the object is to exclude frost if possible, and by means of dry litter it is easily applied and can be kept in position without any difficulty.

J. HUDSON.

ORCHIDS.

ODONTOGLOSSUM NÆVIUM.

"W. P." sends me some flowers which he says are those of the above. They are, however, those of *O. blandum*. Mr. Sander, in the "Reichenbachia," where *O. nævium* is figured, t. 44, says *O. blandum* is the nearest approach to *O. nævium*. He also gives the credit of first introducing *O. nævium* to the Messrs. Rollisson. *O. nævium* is also figured in vi., t. 7, of Warner's "Select Orchidaceous Plants" from a specimen which flowered in Mr. Day's collection at Tottenham. He gives the credit of its discovery to M. Linden, and it was in M. Linden's establishment that I first saw the species. I never heard a word about its first introduction whilst in the service of Messrs. Rollisson, which I certainly should have done had they introduced this fine plant, which has been so diligently searched for by all recent collectors in Colombia. No collector was again, however, able to discover the spot where it grew until some one in the employ of Mr. Sander sent it home about eight years ago, since which time he has been growing it in his establishment in quantity. This plant was very rare in the collections of this country for some years, and although Mr. Sander objects to the name of *nævium majus* being applied to it, I know full well there were plants that

were so named in the old time in gardens, to distinguish them as fine varieties. A very fine form of the majus variety existed in Mr. Turner's collection at Pendlebury, Manchester, and it frequently appeared at the exhibitions held in that city. *Odontoglossum nævium* in my estimation stands unrivalled for its beauty, and it is singular the amount of confusion which appears to have been connected with it. I saw the plant exhibited by the Messrs. Loddiges in 1851, and I have never thought anyone would or could make any mistake in the plant. The scape is slender and many-flowered, the sepals and petals being almost equal, narrow and pointed, much undulated, white, profusely dotted and spotted with rich rosy crimson; lip narrow, pointed like the petals, and of the same colour, with the addition of a blotch of yellow at the base, where it is slightly broader. The usual time for this plant to flower is about the months of April or May, and the blooms last in full perfection for a long time, and that, too, without any detriment to the plants. I am not aware at what altitude the species is found. In the early days, when it was extremely valuable, one was afraid to venture upon a very low temperature for it, and the plant now, although existing in our gardens in greater numbers than it ever did, is still rather expensive. Nevertheless, a temperature having a minimum of about 48° will suit it well, and the heat may rise in the daytime some 5° or 10° according to the season of the year. In the summer-time during the very hot days the heat must be kept down as much as possible, but at all seasons the air must be kept in a moist condition, and the plant, although requiring less moisture in the winter, must not by any means be allowed to become dry at the roots. The soil should consist of about equal parts of good brown peat fibre, from which all the smaller particles have been beaten, and of chopped clean Sphagnum Moss. This should be thoroughly incorporated, and the plant when potted should be elevated slightly above the pot's rim. *Odontoglossums* do not like tobacco smoke, and the particular one now under consideration least of all.

WM. HUGH GOWER.

Phalænopsis Sanderiana alba. — Two blooms of this plant have been sent me by the Hon. Miss Winn, of Nostell Priory. The flowers now before me are of medium size and perfectly white, saving a few dark spots at the base of the lip, where there is also a little pale yellow. To speak the truth, I do not like the white *Sanderiana* so well as the typical plant, but yet it is a beautiful variety and is well deserving attention. — W. H. G.

Odontoglossum sceptrum. — Mr. Cypher sends me a bloom of this very distinct plant. The flower sent appears to me to be quite distinct from that of *O. luteo-purpureum*, with which it is usually associated. Mr. Cypher says the spike of bloom is bearing twenty flowers. Each bloom measures upwards of 2½ inches across, regular in outline, the sepals rich chestnut, with a few transverse streaks of golden yellow, the petals much broader, toothed on the edges, golden yellow, dotted with chestnut-brown near the base, and blotched with the same bright chestnut at the tips; lip heavily fringed at the margin, rich yellow, with a large blotch of bright chestnut in front. — W. H. G.

Lælia anceps Percivaliana. — G. James says he now has a plant of this with twelve flowers. The flower sent is the best form which has come under my notice. It was named in honour of the late Mr. Percival, who, with Mr. Hardy, had the best and most extensive collection of *Lælia* and *Cattleyas* in the country. When the

white-flowered forms of this species get well established in a little more warmth than is necessary for the typical plant, I think it will be found they will flower freely enough. — W.

Lælia anceps Stella. — G. James sends me a flower asking if it is not a variety of *L. anceps Dawsoni*. Only one plant of this was imported by Messrs. Low and Co., and it has never been found since. As all the plants of *Dawsoni* in this country are divisions from that one importation, G. James will see that there can be no varieties of it. The flower sent is an exquisite one, large and well formed, and I take it to be a good form of *Stella*. — G.

Resting Calanthes. — When speaking of *Calanthes* one is generally understood to refer to those of the *vestita* and *Veitchi* sections. My reason for calling attention to them now is to give a note of warning on their resting. Plants of this nature as they go out of bloom are apt to be cast on one side and almost forgotten until it is thought growth should be commencing. The *Calanthes* of this section are naturally heat-loving subjects, so to place them in a low temperature after the flowers are over is not at all a safe proceeding. I grow a large batch, and I find that they start into growth more freely after they have been wintered in a temperature of not less than 60° or 65°. During the daytime ours have considerably more than this, as they are wintered on a shelf in a lean-to stove against the back wall close up to the light. They are also kept in their pots, as I find it better to keep them thus than to turn them out of the pots and store closely together in boxes. By leaving them undisturbed the eyes certainly start more freely. — A. Y.

Cypripedium Parishii (B. W.). — This is the name of your flower. It is a fair variety, with light yellowish green sepals without any stripes or marks, the same colour being continued nearly half-way down the petals, which are some 5 inches long, with deep purple tints and a few hairy tufts at the edges; lip green. It was first found by Mr. Parish over thirty years ago, but it was not until about twenty-five years ago that it was known in our gardens. — W. H. G.

FLOWER GARDEN.

LATE VARIETIES OF LILIUM SPECIOSUM AND LILIUM LONGIFLORUM.

TO THE EDITOR OF THE GARDEN.

SIR, — I have now in my room in flower the variety of *L. speciosum roseum* which I lately described in THE GARDEN, Vol. XLII, p. 468, as a late form with a touch of rubrum blood in it. It is a dwarf plant, about 2 feet high (pot included); three flowers are out, two are over, and one bud is unopened. It came into flower just before Christmas Day; it bears a fine symmetrical flower with pale centre, and very pleasing light blush-rose-coloured petals, margined with white, and a white lip; the central green rays are deeply coloured and very translucent. This is the latest form of *L. speciosum* which I have noticed, and it is specially valuable for flowering at this late season. The variety *nanum*, described by me in the same paper, I saw in flower during December. It bears a highly coloured bud and flower broad-petalled; it has a very dwarf symmetrical habit, and makes an excellent pot plant for late flowering. The variety *cruentum* was over about the middle of December. These three varieties will carry on under glass the flowering of the *speciosum* family during the months of November, December, and January.

Lilium formosanum, a variety of the longiflorum group, is also a most valuable Lily for indoor culture. It is described by me in my paper on this group in THE GARDEN, Vol. XL, p. 442. A plant of this Lily was put under

glass about this time last year. On April 26 it was in flower. A fine plant with a single stem 40 inches high bore about six flowers of fine substance 6 inches long, with a perianth expanse of 6 inches. After flowering it was (still undisturbed in the pot) turned out into the garden in a south aspect and well watered. It soon shot again with three strong stems, and on Sept. 20 showed ten flower-buds, which expanded under glass in November and December, beside smaller side growths. One bulb therefrom has produced in one season about sixteen flowers, and certainly three good-sized bulbs with several smaller ones will be found on repotting. One of the prettiest sights I have ever seen was early in October last, when a number of *Lilium Takesima* were in flower under glass. Thus protected, the flowers have

FLOWER GARDEN NOTES.

Not much work is possible in the flower garden so early in the year unless the weather prove exceptionally mild, but anything that can be done may be pushed forward. The pruning of all conifers and evergreen shrubs that occupy prominent positions either by the side of walks or in mixed borders, and that back up the taller herbaceous flowers and flowering deciduous shrubs, can be done at once. This work must be entrusted to a thoroughly competent workman and be performed with care and judgment. A special point is to make this an annual business, as if left for a couple of seasons the plants are rendered stiff and formal by the amount of cutting necessary to keep them within bounds. Dot plants of the dwarf and bushy conifers are very nice in large beds, and can be retained in such positions for many years. The space between them can be summer-bedded, or,

flowering season. Thus there was a special note in favour of an increased stock of the white Snapdragon, a really good thing that was flowering all through the season and was very useful in a cut state. Cuttings may be put in towards the end of January, and if shifted on as soon as struck will make nice plants for turning out in April. The white *Pyrethrum* above mentioned (*Mont Blanc*) is another very useful plant; those who already have a stock will do well to increase it by division. Three *Starworts* that were specially noted—*acris*, *astræa*, and *paniculatus blandus*—must certainly be increased to the exclusion of varieties of less merit. *Acris* would make a grand bed associated with summer-flowering *Chrysanthemums* with variegated Ribbon Grass, or as a groundwork to large clumps of *Fuchsia gracilis*. The *Spiræas* most acceptable for cutting, the lightest and most feathery, were *palmata alba* and *astilboides*. If not already done, crowns can be carefully divided and replanted at once. A hint as to *S. astilboides* may not be out of place: it does not take kindly to the herbaceous border. I find it does much better in a cool moist spot under a north-west wall.

Autumn-planted stuff to be treated as annuals, especially border Carnations, are looking remarkably well, this season's losses being few and far between. From the many named sorts now in cultivation and from the thousands of seedlings annually planted in many gardens we get splendid flowers, but the constitution of the plants is not always up to the mark, and no sort, however good the flower may be, is worth perpetuating for border work if it is of thin, weedy, weakly habit. I look upon Mrs. Reynolds Hole, Raby Castle and Mme. Roland in their respective colours as magnificent border Carnations, fulfilling all requirements. Those who are compelled to give up the old crimson Clove on account of the disease would do well to give Mme. Roland a trial. It is very similar in colour, of splendid constitution, very free and altogether a very valuable sort.

When touching on shrubs earlier in these notes I omitted to mention that it is advisable when a spell of sharp weather sets in to see that protection is afforded to anything that may require it. That graceful and very ornamental Grass (*Arundo conspicua*), for instance, may pass unharmed through several seasons, to be very severely crippled, if not killed, after an exceptionally hard winter. A stout stake should be driven down as near the centre of the plant as possible, and the foliage be gathered up and tied to the same. It forms a bundle of "extinguisher" shape, not very elegant in appearance, but the plant is thereby preserved through the most trying weather—sufficient compensation for the short season of ugliness. Half-hardy plants on walls, as *Aloysias*, and in the open, as the *Eucalypti*, will also want matting over if they are to remain outside. Other frosty weather work may be the mulching of herbaceous borders (good rotten manure and leaf-soil in equal parts will answer the purpose well) and the preparation of labels large and small. Where they are likely to be required, stakes or small irons (the latter are best, as they do not rot in the ground or are liable to be scuffed up and carried away) should be used for clumps of bulbs, and in fact all bulbous plants. These latter are sometimes planted in other sites than *bona fide* herbaceous beds, and if they are late in starting, they may, if not marked, be injured to a considerable extent if the remainder of the bed or border about them is to be planted before they show above ground.

E. BURRELL.

Claremont.

A GROWER of Carnations near Nashville, Tennessee, says the *American Florist*, sets his plants in the open ground in baskets about 4 inches in diameter made from common wire fencing with a 2-inch mesh. The baskets are made by cutting the fencing into strips about 12 inches long and 4 inches wide, bringing the ends together and folding one end in. Small plants are set out in these baskets in the spring, where they remain in the open ground all summer, and in the autumn the basket is lifted with the plant and transferred to the greenhouse



The final effect: The trunk of the tree covered with plants. (See p. 20.)

quite a beautiful rosy tinge outside the petals, instead of the usual faint chocolate tint, and being well grown and of good size and substance excited in me a great admiration and love for this beautiful and stately late variety of the longiflorum group. I was also greatly pleased this summer in flowering *Lilium elegans Wilsoni*, one of the finest of the *Thunbergianum* group, of erect habit, late flowering, with large apricot-coloured cupped blooms. I have not seen this Lily for nearly twenty years.

Lilium Colchesteri, or *odorum*, makes an excellent pot plant; its habit is somewhat dwarf, and it throws under glass three to six very large symmetrical cream-coloured flowers, which contrast very vividly with the bright chocolate-tinted anthers. Out of doors this plant is often spoilt by the attacks of insect enemies.

ALEXANDER WALLACE, M.D.

better still, filled in with some nice herbaceous plants in variety. Thus, if the little specimen conifers are some 6 feet or 7 feet apart, half way between them might come nice little clumps of rose-pink *Pyrethrum floribundum plenum*, *Mont Blanc* White, one or two good *Spiræas*, scarlet *Lobelias*, or even hardy *Fuchsias*, the rest of the bed being devoted to some dwarfier plant as a groundwork, of which the best of the *Violas* or *Pinks* may be cited as examples. Any work of this kind that may be contemplated could be put in hand at once, weather permitting. Edgings can also be made good, and dwarf hardy plants that are used for the purpose can also be utilized for occasional clumps along the front of herbaceous borders. *Chamomile*, *Thrift*, the dwarf *Veronicas* and *Sedums*, the variegated *Thyme* and *Ajuga reptans* are among the things available for the purpose. It is a good plan to run round the herbaceous borders early in the year to freshen up the memory respecting any matters that were decided on during the previous

bench. The plant thus has the advantage of being bedded out constantly, and is always transplanted with a good ball of soil.

THE CARNATION AND PICOTEE.

We are now preparing the compost for the Carnations and Picotees, to be ready and in good condition for the plants about the end of February or early in March, which is the best time to place them in the pots in which they are to flower. There are many new growers of Carnations and Picotees who are thirsting for information, and even old growers think but little of their plants when they are frozen up in the frames. At that time nothing can be done for them; it is the season of rest, and the plants do not take any harm if they are well established, but severe frosts may be succeeded by mild weather, and it is rather astonishing to see how the green-fly will appear whenever the weather is mild. One would think that exposing the plants to from 10° to 20° of frost several nights and days in succession would destroy this parasite, but it is not so. While severe frosts last we keep the glass lights over the frames, but do not use mats or any kind of covering. I have seen Carnations killed in frames during severe frosts, but never when they have been well established and have been brought up hardy. As soon as our Carnations layers are established after repotting, we pull the lights off the frames every day and all day long if the weather is favourable, the plants thus becoming quite hardy and able to endure bad weather when it comes. On the other hand, if the lights are shut down close at night and but little air is admitted in the daytime, the plants not only become weakly, but they are much more liable to the attacks of green-fly. The only use I make of the glass lights for Carnations in winter is to protect them from drenching rains or drying frost winds; even in cold winds air is admitted by tilting the lights on the side opposite to that from which the wind is blowing. As stated, they do not require any attention in frosty weather; but in continued mild weather it is necessary to look over the plants; perhaps twice during the winter will be enough. The surface of the potting soil needs stirring up; decayed leaves should be removed with a pair of sharp-pointed scissors, and green-fly be brushed off. When the time for repotting the plants arrives, they should be in a healthy growing condition quite free from insect pests. Some of these plants also come in useful to make up blank spaces in the beds out of doors, for out of some hundreds it is unlikely that all will pass through the winter in good condition. Some are badly rooted and may succumb to the vicissitudes of our uncertain winters; others may be killed by the wireworm, a most deadly enemy, but from whatever cause it is well to have a few surplus plants ready to take the place of those that may have failed. Plant them out without disturbing the roots further than may be necessary by turning them out of the pots; press the soil firmly about them, planting rather deeper than they were before. If there is a large collection needing repotting the work should be gone about in a systematic manner. Clean flower-pots should be in readiness and also clean potsherds. We use three sizes of flower-pots, 7 inch, 8-inch, and 9-inch. Two plants are put into one flower-pot. Put about 2 inches of drainage in the largest-sized pots, not so great depth of it in the smaller sizes. A thin layer of fibre from which the clay particles have been shaken should be placed over the drainage. I have used a thin layer of Moss when this could not readily be obtained, for if the finer particles of the potting soil mix with the drainage, the egress of water is arrested and the plants do not succeed so well. Repot the plants rather firmly, and place them under the shelter of glass lights. Sometimes this is not available; in that case it is as well to repot the plants later and place them out of doors at once.

Tree or winter-flowering Carnations require quite different treatment from that described above. As I write these lines we are preparing a small bed of fermenting material in one of the

pits, heated to keep the temperature up to about 50° or 55°. A very high bottom-heat is not needed; it might do harm by causing the cuttings or slips to damp off, but over the hotbed is placed a light and low glass frame. The cutting-pots are plunged in a surface layer of cocoa fibre refuse, and the glass frame by preventing evaporation preserves the cuttings in a plump condition until they have formed roots. If a frame such as I have described is not available, place over the cutting-pots a square or two of glass, just enough to cover them. The glass may rest upon the ends of the labels, which should stand higher out of the pots than the cuttings. The glass becomes damp, and requires to be daily wiped with a dry cloth. The smaller side growths slipped off form roots more quickly than the main thicker ones. If inserted in fine sandy soil they do not take very long to form roots, and when this occurs take them out of the close place in which they have been, and they will gather strength in the freer air of the house. Do not delay potting off the small plants. We plant each one separately in a 2½-inch pot, growing them on for a little while in the hothouse, and gradually inuring them to a greenhouse temperature. Some may say, why grow such a hardy plant as the Carnation in a forcing house during any part of its existence? The reason is plain enough to those who have any knowledge of the method by which a succession of flowers is maintained all the year round or even for part of the year. I am putting in Carnation cuttings now, and will continue to propagate the plants until March. By this means I will have a succession of flowering plants from the time the out-of-door Carnations are over until they come in again next season. It is also a good plan to plant a few of the old plants out of doors in May. They produce a large number of fine flowers in a favourable position against a wall. I am not sure it is necessary to use the qualifying word "favourable," for I well remember even in Scotland to have seen nice flowers produced from some plants trained to a north wall. From May to September all the perpetual flowering Carnations do much better out of doors in a sunny open position than they do under glass. J. DOUGLAS.

BASAL CANKER IN DAFFODILS.

I AM not sure that I can even afford a hint that will be new on this subject, but there are two theories of the cause of the above disease. The first theory is that certain of the Daffodils are tenderer than others, and these, as a matter of fact, are the ones to make their growth earlier. The fresh points of their foliage become seriously nipped by our late frosts; so much so, that though they seem to be making a vigorous start, they die off or turn brown in considerable numbers from the date of such injury. Last year I took up several specimens so affected, and I observed at the time that the bulbs were furnished with plenty of roots, which, as we know, are developed well both as regards quantity and length by the time that the green points show above the surface. But when examined the roots were not then in a healthy state. It seemed almost as if had I dug up the roots a little earlier I might have found them healthy. This suggested to my mind that the roots had begun to go wrong contemporaneously with the frost-bitten and yellow tops. They were of a sickly yellow-brown colour, the points brown or black, just as we may observe young vigorous roots to behave with hundreds of other things which, in reference to their leaves and growing points, have suffered some sudden check. As these Daffodils never again in the season present so healthy an aspect as those which have not been so blighted, I have been supposing that might be the starting point of the basal canker disease. Certain other facts, if they do not positively afford proof on the point, at least show that there may possibly be something tending in that direction. For instance, our Daffodil growers in warmer climates, as in the Scilly Isles and south of Ireland, where they are not so much afflicted with late frosts, experience little or no

thing in the way of basal rot. The earlier kinds, as *pallidus præcox*, *Ard-Righ* and such-like, are those which suffer most; and others—hybrids—with presumably the blood of tenderer species in them, also suffer greatly. I have had a striking instance of collected bulbs, sent from a much warmer climate than this, which had no trace of disease about them, and which, when planted early in the autumn, made a promising show as regards sprouts and roots. All in the early spring turned brown at their tops and ultimately rotted away, so that at the present time, of the hundred or more bulbs, I question whether there is one alive. It may be said that this case of a tender variety can have little or nothing to do with the basal rot as found in well-known hardy kinds. I, however, think otherwise. There may but be the chance, but I think it is reasonable to suppose that our earlier hardy sorts may possess a trace of the blood of these wild or natural varieties of warmer habitats, be they themselves species or otherwise. If, then, in this climate tender and very early sorts do, as a matter of fact, sometimes receive their death blow after having made a good start, as regards a full complement of roots, I think it is not difficult to find out how the other symptoms or results occur.

For instance, if after the tops have well seen the daylight and before they are stricken, the leaves shrinking will act as conductors of wet down to the bulbs, carrying with it possibly something of a fungoid character from the decaying foliage. This might account for the dropsical character of bulbs affected in their first year. I ought perhaps here to say that, inasmuch as I am speaking on the commencement of the disease, I have had in mind all the time bulbs which, so far as could be seen, were perfectly healthy, taking as the strongest proof of such healthiness bulbs distinctly firm all round the base, without any dark spots near the base, with the root ring well defined, and the space inside the wanted ring well filled out and free from cracks. I take it that the rank smell of newly-dug diseased bulbs, their being infested with mites, and those with the more fleshy tunics eaten off around the shoulders or collar of the bulbs, are all the results of the process above described.

Another fact worth notice is that Daffodils the most liable to basal canker have repeatedly been proved to do so much better, and I might almost say to remain exempt from the disease, when grown amidst the roots of shrubs. Such a situation certainly implies a drier soil and a warmer or more protected condition. This may not prove much in favour of the above theory, but we certainly come at some very important facts when of the same batch of bulbs planted at the same time, in the same quality of soil, by the same hands, we have some affected with canker and others free.

There is another fact of which I hardly need remind Daffodil growers, and that is, that after a certain amount of root development, if the roots become injured in a wholesale way, no new roots will push in the same season, and the chances are greatly against the bulb doing otherwise than decaying; and do we not know that the commonest form of decay that we meet with when digging up the bulbs in July is that of basal rot more or less developed, and generally most in the wettest situations?

The object of these remarks is to suggest that Daffodil growers should be on the look out for yellow and flabby sprouts from this time onwards, and that as soon as they are seen, that some of the bulbs should be dug up to possibly verify the fact that good roots have existed. Others should be left having the same symptoms and in the same place, and the results watched with a view to learning whether in midsummer they will show a development of basal rot as we at present know it. All this, however, should follow with bulbs known to have been clean and free from the slightest touch of the disease, for it is obvious that the experiment would be useless were the bulbs of doubtful soundness when planted.

With regard to my second theory of the cause of basal rot, I have not so completely made observa-

tions as in the former, at present there being plenty of room for doubt as to whether certain phenomena are part of symptoms of the disease itself or merely after results of organic decay.

J. Wood.

NOTES ON HARDY PLANTS.

The double blue Hepatica.—This, under special conditions, is already showing colour on flower-stalks an inch to 2 inches long. For a great number of years this kind has been considered difficult to cultivate. I can imagine that it might be so in some gardens where, for instance, the land is of a hot, dry, or calcareous character, but I am certain that with care it may be grown to perfection. As a matter of fact it is a very difficult plant to kill in land of a somewhat free, but moist character, and if once you get the rhizomes well furnished with the long, stringy, and glandular roots, the plants go ahead at a very rapid rate. So much so indeed, that they may with advantage be divided every third or fourth year. The only thing you need to do then will be to divide the roots in late summer, allowing each division a share of the length of rhizome as well as fibre, planting immediately before the glands on the roots dry up. The latter precaution is obviously one requiring little or no care, and yet if in summer you leave the roots exposed for an hour the well-doing of the plants will be seriously retarded, when all might have been prevented by covering the roots for the brief space of time they were out of the ground with a moist cloth.

Tropæolum polyphyllum.—This is certainly a species that may be benefited by a little care at the present season. In very severe weather the peculiar half-tuberous and half-rhizomatous roots are liable to be killed by frost; then there is the fact that these roots, which have the habit of lengthening rapidly, often work their way to near the surface; and still further, established plants push into very early growth, so that in many instances at Christmas the blue-green and pink-tinted sprouts are visible. The help hinted at may be in the form of a thick mulching of cocoa-nut fibre, preferably with a sprinkling of sand in it. It need not be removed later on, but left to decay. The plant is partial to a very dry situation, as implied by light soil and a sunny aspect; hence its great usefulness for the higher parts of sunny rockeries or for training over stones in land naturally sandy. It is, however, in the former style that it is seen to most advantage; its long, trailing stems seem to gain vigour by resting on the ground, and the way in which the leaves and flowers face to the sky affords it the chance of displaying its beauties much better than could be expected were its shoots trained upwards.

Megasea Stracheyi.—At the present time the prominent flower-buds, all but hidden in the ample foliage, are showing signs of bursting when we have a few fine bright days and mild weather. Once the bud scales split, the condensed cluster of buds is liable to injury by wet and frost. So delicate is the colour of these flowers, that if they are in the least soiled they are all but unfit to look upon, and it is now that this species should be afforded some care in the way of protecting the buds, when the result might be expected to be clusters of delicate flowers of singular beauty in early spring; whereas, left alone, the plants may go on increasing in size year by year, but the flowers would be ragged, dirty and useless.

Dianthus deltoides.—Why this is not more used in gardens I do not know. Certain it is, however, that it is not so common as a wild plant as on that score to preclude its cultivation, neither has it any peculiar wants. On the other hand, it forms a beautiful green cushion in the winter. It begins to flower in early summer, continuing to the end, not merely with a few straggling blooms, but in profuse masses, and so bright is the colour, that I question if many could name half-a-dozen other rock plants to equal it for colour-effect and duration of same. With me it is a fairly good perennial, but as a biennial the results are better.

Woodville, Kirkstall, Yorks.

J. Wood.

CHRYSANTHEMUMS.

CHRYSANTHEMUMS FOR MARKET.

IN reply to "A. E." (p. 14), I grow a good many Chrysanthemums for cutting or sale in pots. If "A. E." looks at the dates of the Chrysanthemum shows, which range from November 1 to November 30, according to the early or late parts of the kingdom, he will have to avoid this period, for during the exhibition season there are very many surplus blooms that do not come up to the standard or are not required for exhibition that are sent into market. Last November I saw beautiful exhibition blooms offered at 1d. each, and anyone who has the least experience will know that they could not be grown for that, yet there was great difficulty in getting any offer at all for them.

The kinds I grow largely are either very early or very late flowering ones, and for the earliest crop I have not yet found a better kind than Mme. Desgrange and its yellow sport. They are excellent as pot plants, and very free flowering when planted out. In the south of England they may be had in full bloom in August. I keep a quantity of old plants through the winter in cold frames and plant them out in April, but do not pinch them at all. Then I have young plants struck from cuttings and pinched once; these give a good succession of bloom, and in seasons when early frosts cut off Dahlias and other tender flowers the Mme. Desgrange sells well; in fact it gives such a long season of bloom, that the plants are almost certain to be profitable at some period of their flowering. These are followed by *Sœur Melanie*, *Elaine*, &c., which keep us supplied until October is at an end. During November I only have a limited quantity of the exhibition varieties, and concentrate my attention on kinds that are either naturally very late or that can be made to bloom after the ordinary season by late pinching, keeping in very cool quarters during autumn, and other details of culture. The varieties I grow most largely are: *White*—Ethel, Snowflake, Snowdrop, Mme. Mashant. *Yellow*—Gloriosum and Mrs. Jones. *Dark crimson*—Cullingfordi and Crimson Velvet. A good many others are suitable for late work, but these are old reliable sorts, of which I usually have good bloom at least to the middle of January. The greatest demand is at Christmas, and if one can clear out the houses then, they can be prepared for other crops. Late blooms are certainly more remunerative than the finest midseason ones.—JAMES GROOM, Gosport.

— "A. E." will find the under-mentioned varieties good for the double purpose of marketing and conservatory decoration. I have placed them somewhat in their order of flowering as a slight guide, also added the colour of each. Very much depends, however, what colour "takes" best at various times in the market, and what are preferred in a private establishment.

Japanese, owing to being general favourites, merit a prior notice.

Mme. Desgrange, white; Mrs. Hawkins, yellow; G. Wermig, pale yellow; La Vierge, creamy white; Lady Selborne, white; Elaine, white; W. Holmes, crimson, tipped gold; Avalanche, white; Source d'Or, orange and gold; L'Africaine, deep crimson; Peter the Great, lemon; Sunflower, golden yellow; Stanstead White, white; Mrs. C. Carey, white; M. E. A. Carrière, blush, changing to white; Ethel, white; and L. Canning, white.

Reginoid.—Cullingfordi, brilliant crimson; Jules Lagravère, dark crimson-red; Elsie, pale canary yellow.

Incurved.—Mrs. G. Rundle, white; Mrs. Dixon, yellow; G. Glenn, primrose; Jardin des Plantes, orange-yellow; Princess Teck, blush-white; Mrs. Norman Davis, yellow; Lord Eversley, pure white; Miss Marechoux, white.

Pompons.—Sœur Melanie, white; Snowdrop, white; Primrose League, primrose; Golden Gem, yellow.

Single varieties.—Jane, white; Souvenir de Londres, crimson-red; America, blush, changing to white; Guernsey Sunset, bronzy yellow.—E. M.

— Qualities in varieties to be sought for this purpose are freedom in flowering, decided colours and pretty form, dwarfness of growth, and blooming at a particular time. For September, "A. E." (page 14) will not find a white to surpass the well-known Mme. C. Desgrange. There is each year a ready sale for well-grown flowers of this, and also the yellow forms, Mrs. Burrell and Mrs. Hawkins. A high-coloured companion to these has yet to be raised. Towards the end of that month Souvenir de M. Menier, a dark crimson, should be useful. La Vierge is a most excellent white. During the month of October there is a greater choice. Bouquet des Dames, Elaine, and Lady Selborne supply first-rate whites; Phœbus, a lovely yellow; Wm. Holmes, a dark red, not likely soon to be beaten. Felix Cassagneau should be tried. It is very free, and the form of flower and colour, an amber shade, particularly taking. James Salter is a rose-tinted kind. In November we have Mlle. Lacroix, Florence Percy, both exceedingly elegant; Source d'Or, bronze shade, a most popular sort; La Nympe, rose; Edouard Audiguier and Cullingfordi, dark crimsons; Mme. de Sevin, purple, tinted rose; Hamlet and Triomphe du Nord, pretty shades of salmon-tinted red; Val d'Andorre, dark orange; Elsie, a pretty lemon, tinted white; Fair Maid of Guernsey, rather tall, but excellent pure white; Vivian Morel, mauve; Col. W. B. Smith, light terra-cotta, and White Beauty of Exmouth are among the new kinds which appear to possess qualities that will make them useful market varieties. Mr. C. E. Shea, the yellow sport from Mlle. Lacroix, supplies that colour. For very late work, whites seem most in request; indeed, I cannot call to mind a useful dark red one well in bloom at Christmas, and we must turn to other plants (Poinsettias, for instance) to provide colour in winter-time. L. Canning is a first-rate pure white; so is Lady Lawrence; its primrose sport, Kate Mursell, should be useful, too. Virginal (small Anemone) is another grand white for late bloom. Golden Gem is a good yellow. Princess of Teck, a late incurved, is much grown for market, and equally good is another white incurved, Miss Marechoux.—H. S.

Chrysanthemum Beauty of Exmouth.—In THE GARDEN for the 3rd last I notice an article by Mr. W. Iggulden on "too-much-alike Chrysanthemums," a portion of which I must take exception to. Mr. Iggulden says "Beauty of Exmouth and Florence Davis must be bracketed together as being too much alike." I am aware that when I first placed blooms of Beauty of Exmouth before the floral committee a member of that committee did say he considered it similar to Florence Davis. At the November meeting of the N.C.S. I exhibited blooms of these two varieties side by side for comparison, and I also did the same at various other important exhibitions, and in no once instance did any person suggest that they were at all alike. I would point out where the two differ; Florence Davis has dark foliage, Beauty of Exmouth has light. The blooms of the latter are altogether more compact and of a distinct and superior form. The florets of Florence Davis vary greatly in the same bloom, some being broad, others toothed, and many are thread-like. In Beauty of Exmouth they are very even and of one width. It is true a terminal bloom of Florence Davis will sometimes come with even petals, but the blooms in any case are not so compact or elegant. The colour, if such can be said of white, varies greatly. Florence Davis is a cold white, tinted green, the outer florets oftentimes stained pink. Beauty of Exmouth is of an ivory whiteness and never stained with pink.—W. J. GODFREY.

— As stated on p. 518, the mode of cultivation and other circumstances do interfere with the development of many kinds, but what I there stated regarding the manner in which both the sorts named unfolded their florets was exactly as I found them. I also stated that with the exception of terminal buds Florence Davis invariably

displays a green centre. Since writing that I have sent a bloom of this variety to the editor developed from a terminal which was distinctly green; in fact, quite as much so as many which were developed from crown buds. Along with this I sent a bloom of Beauty of Exmouth obtained likewise from a terminal bud; this was, as Mr. Iggulden states, much whiter than I previously noted. This bears out my opinion that cultural conditions do alter considerably the state of most varieties. The blooms I sent were not large, but such as one would expect to have from terminal buds. Even at this stage they were sufficient to demonstrate the decided distinctness of the two varieties.—E. MOLYNEUX.

* * The blooms sent quite bear out the remarks above made.—Ed.

Chrysanthemum Lucrece.—I grew this variety only one season, and that four years since; it did not come up to my expectations, nor did it promise to be of much service, therefore was discarded. It is a very sturdy grower, full-sized blooms developing on plants from 2 feet to 3 feet high, the foliage being dense. The blooms from crown-buds unfold very slowly, the florets being narrow and incurving rather closely. When the flowers are say three parts expanded the florets at the end incur in a wave-like manner. When fully developed the tips of the petals curl inwardly. When the blooms are opening they have quite as much green in them as Florence Davis has (here the similarity to that variety ends in my opinion). This green colour gradually passes away, leaving the blooms of a somewhat dirty-white colour. I have not grown this variety on the terminal-bud principle, therefore am unable to say how it behaves under that treatment. In habit of growth it was decidedly distinct from Florence Davis.—E. MOLYNEUX.

Chrysanthemums at York.—Seldom are plants seen in better condition than were those staged. The Anemone, Japanese, and incurved sections were extremely well represented. Seldom do we see the first represented at all, but on this occasion a surprise in this respect was in store for the visitors. Sœur Dorothee Souille was fully 3 feet in diameter and smothered in flowers, its delicate pink tinge of colouring standing out most conspicuously. The plants of Mlle. Lacroix, Mrs. Gutch, Mme. J. Laing, and Annie Clibran, which won for Mr. Everard the premier award and also the silver medal of the *Gardeners' Magazine* for the exhibit which displayed the greatest cultural merit, were examples of successful culture, being freely flowered, handsomely clothed with foliage, and not stiltily trained. The same exhibitor was successful also in the incurved division, having capitally grown plants of the small-flowered section. In all cases the foliage on Mr. Everard's plants was of a superior character.—E. M.

Chrysanthemum Leon Frache.—Another year's trial has proved this Japanese to be a capital variety for giving late blooms. The colour of the blooms, when the plants are grown on what is known as the large-flower system, is silvery blush suffused with rose, but in the case of the smaller flowers opening at the end of December, they are devoid of the rose tint—in fact, many are nearly white. The plants are best grown with one stem until the first natural break takes place, when four shoots may be retained, and instead of allowing these to develop crown blooms, remove this bud and allow every shoot to develop as many flowers as form.—E. M.

Too-much-alike Chrysanthemums.—I think a careful perusal of the last issued catalogue of the National Chrysanthemum Society—the centenary one—will show that they bracket those sorts that are doubtful. The supplement contains no bracketing that I can see. Beyond what they have done in the issue noted above it will be difficult for anyone to point out varieties that are found to be absolutely identical. I differ from Mr. Iggulden where he says "why not let plain John Lambert stand," simply because it is not a distinct flower, therefore has no right to a new name. Will

Mr. Iggulden say why we should let plain John Lambert stand? I consider nurserymen are much to blame for cataloging these doubtful varieties as distinct. Catalogues containing such doubtful varieties do frustrate the efforts of the N.C.S. because they are much more widely circulated than is the official catalogue of this body. I note the catalogue committee does not include the name of any nurseryman, but I presume the work of the catalogue committee comes before the general committee for approval.—OBSERVER.

TREES AND SHRUBS.

THE CLARET-COLOURED VINE.

THIS pretty Vine, which is not nearly enough used in our gardens, we saw in Mrs. Earle's garden, The Woodlands, Cobham, trained to



The claret-coloured Vine. Engraved for THE GARDEN from a plant growing at The Woodlands, Cobham.

a single stake, as shown in our cut. This Vine, or one very like it, is very commonly grown in the fields in Touraine and other parts of France for colouring wine, and therefore cannot be difficult to obtain in quantity if nurserymen so wish it. It should be planted occasionally in groups on dry banks, as well as against the house and trellises.

Beech trees.—In the park at Hackwood there are large numbers of beautiful Beech trees, smooth, round, and as even almost as ships' masts, but of course very large. Not a few seem to be from 30 feet to 40 feet high ere any break occurs. These trees look as if they would stand yet a couple or more of centuries if left alone. They have been well thinned, and hence, perhaps, their robust, healthy appearance. But on an elevated part of the park, nearly within a sort of paddock, there is one of the finest stemmed and largest headed Beech trees I have seen. It is really a noble specimen, the stem 4 feet from the ground being some 26 feet

to 27 feet round, whilst the noble head has a perfect diameter of 90 feet and 270 feet in circumference. In any record of the noble trees of the kingdom this one should be included. At 10 feet in height the main trunk sends out a dozen huge branches, the head forming literally a forest of growth.—D.

Holly berries.—There is, no doubt, a very great difference between various Holly berries, as "J. M." suggests. Here we have, among hundreds of trees, one whose fruit the birds will not touch even after all the others are stripped and there is a dearth of food. Whether this is a matter of flavour or not I cannot say, as a well-known ornithologist once told me that birds of the thrush and blackbird type have very little or no taste. This I could not dispute, though I am sure the experience of most gardeners would lead to doubts about it. The tree of which I write carries many of its berries over to the next year, so that it is no uncommon thing to see coloured fruit of two crops on it at one and the same time.—J. C. T., *Livermere Park*.

Digging among shrubs.—Referring to the note on digging among shrubs (page 531), allow me to state that in some gardens at Vienna it is the practice to turn over the soil of the shrubberies every autumn in order to bury the leaves. In the gardens at Laxenburg we never used to dig among shrubs; the fallen leaves are left undisturbed on the ground, only the margins of the plantation being raked out in spring-time. Many wild plants, Anemone, Viola, Scilla, Corydalis, Allium, Pulmonaria, Arum maculatum, Primula acaulis, Tulips, &c., grow in such dense masses, that in the early spring the leaves of last autumn are quite covered. Of course during summer many of the spring flowers are past, but the leaves are then half-decayed, so that they are not an eye-sore. Our winters being very cold, sometimes without snow, and the summers very hot are our reasons for leaving the leaves on the ground.—LOUIS KROPATSCH, *Imperial Gardens, Prater, Vienna*.

Mistletoe.—It would seem as if the Mistletoe was rarely seen on the Oak. Until I saw it the other day at Hackwood Park, the growth of this parasite on the Oak had not before been seen by me. Mr. Bowerman showed me the other day at Hackwood Park a large cluster of Mistletoe, and one only of some ten or twelve years' growth upon an aged and weatherbeaten Oak tree. It would be very interesting to learn in how many places this parasite is found on the Oak. As in so many other districts, the Mistletoe is found abundantly on the Lime at Hackwood, also on the Whitetorn, the Apple, and moderately on the Elm. Thus in one place no less than five diverse trees bear Mistletoe. How many other kinds of trees bear this parasite?—D.

Shrubby management.—In many gardens it is time the way these are managed, or mismanaged, was altered. It is a common fault at first to plant thickly for immediate effect, but instead of annually going over the shrubbery when necessary and removing a plant here and there to other suitable positions, they are allowed to grow into a mass, and in a few years what was once an attractive part of the garden possesses no feature of interest, because not one single shrub or tree remains that is not spoilt by overcrowding. In the first place the planting is very often done wrong. What is wrong is the dotting here and there of flowering or fine-foliaged plants singly instead of planting the same kinds in a mass of three, five or more, according to their size. If half-a-dozen plants of Golden Queen Holly were bought, how much better there would look if planted in a mass, say on a sloping bank, with at least 5 feet of space between each if the plants are of a fair size. A carpeting of Berberis Aquifolium under the Hollies would improve their appearance, at the same time covering the soil as well. The bronzy tints of the Berberis in winter form an excellent setting to the gold of the Hollies. The same method holds good in small shrubberies as in larger spaces. Take again deciduous flowering subjects—Pyrus, Spiræas or Deutzias. The same remarks apply equally here.

It is wise to plant the tall-growing subjects at the back of the borders, whether they be narrow or wide, but it is not absolutely necessary to so arrange the trees that a stiff sloping bank without any relief need be secured. Over a batch of low-growing subjects, dwarf Retinosporas, for instance, or St. John's Wort, a clump of standard double or single-flowering Thorns, or the double Cherry may be grown. All should be so arranged as to give a reasonable chance to the weakly as well as the strong. We have a wealth of subjects, either flowering or with ornamental foliage, available for this part of the garden if such are properly arranged to give the finest effect.—OBSERVER.

SHORT NOTES.—TREES AND SHRUBS.

The cutting of Laurels.—I grow these largely for hedges, screens, and for covering banks and bare places under tall forest trees where no other shrubs will succeed. I annually go over all with the pruning knife. I cut the sides of the hedges during the early part of December, the cuttings coming in for Christmas decoration. I find it a good plan to defer cutting the tops of the hedges, which are mostly flat until February or March, as where the growth is luxuriant, as in my case, the leaves then exposed by the cutting are often rendered brown and unsightly if severe frost and snow come.—E.

American Hickory.—How seldom do we see this tree growing in private gardens; it is indeed worthy of more attention. Planted where it can have space to develop thoroughly, it is a fine object when its massive leaves assume that golden colour which they do all of a sudden in the autumn. This tree I find very difficult to move, it makes so few fibrous roots. A few years since I had to move one of these trees. This was done as carefully as possible in the autumn, and instead of commencing to grow in the spring it remained dormant for a whole year and grew the next.—E. M.

The Horse Chestnut.—We often see this fine old tree plentiful enough in a large state, but the fact ought not to be lost sight of that young ones should also be planted to succeed the aged ones. Whilst still young the growth is much finer and the trees make good headway even in poor soil. Stray plants often spring up in scrubberies from self-sown seed; these may be looked after and turned to good account when large enough. The scarlet variety deserves to be planted more than it is; it makes a fine specimen, and is of slower growth, as a rule, than the ordinary kind. By the leaves of the trees it is easy enough to distinguish the one from the other even whilst still of small size. The common light kind has the buds very sticky, as all are aware, but in the scarlet variety they are quite free from this, being perfectly smooth. In moving young trees care should always be taken not to injure the stems; if this is not done and wounds occur, it will take some time for them to heal over again.—G.

NOTES OF THE WEEK.

Crocus Imperati.—The first blooms of this little gem showed on a sunny bank a day or two before Christmas, but the cold and mostly sunless weather has temporarily checked those following. A day or two of mild weather would bring them out thickly. Even in my heavy clay soil this has increased very rapidly and is always in bloom at the new year.—G. PIM, Dublin.

Daffodils, early.—These are already to be seen in the florists' shops in London, so that the season may be said to have fairly commenced with the new year. The common yellow (double) and another variety which much resembles Golden Spur seem to be most plentiful at present. With these there are also the Paper-white (large-flowered) and Soleil d'Or Narcissi, the former appearing to be very plentiful. With a predominance of white flowers, the yellow Daffodils afford a pleasing contrast, and will no doubt be soon sought after by those who know how well they retain their freshness when cut, whilst they are also

comparatively cheap. There will no doubt be in the future a still greater demand for these useful flowers, thanks to the extended season also, which, from the beginning of the year until May, will continue to give us an immense variety of useful decorative material in a cut state.

Cut Roses in Covent Garden.—These are now to be seen in the Avenue in good numbers. The most pleasing are small yellow or buff-coloured buds, very fresh looking and useful also in sprays and coat flowers. Others consist of those of a variety, looking much like Reine Marie Henriette, and some pink buds of another kind. One pleasing feature was that of the quite long stems to be seen in one window, the flowers being lightly arranged in rather tall vases. By the appearance of the blooms they would last well.

Guenera manicata.—This seems to do remarkably well in Cornwall, a large specimen growing at Trellis-ick, Truro, having been described in these columns some time ago. I recently came across another giant of this kind in the gardens of Mr. R. L. Lake at Trevarrick, St. Austell. The leaves of this specimen were, when measured, quite 8 feet across. I noticed a running stream close by and the roots of the plant must have been in actual contact with the water, this, no doubt, accounting for the gigantic proportions.—F. W. MEYER, Exeter.

Cut Orchids in florists' shops.—Just now in London these are not over-plentiful. Possibly they are being held in reserve, where possible, for the next fortnight, but it struck me that the fogs of late have been responsible for some of the deficiency. *Calanthes* are scarcely to be seen; neither are *Odontoglossums* nor *Oncidiums*, but *Cypripediums* are fairly plentiful; so are *Lycaste Skinneri* and *Dendrobium nobile*. Here and there are also to be seen spikes of *Zygopetalum Mackayi* and *Angraecum sesquipedale*, the latter looking rather yellow.—A.

Anthurium Warocqueanum.—I think you will be interested, and your readers also in the plant (photos by mail) of an *Anthurium Warocqueanum*, which was exhibited this year, on Nov. 25, at our annual show. It was in a 15-inch pot and had three noble leaves, the dimensions of each respectively, taken and recorded before a committee, being 3 feet 6 inches by 13½ inches, 3 feet 10 inches by 18 inches, and 3 feet 5 inches by 14½ inches. It was grown by Mr. R. F. Parkinson, the young plant having been imported from England.—J. W. EDG-HILL, *Sec. Barbadoes Hort. Soc.*

Apple Margil.—Amongst Apples this holds a high position. It belongs to the Ribston class and is not unlike that kind, except in shape, and in which respect it is very distinct, being much more pointed at the top. It keeps well with me, and is of a high flavour like the Ribston, but more aromatic. Some people call it a small Ribston. The tree is well adapted for situations where strong growers cannot be grown and for espalier cultivation. With me it is very free-bearing, so much so that a bush tree cropped so heavily for several years that it got into a stunted state. Some three years ago I deluged it three or four times with manure water in the summer with the best results, and the tree has improved very much.—F. A. C.

White flowers in Covent Garden.—These are now to be seen in profusion in the Central Avenue. During a stroll through it this week we noted that white Callas were very fine in quality for the season. These still appear to hold their own for wreaths, crosses, and other funereal emblems. Lilies of the Valley are also plentiful, the spikes well developed and the bells of good size. The pale colour of the stems, however, denotes hard forcing, but they are beautiful all the same. White Lilac is to be seen in fairly good quality, whilst Roman Hyacinths appear to be past their best in this respect, the colour not so pure as earlier in the winter. The white Freesias are now coming in useful, and will take the place of *Bouvardias* in that colour. *Eucharis* are very plentiful to all appearance and of good size, but white *Camellias* do not seem to be so abundant. For

quantity with very good quality, the latest of the white Japanese *Chrysanthemums* still hold their own. A few *Pancratiums* are to be seen here and there, but it is not their season. White Azaleas and *Cyclamens* are both fresh and good. We did not notice any Christmas Roses, which is rather singular considering how profusely they flower and with what little expense they may be grown, whilst they last in good condition a long time when cut.

The Mexican Orange Flower (*Choisya ternata*).—I quite agree with the remarks of your correspondent "T." in your last issue (p. 6), that *Choisya ternata* is not so tender as many people suppose. Messrs. Robert Veitch and Son, Exeter, have a hedge of this beautiful Mexican Orange Flower at their Exminster nurseries, which are much exposed, and therefore mostly devoted to the growing of forest trees. It never suffers, but flowers most profusely. I have sometimes found small, fresh transplanted examples suffer from very cutting winds, but they soon recovered. A few years ago I noticed *Choisya ternata* doing well out of doors even as far north as York, and it can therefore scarcely be called a tender plant.—F. W. M., Dublin.

—Noticing in the last two or three numbers of THE GARDEN some allusions to this pretty shrub, I venture to enclose for your inspection a photo of a fine specimen growing at Mount Usher, Co. Wicklow, against an out-house. The photo was taken about five years ago, and the plant has grown considerably since, but I am unable to state its present dimensions. A small plant here (near Dublin) has been out for some years against a wall and has done well, while at Glasnevin there is one plant, if not more, in the open shrubbery.—GREENWOOD PIM.

* * The photo shows a fine bush clothing a high wall and running along its top as a Clematis might.—Ed.

A January-flowering shrub of great interest is *Hamamelis arborea*. It grows about 8 feet high, as a rule, in this country, but is taller in its native country, which is Japan. It is not a shrub or small tree that one would plant largely, but in good gardens a few specimens are interesting when in bloom on a mild day in January, when the flowers can expand unhindered by severe frosts. It delights in an open sunny spot and a good soil, and when in bloom the golden flowers are remarkably bright in the weak sunshine as they stud the leafless branches. The florets are twisted and deep golden, in rich contrast to the crimson calyces. After the flowers appear the large Hazel-like leaves. A bed of it is very attractive, as the shrub by itself is not of much account. Visitors to the Royal Gardens, Kew, on a mild winter's day when there have been no frosts to retard the flowers, should not forget this *Hamamelis*, which is there planted with excellent effect as a standard in a bed covered with some carpeting plant as the crimson-berried *Gaultheria procumbens*. This *Hamamelis* is the best of the family far surpassing in beauty any of the other species.

Bolbophyllum comosum.—At present there are but very few representatives of this Orchid in cultivation, this species being one of the latest additions to the genus. It is certainly the prettiest *Bolbophyllum* discovered for many years, and is in some respects quite distinct from all the other known kinds. It was found two or three years ago on the Shan Hills, in Eastern Burmah, by General Collett, who is also the discoverer of the pretty and remarkable *Cirrhopetalum Collettianum*. At the present season it is devoid of leaves, but is flowering very freely. At Kew there is a plant now carrying several spikes, these being each from 4 inches to 9 inches high. The scape itself is quite erect, but the raceme, on which the flowers are densely packed, is curved over and pendent for about 3 inches. In this space several scores of flowers are clustered. As in most or all *Bolbophyllums* the petals and lip are insignificant, and it is the sepals alone which practically constitute the flower. They are about half an inch long and milky white, this species being the only one amongst

cultivated *Bolbophyllums* in which the flowers are of this colour. The beauty of the raceme is also added to by numerous short hairs on the sepals. On the whole, the species is one well worthy of cultivation, and might, if introduced in sufficient quantity, do a good deal towards making the genus to which it belongs more favourably known amongst Orchid growers than it is at present.

Hardy Cyclamens in Cornwall.—Last September I visited the grounds of the late Mr. Tyerman, at Tregony, near Grampound. Mr. Tyerman, who died a few years ago, had been a most enthusiastic gardener all his life. Everyone now knows Tyerman's Groundsel (*Senecio pulcher*), of which I saw what I believe to be the original plant at Tregony. What struck me most on the occasion of my visit, however, was a large piece of ground devoted to the different varieties of hardy Cyclamens. In order to provide the necessary shade, a very large number of young Pear trees had been planted, in many cases not more than 3 feet apart. Nothing had been touched for several years, and the trees were forming an entangled thicket when I saw them; but the Cyclamens beneath them were a sight I shall never forget. They had evidently taken advantage of their being left alone. The whole piece of land (20 perches or more) was simply a sheet of bloom—and such flowers. I never saw larger or better flowers of hardy Cyclamens than those growing in this neglected wilderness. Some of the corms I noticed were of enormous size, measuring 6 inches to 12 inches in diameter. I drew the following conclusions: Hardy Cyclamens to do well should be grown underneath deciduous trees, and after planting should not be disturbed.—F. W. M., *Exeter*.

Wreaths and other floral offerings.—We saw to-day some very superior and tasteful arrangements of these in Covent Garden. In the making up of these far less formality and overcrowding were apparent than used to be the case on the whole, although in one instance we noted that the old system of packing the flowers together was still adhered to. The most beautiful wreath was one in which the flowers only occupied about one half of the distance around it, the other portion consisting of the bronzy foliage of *Mahonia aquifolia*, dotted amongst which were a few brightly coloured leaves of *Croton Baronne James de Rothschild*. The flowers consisted of Callas, white Lilac, and *Chrysanthemums*, *Eucharis*, and *Freesias*. Another tasteful arrangement was in the form of a horse's collar, Lilies of the Valley being used effectively over a groundwork of larger flowers. Small crosses with a groundwork of grey Moss and a few flowers in the centre were very effective; one of these had mainly buff-coloured Roses upon it, these looking very suitable; another of the same kind had chiefly a few blossoms of *Eucharis* tastefully arranged. One beautifully arranged anchor was to be seen, upon which some considerable amount of time had been spent. A few bouquets were noteworthy; one with a white groundwork over which had been dotted a few buff-coloured Rose-buds was the best in point of arrangement.

Fruit in Covent Garden.—The quality of the fruit to be seen in the Central Avenue leaves nothing to be desired considering the season of the year. St. Michael's Pines are not over-large, but look well ripened. Grapes, which consist mainly of Gros Colman, are fairly good, not first-rate in colour; better will be seen no doubt in a few weeks when there is a greater demand. Pears consist chiefly of a few very fine samples of Easter Beurré, whilst of Apples the best are Cox's Orange and Newtown Pippin. Some good samples of Cape Apricots were to be noted, the fruit of average size, fresh looking, but rather pale in colour, as one might expect considering they would be packed long before they were ripe. Bananas were good and plentiful; these some of the fruiterers now buy whilst still in the green state and ripen them in a warm room themselves. Some very superior samples of Oranges were to be seen, the best being the Maltese Blood and the Jaffa Orange, whilst the Tangierines were also of good quality. Limes from Naples looked very fresh in

one instance. Stewing Pears do not appear to be at all plentiful, the English crop at least having been in most cases last year a short one. In a few weeks we shall no doubt see more of the Jersey productions in this line.—B.

Epidendrum ciliare var. latifolium.—Whilst the genus *Epidendrum* does not possess a horticultural value of anything like the same proportion that its 400 species, numerically considered, bear to the Orchid family as a whole, it includes at the same time a few species of first-class merit and a good many which fall only a little short of that degree. *E. ciliare* and its variety *latifolium* may be safely classed amongst the latter, not so much for the colour attractions of their flowers as for their curious structure and their fragrance. Two or three plants of the variety mentioned are now in flower at Kew. The scape is about a foot long and carries four to six flowers. The sepals and petals, whilst being nearly 3 inches long, are only about one-eighth of an inch in width and they taper to a fine point. The lip has a very scorpion-like aspect, being divided into three lobes, the centre one of which is 2 inches long, very narrow and pointed, the side ones being shorter and fringed on the outer side only, thus resembling the numerous legs of some insects. The colour of the flower varies from greenish yellow to creamy white, and is always of a pleasing shade. The species is a native of tropical South America and may be grown in a moderately cool or intermediate house.—B.

SOCIETIES AND EXHIBITIONS.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.

At the quarterly meeting held on Monday last in the Caledonian Hotel, W.C., several new members were elected; at each monthly meeting for some time past there has been a large accession of fresh members, the year just ended being one of the best on record. It may, in fact, be considered the most successful year the society has had, speaking collectively, in the very encouraging increase in membership and the extremely satisfactory state of the funds, more money having been invested by the treasurer than in any previous year. The sick fund has not been called upon nearly so much as last year, whilst the death-rate has been extremely low. The auditors appointed are Messrs. Dixon, Gunner, and Puzey—three gentlemen well known for their professional abilities in this direction. The annual meeting will be held on the second Monday in March. One of the most beneficial aspects of this society, as contrasted with benefit societies in general, has just been put to a practical test. It was that of a member who joined its ranks now several years back, but who, through force of circumstances, could not continue his subscription, consequently falling into arrears he ceased to be a benefit member, his account in the books being closed. In other benefit societies he would have forfeited his claim to any future assistance. Not so in the United, for a provision is made in its rules, whereby lapsed benefit members can, upon attaining the age of sixty, give notice of withdrawal of the balance standing to their credit at the time their accounts were closed. This is a most praiseworthy and prominent feature in the rules, and one which requires to be better known than it is. Instance after instance could be given, by the thousand if needful, of members in other societies who, after having subscribed for several years, have been known to stop their payment for some reason or another. Sickness it could not well be of the member himself, but it might be of his family, or through being out of work, whereby he could not keep up his payments through straitened circumstances; hence he loses all claim whatever upon the society. To say the least, this is a decided injustice to a man who, from no fault of his own, is deprived of the benefits he so much needs when old age comes on. To meet such cases, the rules

of the United are duly framed. The member who ceases to contribute has only to keep his last annual balance sheet, which states the amount of money standing to his credit, and then at the age of sixty it is paid to him. Under this rule there are now one or two cases where £20 will have to be paid on application by old members when they reach their sixtieth birthday.

The Gardeners' Royal Benevolent Institution.—The annual meeting of this old established society, it should be noted, will be held on Tuesday next at Simpson's, 101, Strand, W.C., when it is hoped there will be a good attendance of its supporters. Subscribers who have not yet sent in their voting papers should lose no time in doing so, for this early remittance greatly facilitates the process of counting the votes by the scrutineers. The voting on this occasion will undoubtedly be heavy, there being so many second and third year applicants who have already a goodly number of votes to their credit. Intending subscribers who have thus far postponed their good intentions should be reminded that if their subscription be at once sent to the secretary, 50, Parliament Street, W.C., they will be thus enabled to vote at the forthcoming election of pensioners. The meeting it should be observed, is on the afternoon of the first committee meeting of the R.H.S. this year; thus the facility will be afforded to subscribers of being able to attend both without any great inconvenience before returning home. The annual friendly dinner takes place the same evening at Simpson's at 6 o'clock, when Mr. H. Seymour Foster, M.P., will preside.

THE FROST IN MARKET GARDENS.

The frost that set in at Christmas, and has continued with great severity up to the present date, found all the markets and shops abundantly supplied with both green vegetables and roots. Now that stocks are exhausted, the work of getting fresh supplies is a difficult one, for in the absence of snow the intense frost has penetrated deeply, and those that had not taken the precaution to cover Celery, Artichokes, Parsnips, and other roots that are best freshly lifted are now lamenting the probable loss of a good many things that a covering of litter would have saved. The hard surface has, however, been fully utilised for getting manure on to the land, and where such heavy dressings as are supplied by market growers have to be moved, the work is materially lightened by such a bare hard frost as we have lately had. The following crops now need attention, viz.:—

ARTICHOKES (GLOBE) need protection with leaves or litter packed round the crowns, for although they are hardy enough to withstand several degrees of frost, it is very hazardous to let them go entirely unprotected, or the most vigorous crowns that would yield the first and finest heads would be the first to suffer.

ARTICHOKES (JERUSALEM) are perfectly hardy and keep best in the soil, but some covering should be placed over the beds, after the stalks have been cut down to 1 foot from the soil, for convenience of lifting the roots during frosty weather.

ASPARAGUS beds are now being coated with rotten manure or seaweed; a good deal of the latter is collected in the bays and creeks. From a comparison of the effects of each I can confidently say that seaweed is a most valuable manure, not only feeding and strengthening the crop it is applied to, but also keeping slugs and other pests away.

BEANS of the early Broad kinds where not already sown will be got in directly the frost breaks. The longpod varieties are the first to be sown, followed by the Windsor varieties in February.

BROCCOLI at present looks safe; the open field crops seldom suffer, even when garden crops are much damaged, the reason doubtless being that they get their growth more hardened by firmer soil and fuller exposure at all periods of growth.

CAULIFLOWERS.—Very fine heads of Autumn Giant are still obtainable from plants lifted before the frost set in and placed in pits or frames and covered with litter or mats. Autumn-sown plants under hand-glasses or in frames have been closely covered for some days, but as soon as mild weather prevails they will be gradually exposed to the light.

PEAS.—For these the soil is being well manured, and directly the frost breaks, ploughing and sowing will be pushed on. American and English Wonder and William Hurst, dwarf wrinkled Peas, are greatly in request for market.

RHUBARB AND SEAKALE are being put into the Mushroom or forcing houses in quantity, and the first crop is being marketed. Mushrooms are now coming in more plentifully, and realise good prices. Pits and frames are being emptied of all the old material and refilled with fermenting manure, trod firmly to give a gentle lasting heat. A good many are being planted with

EARLY POTATOES, the sets of which have been sprouted in single layers. Sharpe's Victor and Ashleaf Kidney or Mona's Pride are the sorts mostly used, as they need but little space. After the sets are planted and drills filled in, a little of Wood's Early Scarlet Radish seed is sprinkled over the surface, and a crop fit for bunching before the Potatoes need all the space is obtained.

ORCHARDS AND FRUIT GARDENS are being attended to, and any trees that are at all affected with American blight, scale, or any other parasites can be brushed over with paraffin oil and soft soap worked up into a lather.

FRUIT BUSHES, especially Gooseberries, need careful watching to keep birds from picking out the buds. In the neighbourhood of towns, the sparrows are the worst enemies to buds that we have.

J. GROOM.

Gosport.

PUBLIC GARDENS.

Home Park, Hampton Court.—The Kingston-on-Thames Town Council have appointed a deputation to act in conjunction with Sir Richard Temple, M.P., and Sir F. D. Dixon-Hartland, M.P., and several neighbouring local authorities, to represent to the First Commissioner of Works the advisability of opening Home Park, Hampton Court, for the use of the public.

Open spaces.—At the monthly meeting of the Metropolitan Public Gardens Association, 83, Lancaster Gate, W., Lord Dorchester, vice-chairman, presiding, it was announced that Archbishop Vaughan had consented to become a vice-chairman in place of the late Cardinal Manning, and that the Marquis and Marchioness of Salisbury had joined the association as life members. The income of the association for 1892 was stated to have been £2900, against £6576 in 1891, the large deficiency being only partly due to the fact that in 1891 £3000 was received in response to a special appeal. A letter was read from the garden committee of Soho Square stating that the owners and occupiers declined, by a majority of fifteen, to accept the offer of Mr. Blackwell, recently made through the association, to provide £5000 for the laying out and maintenance of the square as a public garden, if transferred to the local authority for this purpose. In a letter to Lord Meath, Mr. Passmore Edwards agreed to provide the association with the £1200 it required for the laying out of Woolwich Churchyard. The District Railway Company wrote that it had no intention of selling "Buffalo Bill's" site, Earl's Court, and suggestions were made as to the possibility of obtaining other land for a much-needed open space in this locality. The owners named £6000 as a price for the Cross Bones disused burial-ground, Red Cross Street, which the association desires to acquire and lay out, if funds are forthcoming, and letters were read from the Wandsworth Board and the Battersea Vestry declining to contribute £1000 each

towards the purchase of five acres, formerly part of Wandsworth Common, and now in danger of being built on. A grant of £50 was made towards the laying out of the additional piece lately added to Acton Recreation Ground, as it was felt that the association should recognise the exceptional efforts made by the local board to provide adequate open space for the inhabitants of this very poor and rapidly growing neighbourhood. It was stated that the association had been represented at a crowded public meeting in favour of the acquisition of Alexandra Park and Palace, the most important scheme at present on hand; and progress was reported with regard to the Hilly Fields scheme and the laying out of Bishopsgate Churchyard, Poplar Churchyard, Goldsmith Square, Duncan Terrace, N., and tree planting at Stamford Hill, N. It was agreed to give seats for High Street, Tottenham, N., and to apply to the New River Company for permission to lay out a piece of vacant land in Canonbury.

India-rubber rings for hot-water pipes.

—I send a joint taken from between a wrought-iron boiler and the casting forming the socket of the return pipe which nearly caused the loss of a houseful of plants during the late severe weather. The casting was bolted to the boiler with a flange in the usual way, and the joint on the outside was of hard cement, but an india-rubber ring had been used inside this. The ring gradually expanded under the action of the heat until the aperture left for the flow of the water has been reduced to about one-fourth of its original area. The joint on the flow-pipe has behaved in a similar way. These two constrictions in the area of the waterway so checked the flow of the water, that it was with the greatest difficulty that the frost could be kept out of the house, which formerly could be easily kept about 48° or 50°. The closing of the opening has been gradual, taking three years to reach its present stage, and it was thought to be that the flow of water had been checked by a deposit of lime in the mouth of the pipe from the hard water sometimes used to make up the waste, and it was only on opening the pipes to remove this that the true cause of the failure was discovered. I may add that the boiler was fitted up three years ago. Others may have been troubled in a similar manner, and the publication of this failure may help some of your readers to remedy this defect before it is too late.—AN AMATEUR.

The Royal Horticultural Society.—Lectures for the current year will be as under: March 14, "Some Effects of Growing Plants under Glass of Various Colours," the Rev. Prof. Henslow, M.A. March 28, "Flowers of the Riviera," Mons. Henri de Vilmorin. April 11, "Orchid Life in Guiana," Mr. Everard F. im Thurn. April 25, "How to Solve Chemical Questions concerning the Soil without Chemistry," Prof. Cheshire. May 9, "Fritillarias," Mr. D. Morris, M.A. June 6, "Hardy Rhododendrons and Azaleas," Sir J. T. D. Llewelyn, Bart. July 25, "Alpine Houses and their Inhabitants," Mr. H. Selfe Leonard. August 8, "Cannas," Mr. J. G. Baker, F.L.S. September 12, "Garden Phloxes and Pentstemons," Mr. J. Douglas. September 26, "Causes of Failure in Eucharis Culture," Mr. W. Iggulden. October 10, "Pears," Mr. W. Crump. October 24, "Onions," Mr. A. Dean. November 14, "Chrysanthemums," Mr. R. Parker. November 28, "Late-keeping Grapes," Mr. T. Crasp. Sir John Lubbock has been invited to lecture on June 20.

The weather in West Herts.—Since December 21 both the days and nights have remained throughout unseasonably cold. During these three weeks the exposed thermometer has on seven nights registered from 21° to 26° of frost. The temperature of the soil at the depth of 1 foot has now for nine days continued persistently below 32°, and on the 5th inst. stood 2° below the freezing point. At 2 feet deep the ground is now colder than at any time during the present winter. On the morning of the 7th my garden was covered with snow to the depth of between 3 inches and 4 inches, but at the time of writing snow is only to be seen

in places, having been melted by the rain which fell two days afterwards. Unfortunately, in this district it was only when the weather had moderated that sufficient snow came to afford protection to the ground and low-growing vegetation.

—E. M., Berkhamsted.

METEOROLOGICAL REGISTER

KEPT AT INVERIE GARDENS, KNOYDART, INVERNESS-SHIRE, N.B.

For year 1892.	Average maximum. Degrees.	Average minimum. Degrees.	Average wet bulb. Degrees.	Average dry bulb. Degrees.	Total rainfall. Inches.	Most rain in one day. Inches.	Number of days no rain fell.
January ..	41.11	32.22	36.24	38.23	11.96	2.30	7
February ..	44.09	31.10	35.18	38.06	4.41	.70	12
March	44.25	29.18	33.28	36.22	2.13	.50	22
April	51.08	34.18	36.06	40.15	3.02	.43	16
May	56.08	40.20	45.11	49.03	6.45	.84	10
June	59.15	40.03	49.09	53.14	3.93	1.05	14
July	61.17	45.75	52.02	56.12	5.38	.80	16
August	62.04	47.18	53.19	56.04	6.78	.87	7
September ..	56.06	43.03	48.23	50.12	13.64	2.20	5
October	49.15	35.08	40.03	42.18	7.35	1.08	11
November ..	47.27	39.04	43.07	46.02	8.48	2.02	11
December ..	39.12	31.18	36.04	38.11	6.25	1.02	12

Total rainfall for 12 months .. 79.78

J. HUGGINS.

RAINFALL IN 1892.

	Inches.	No. of days on which rain fell.
January ..	2.60	19
February ..	1.79	18
March	1.20	10
April	1.22	9
May	2.54	15
June	2.23	18
July	2.31	15
August	2.56	16
September ..	3.41	18
October	3.62	24
November ..	2.28	18
December ..	1.72	13
	27.48	193

Although there have been three days more than in 1891, the rainfall has been 6.16 (or something like 750 tons) less per acre. The total weight of rain for the year, at a rough calculation, is something over 2780 tons per acre. We have experienced a very late, sunless, cold season, which invariably means insipid, flavourless fruit, light crops, light corn, and poor washy herbage.

C. A. PEARSE.

Oteley, Ellesmere, Salop.

Wanted, the name of a Pæony.—A dozen years ago I saw at one of the London flower shows a Pæony with long, narrow, twisted petals turning in. It was double and large. I cannot now give the colour, but it was not a self. I have never seen a Pæony answering to this description in the various catalogues, and should feel much obliged if anyone would tell me what it is likely to be.—W. W.

The longest Cucumber.—Some fifteen or eighteen years ago, Mr. Meredith when at the Vineyard, Garston, Liverpool, grew some very long Cucumbers of the Sooly Qua variety. I remember seeing one there 6 feet 7 inches long, I think it was. The same fruit hung in his shop in St. John's Market, Liverpool, for a long time, and was a source of much attraction. It must be remembered that this variety is grown simply on account of its size; as an edible kind it is useless. I remember seeing a brace of Tender and True at an exhibition at Southport. These each measured 2 feet 3 inches long.—E. M.

The English Flower Garden.—Design, Views and Plants. Third edition, revised, with many new Illustrations. London: J. Murray, and through all booksellers.

WOODS AND FORESTS.

QUALITIES OF TIMBER.

OUR ideas of the value of timber for various purposes are formed from its weight, its toughness, durability, or its hardness. Where the ligneous structure is dense and the tissues are closely compressed, the wood is heavy; where there is a watery sap, which evaporates quickly, the wood shrinks considerably and afterwards decays rapidly when exposed. Thus all seasoned timber becomes lighter in proportion to this evaporation, some kinds losing much less than others both in bulk and weight. Oak and Pine shrink but little, and that slowly; Elm, on account of its glutinous sap, continues to shrink for a great number of years, while both the Poplar and the Willow shrink and season very rapidly. Where the sap becomes concentered in the cellular membranes, as in the case of matured Oak, or is fixed by its resinous qualities, as in the Pine, the timber attains a high value. The hardness of timber depends upon the closeness of its woody structure, while its toughness is due to the strength of the longitudinal fibres and the elasticity of the intermediate cellular matter. The durability of timber exposed to much wear or friction is proportioned to the size, strength, and compactness of its fibre. Most of the hard and durable wood used for manufacturing purposes is the produce of small and comparatively slow-growing trees, such as the Yew, Box, and Ebony. It is found that Norwegian Hop poles of small diameter, but of from forty to fifty years' growth, are much more lasting than those of the Ash, Sweet Chestnut, Maple, and Oak, which are used for the same purposes, and which—though of larger size—are the growth of from nine to thirteen years only. The durability of timber is not wholly dependent upon the fibres of the wood, but is partly owing to the quality of the sap, which in some trees is of a highly preservative nature; thus, the Oak has an astringent or tanning principle, as well as a ferruginous quality in its juices, and it is from a combination of these qualities that its durability in exposed situations is obtained. The quality of Oak timber is never better than when the tree is grown in a good loam or loamy clay, resting upon a subsoil of blue clay, from which it obtains the oxide of iron with which the wood becomes impregnated. In the case of the true English Oak, it has been observed that the fast-grown tree attains the greatest strength of fibre, and its timber is on that account the most durable in situations where it is exposed to rough wear, as in gate-posts and in spurs to posts and fencing. The general superior strength of

FAST-GROWING TREES is due to the wider intervals between their concentric circles, or to the wood having fewer cells in comparison with the size of it. By comparing the structure of a hard wood, such as the Locust Tree, with the soft wood of Fir, Lime, and Horse Chestnut, it will be seen that the former has its cells confined chiefly to annual rings, or else scattered in groups of irregular figures, so that the solid fibre exists in considerable masses, giving strength, toughness, and durability, while the cells of the softer woods are scattered pretty regularly through the whole mass.

To form a just estimate of the value of timber for a special purpose, it becomes necessary to consider its rate of growth at all ages, and not to be misled by observations made at one stage of its existence. Again, by transferring any tree to a much better than its

native soil, its rate of growth may be so much accelerated as to lessen very considerably the value of the timber. The comparative rate of growth of trees varies considerably at different stages of their existence. During the first ten years the Locust Tree grows twice as fast as the Oak, after which the latter takes the lead and maintains it to the end. For the first ten or twelve years of its life the Silver Fir grows but slowly, and is far outstripped by the Larch and Spruce; but it soon distances all competitors, and by the time it reaches its fortieth year it surpasses them both in height and circumference. It may be observed that in the Pine and Fir tribes the cellular members forming the exterior part of each year's growth are possessed of greater strength and durability than the intermediate portion, as may be seen by the ribbed appearance of an old and well-worn deal floor.

The soundness of timber may be ascertained by placing the ear close to one end of the log while another person delivers a succession of smart blows with a hammer or mallet upon the opposite end, when the continuance of the vibrations will indicate to an experienced ear even the degree of soundness. If only a dull thud meets the ear, the listener may be certain that unsoundness exists.

X.

The Black Poplar (*Populus nigra*).—This well-known tree is found in almost every part of the United Kingdom. It is a rapid growing tree, and in a rich fresh soil frequently rivals the Oak in size. The bark is ash-grey, but upon the branches and young trees it is of a light yellowish tint. The leaf-buds are sharp-pointed, thick and glutinous, and emit a strong balsamic odour when bruised. The Black and White Poplars are also admirably adapted for nurse trees to young plantations and shrubberies, especially in the vicinity of towns. The Black Poplar is well adapted for planting in damp boggy soils, and it thrives exceedingly well upon the banks of rivers and lakes. The wood is soft, tough and difficult to split. The larger roots are beautifully veined, and in some places are used for inlaid work.—J.

Thinning plantations.—The thinning of plantations should in all cases be proportioned to the exposure, and should be lightest upon the margins which are in the direction of the prevailing winds of the district. Where the thinning has hitherto been neglected, it should be gradual and extended over several years, otherwise the sudden exposure may cause permanent injury. The less the crowns are isolated until the trees have attained their height the better for the future crop, as by too much opening out, the growth in height is suddenly arrested. Besides, at this stage of their growth the small diameter of the bole in proportion to its height renders the tree the more liable to grow crooked. As a rule, in rearing Oak groves, it may be said that if properly planted at first, thinning may with advantage be carried out every ten years, until they are seventy years old, and after that time, every fifteen or twenty years, according to soil and situation. Thinning is always an operation requiring both practical knowledge of the trees and skill in the execution. When made in the right place and at the proper time, keeping solely in view the benefit to the remaining crop, we not only obtain a better vegetation, but a superior lignification of the wood itself. In thinning plantations where little or no underwood is grown, the preservation of a complete canopy should be kept in view, as by this means the trees are all equally drawn up. But in coppice with standards, where the underwood is perhaps the most remunerative crop, not more than one-third the wooded area should be covered by standard trees, and these should in no case be allowed to form branches low down. Where the underwood is of a kind which springs up rapidly, the growth of side branches upon the standards will be re-

strained; but in other cases they should be pruned back the second year after the fall. It is but seldom that much attention is paid to the growths from stools from the period of one cutting until the next, and the result too frequently is a thick growth of small-sized and very inferior wood. But were such stools gone over systematically about the second year after the fall, and cleared of all but the strongest shoots, the produce at the time of the next cutting would become much more valuable.—B.

Saving a tree damaged by rabbits.—In your next issue I should be glad if you would say whether there is any mode of saving a tree whose bark has been very badly damaged by rabbits. I do not know that it has been entirely eaten round, as it has been covered by the gardener with some kind of mixture which he has plastered on. This, however, I fear, must sooner or later be washed off, and then the result will be bad. There must be some way whereby the lives of valuable trees have been saved under similar circumstances. It is a Tulip tree about seven years old.—J. WILSON.

WOODLAND NOTES.

EVERGREENS IN THE WOODLAND.—There are so many bright green-foliaged trees that succeed perfectly when canopied by the high branches of our forest monarchs, that there need be no excuse for the deciduous woodland being cold, bare and uninteresting. Very few specimens are required even in a large wood or plantation, for a few well-placed specimens around the margins will have an almost magical effect in transforming the bleak and lifeless woodland into a place of life and beauty. But the placing ever so well and artistically of specimens, be they single or in clumps, around the woods is not sufficient, that being too formal a method of dealing with vast forests and plantations of deciduous trees. What is wanted are a few clumps of the Evergreens dotted about towards the centre of the wood. In planting, too, do not forget to use some discretion in laying out the clumps. The cost will not by so doing be one penny more, but the pleasure afforded when we are minus formality and stiffness can hardly be over-rated. A fine old wood of Oaks, Beeches, rugged Birches and welked Planes I would not despise, but even these are made beautiful by the finishing touch of a few clumps of Evergreens. A big old Holly, clothed to the ground with its handsome foliage, is a bright gem for the Lichen-covered Oak stem to rise from amongst, and no one can deny that the contrast is at all out of harmony. The Holly too, has the happy knack of showing off to good advantage when surrounded by tall monarchs of the forest; indeed there it is found in far better form often than when subjected to cold winds and burning suns at intervals. The trees and shrubs that will succeed beneath the shade and drip of trees are many.

A. D. WEBSTER.

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All of our readers who are interested in the improvement of cottage homes are invited to help us to make Cottage Gardening known. It is published at the very lowest price to meet the wants of those for whom it is intended, and copies will be sent for distribution, free, by the publishers, Messrs. Cassell and Company, La Belle Sauvage, Ludgate Hill, E.C.

No. 1105. SATURDAY, January 21, 1893. Vol. XLIII.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—Shakespeare.

TREES AND SHRUBS.

HARDY AZALEAS.

IN THE GARDEN of January 7 brief reference is made to the beautiful new hardy Azalea named Mrs. Anthony Waterer, which represents a splendid example of the Knaphill race. The beautiful bush of it at the last Temple show of the Royal Horticultural Society, when, as stated by "T," it received the award of a first-class certificate, was one of the best things in the show, and interesting as testifying to the good work accomplished by Mr. Waterer in the improvement of this class of hardy shrub. Although of great beauty, the hardy Azalea is too seldom seen in English gardens, but perhaps by exhibiting large bushes of the finest types at the more important exhibitions it will make greater headway in popularity than it has done in the past. It is not from the want of varied attractions, as pointed out on more than one occasion in THE GARDEN, the shrubs being effective in the scenery and producing a profusion of bloom of brilliant, yet varied colouring, the sweet, powerful fragrance scenting the air for many yards around. During the past few years Mr. Waterer has been raising up the remarkable race that one sees at Knaphill, and the variety Mrs. Anthony Waterer is one of the latest triumphs in the hybridisation of the hardy Azalea. We get the tier-like arrangement of the branches to perfection, the flowers of splendid form and of the purest white, save for a tinge of yellow in the centre of the upper segments. Such a beautiful variety might be grown for cutting, and its fragrant white flowers would no doubt be in large demand. There is a great future for the hardy "Knaphill" Azaleas, as we believe it is proposed to call them, and by hybridisation the season is being greatly lengthened, as we remember in the middle of July last year Mr. Waterer showed a bunch of flowering late-blooming types, even then not fully expanded. The Azaleas are not tender, living unharmed through the severest winters, but it is wise not to expose the bushes too much, as late frosts sometimes inflict injury on the heavy masses of flowers. If the variety Mrs. Anthony Waterer is a model of its kind, the same fine character in the flowers there displayed runs throughout the newer seedlings, which are very different from the old types, the flowers of which were more like those of a magnificent Honeysuckle. We get in the newer acquisitions broad, robust segments, that stand up boldly, the upper ones slightly thrown back as if to show up the colouring, whilst a great advance is manifest as regards size, a few we measured being over 3 inches across, and in one instance fully 4 inches. Hand-in-hand with this great improvement in the form and size of the flowers is a greater range of colours, varying from the richest crimson to the purest white, through shades of salmon, yellow, orange, carmine—a galaxy of brilliant and refined tones, a perfect blaze of resplendent colour to fill the garden with beauty. This great result has been accomplished by steady work, perseverance, and a firm resolution to reach a certain ideal in the mind's eye of the hybridist. We know what has been done with the Rhododendron, and the same transformation is going on with the hardy

Azalea, the selecting and trial of chosen varieties out of thousands of neglected seedlings being pushed forward to obtain still greater perfection in leaf, flower, and colours than has hitherto been accomplished. There are few gayer pictures to be seen than during the flowering of the hardy Azaleas at Knaphill, the bushes spreading over many feet of the rich loamy soil, displaying perfect mounds of blossom, the deep orange and yellow varieties being perhaps the most conspicuous not only for size of bloom, but also for intensity of colour. Several years elapse before it can be known whether a variety is fit to retain, and comparatively few are worthy of a permanent place. It is not usual for varieties to receive a name, but such a variety as Mrs. Anthony Waterer deserves distinction. Years ago it was a common practice, as may be seen from the pages of Loudon, but it is not to be recommended unless the variety is of special excellence.

Splendid effects may be gained by planting judiciously these beautiful shrubs, and they provide gay colouring at two seasons of the year—in June when the flowers are produced, and in the autumn when the leafage dies off with ruddy colours, crimson and brown mingling and forming a striking picture. The hardy Azaleas may be grouped with happy effect on the outskirts of the lawn, forming bold masses, and in the woodland, as at Kew, they may be planted freely. A large bush of such a variety as Mrs. Anthony Waterer, backed with trees or late shrubs, would create a distinct and attractive feature, the leafage of the trees bringing out the purity of the fragrant Azalea flowers. Under such conditions the hardy Azalea is very telling, and in ordinary loam, well drained, it will succeed; but the position should be moist, cool and not exposed to the cold cutting winds of spring. Many English gardens, even if not of great dimensions, can provide these simple conditions, and they gain much by free, bold groups of these charming shrubs, which have been brought by skilful hybridisation and careful selection to a high state of perfection.

Grafted Lilacs.—Recently the attention of our readers has been called to the serious inconvenience of grafting Lilacs on Privets. Collections of this excellent plant bought in France often did no good in our gardens, owing to this practice. Messrs. Lemoine, of Nancy, now multiply them almost entirely by cuttings, so that we may hope some day to see the many interesting Lilacs of France well grown in our gardens. We believe that many fine plants have disappeared from private collections owing to the pernicious practice of indiscriminate grafting.—Field.

Single Kerria japonica.—This Kerria is not often seen in private gardens; in fact, there are but few who are acquainted with it. I never met with it before I came to this place and found a good plant growing in a shrub bed in the pleasure grounds. This plant was given the owner of this garden by the late Sir A. Trevelyan, Bart., of Nettlecombe Court, near Taunton, who was a devoted lover of hardy plants and shrubs, and had a beautiful garden that contained many rare and choice things. When in this garden some three years ago I saw several fine plants of this Kerria. The plant here is of good size. It grows somewhat slowly and is fairly compact, needing but little pruning.—F. A. C., Forde Abbey, Chard.

Berberis nepalensis.—This grand and stately member of the Ash Berberries (Mahonia) is hardy in the more favoured districts of England, while in many others it will pass through most winters with little or no injury, but if the foliage is at all seared a good deal of its beauty is lost. When planted out in a cool conservatory with ample space allowed for the full development of its hand-

some leaves, the Nepalese Barberry forms a very striking feature, whose beauty is still further enhanced when crowned with a profusion of golden yellow blossoms. Its usual season of blooming is during the early months of the year, and at that time the brightly coloured blossoms are especially valuable, while they also possess an agreeable fragrance. Being almost hardy this Barberry is very useful for planting in structures where the heating accommodation is somewhat limited. While several North American forms of the Ash Barberry are among our most beautiful evergreen flowering shrubs, the hardiest of the Old World species is *B. japonica*, which in the open ground is the earliest of all the Berberies to unfold its blossoms. This species is a sturdy growing plant with stout erect sparsely-branched stems, clothed with leathery, dark green pinnate leaves, which on a flourishing specimen will be often nearly, if not quite a couple of feet long. The blossoms, which are borne in erect spikes just overtopping the foliage, are of a pale lemon-yellow, and in mild winters often open soon after Christmas. The rich purple-coloured berries of this Barberry are also later on a very noticeable feature. This species is not always met with in a flourishing condition, as in dry, sandy soils the leaves lose a good deal of their richness of colouring upon which much of their attraction depends. Fairly good soil that is not dried up during the summer will suit this Barberry best, while it is also fond of a little shade.—H. P.

FERNS.

TASSELLED FERNS.

MANY people object to the crested Ferns, but I cannot see why they should do so. The tasselled kinds, which are indigenous to our own islands, are more numerous than the exotic kinds, and I saw a nice collection of the crested British kinds last season. I will here mention some of the best kinds that have crests. I do not, however, quite agree with T. A. Jenkins, who writes to me saying, "No other varieties are worth a place in the fernery." In the first place I will notice the Lady Ferns, of which there are many magnificent forms. What could have been Mr. Moore's feelings when he first found the variety multifidum near the famous spot, the Seven Churches, in the County Wicklow? Only one clump of it, however, was then found, I was told. It has been found in other places in Ireland since, and also both in Scotland and England. There are many forms of it, all of which are beautiful, including *Elwerthi*, *Vernoniae cristatum*, *glomeratum*, *acrocladon*, the many forms of *Frizzelli*, *mesem bryanthemoides*, *corymbiferum*, and the wonderful Scotch form *Victoriae*. *Lastreas*, again, yield a goodly number of fine varieties. Amongst these is *Filix-mas cristata*, which no person having a fernery should omit; *F.-m. grandiceps*, *pseudo-mas ramosissima*, *ramo-cristata*, *polydactyla*, and many others of this section. *L. dilatata* produces some very elegant tasselled kinds, amongst which may be noted *folioso-digitata*, *cristata gracilis*, and *polydactyla*. The sweet hay-scented species affords one variety well deserving of a place, viz., *L. æmula cristata*, a charming addition to any collection of these plants. Being an evergreen plant, it is all the more attractive. Turning from these to their near allies, the *Polystichums*, we find that, although there are only about three species which are natives, we have a large number of crested forms and other varieties. As these are more or less evergreen, they make splendid additions to the cold house or other such-like place for winter decoration. Amongst the tasselled forms are *P. angulare grandiceps*, a fine large crested form, having the pinnae as

well as the points of the fronds crested. *P. angulare acrocladon* is another plant of great beauty, having the points of the much-divided fronds all crested, but the pinnae are not tasselled. *P. a. Thompsonianum* is another fine plant, having the points of the fronds heavily crested. *P. a. cristatum* in all of its forms is also beautiful; so also is *P. a. aculeatum acrocladon*, a truly beautiful Fern, the top being much-branched and forming an immense large crest, while the points of all the pinnae are neatly tufted. Then we have another fine form in *corymbiferum*. Of the Hart's-tongue Fern the crested forms are almost endless, but amongst the best must be named *ramo-cristatum*, a grand form, *grandiceps*, and *cristatum*. Another curious kind is *capitatum*, with heavy terminal crests. Other very beautiful forms are *Coolingi*, *Malcomsoni*, and *sagittato-cristatum*, all heavily crested. I must not forget to mention the common *Polypody*, *P. vulgare*, of which there are a few tasselled kinds, including *grandiceps*, a beautiful plant, *cristatum*, and *bifido-cristatum*. Next comes the Hard Fern (*Lomaria Spicant*), with hard, persistent, and evergreen fronds, which make it desirable as a pot plant. To have these plants grow well they should be potted into good leaf-mould, to which have been added a little peat, loam, and sand. The plant wants good drainage and plenty of soft water. In *L. Spicant glomerata* we have a densely crested form, in *Aitkeniana* a much-branched frond, and in *ramo-cristata* a form much branched at the apex, each branch bearing a good-sized crest; *multifurcata*, *flabellata*, *polydactyla*, and *serrata rigida* are also pretty. The two crested forms of the Royal Fern, *Osmunda regalis cristata* and *ramo-cristata*, are also worthy of a place in any collection.

WM. HUGH GOWER.

NOTES OF THE WEEK.

Adiantum Legrandi.—Although not by any means a new Fern, yet it is far from being common, being admirably adapted for button-hole flowers. It is best described as a close and dense-growing *A. gracillimum*. It is not adapted for growing into large specimens, and not being a strong grower it does not increase rapidly, but sufficiently so to keep up a fair stock.—A. Y.

Chrysanthemum W. H. Lincoln.—My reason for calling attention to this *Chrysanthemum* at this season is to note what an excellent kind it is for late blooming. I have now plants (the middle of January) in excellent flower. These were grown on a bush plant which was not disbudded, the result being that the terminal buds are open at this date. The flowers do not, however, open in sprays, but singly; but their size amply compensates for any deficiency in this respect.—A.

The Claret Vine.—A rod from a plant on the outside, introduced into an unheated shady fernery here, yearly produces clusters of fruit which from their almost jet-black colour and covering of a dense bloom in combination with the superbly hued fading foliage are very ornamental. The berries are small, not larger than Peas, with a juice of almost inky blackness, yet when quite ripe they are not to be despised for the table by those whose palates incline towards a pleasant tartness. Amongst hardy plants there is not perhaps one to be found with such gorgeous autumn foliage, not excepting the Virginian Creeper, but the addition of fruit clusters, which it does not appear to yield in the open air, contributes greatly to its attractiveness.—J. M., *Charmouth, Dorset*.

Begonia Gloire de Sceaux.—A grand group of the above variety at the meeting of the R.H.S. showed how valuable it is at this season! The

group was charming on account of the beautiful metallic foliage, in addition to the rich deep rose-coloured blooms. Mr. Jennings is to be congratulated on such well-grown plants. It was deservedly awarded a first-class certificate, and it is to be wondered at that no certificate had been previously awarded, as the variety is not new. This *Begonia* is not suitable for the London district, as the fogs cause the blooms to drop wholesale, and without great care the foliage also, so that it is necessary to warn intending cultivators not to expect good results near a town. With pure air and good culture the above variety is one of the best for winter-flowering, growing and blooming freely.

Pernettyas at Oakwood.—*Pernettyas* fruited especially well with us last year, and have been greatly admired by visitors to the garden at Oakwood. The birds have now eaten some of the berries, and the hard frosts have injured others, but we can still pick handsome bunches from the lower parts of the bushes. The plants came originally from Mr. Davis, of Hillsborough, County Down, the plants shown by him in the Drill Hall having tempted me to order a complete collection. We find them grow best in a mixture of vegetable soil and loam in rather damp situations, and fruit best in sunny places. There are so many shades of colour ranging from white to deepest crimson, that they help the garden in the duller time of year, and come in useful for church decoration both at the harvest festival and at Christmas.—G. F. WILSON.

Carnation Celia.—In THE GARDEN (page 8) "High Peak" writes that he cannot find *Celia* in any of the catalogues he has looked through. Messrs. Veitch sent out this fine border *Carnation*, and it may be found in their list of varieties. I am glad to know *Saccharissa* is so good for autumn flowering, and that it is sweet. *Pride of Penshurst* is almost, if not quite, scentless. Being of good constitution, the colour much in demand, and also late flowering, one cannot do without it. I looked over a large collection of fine new varieties last season (French seedlings), but was much disappointed to find in nearly every one that I was especially taken with that perfume one expects to find in the *Carnations* was almost if not quite absent. There are many beautiful *Carnations* now, none of them, as far as I am aware, with the delicious perfume of the old *Clove*. Hybridisers should try and perpetuate that delicious odour in the new varieties that are continually being raised and put before the public.—W. ALLAN, *Gunton Park Gardens*.

Fremontia californica.—I am disappointed that only a single letter on the subject of *Fremontia californica* has appeared in your pages, and that merely telling us how difficult it is to grow. The difficulties we knew before, and if my memory serves me right they have been mentioned before in THE GARDEN. But has no skilful nurseryman yet surmounted these difficulties? Has anyone even tried? We all know plants of which the cultivation has afterwards become easy that on their first introduction to this country have puzzled gardeners. I would mention as one the *Bougainvillea*. *Fremontia californica* is so grand and beautiful a shrub, that it will well repay all the care and trouble that can possibly be spent upon it. I attribute the neglect of it as much to the fact that very few have ever seen it in flower, as to the difficulties attending its propagation. It would be interesting to know if it is cultivated in California or elsewhere in North America, or anywhere on the continent of Europe. I only know of two places where it really succeeds in England; one in the Isle of Wight, the other in Cheshire—both, be it observed, near the sea.—W. WICKHAM.

Acacia longifolia.—Flowering as this *Acacia* does in pots 8 inches or 10 inches in diameter, it may be included in the comparatively small number of species which repay cultivation in small houses where room cannot be afforded for the more satisfactory plan of planting them out. Although it is not perhaps so beautiful when in

flower as *Acacia armata* or *A. pulchella*, it possesses the great advantage of blooming some months earlier and at a time when the furnishing of the conservatory with flowering plants is not a very easy matter. It is at the same time a very handsome plant, and produces its cylindrical heads of flower in great abundance if properly grown and ripened off in autumn. Each head of blossom is $1\frac{1}{2}$ inches long and bright yellow. The oblong phyllodes (leaves) are deep green and about 4 inches in length, with prominent longitudinal nerves. A most important point in the cultivation of this and other Australian *Acacias* is to thoroughly ripen off the growths in autumn; if the plants can be plunged out of doors from June up to September this practice should be adopted, and with specimens planted indoors every means should be taken to give them plenty of light and air. *Acacias* like to be kept moist at the roots at all seasons.—B.

Dendrobium Farmeri.—Although this species is, as a rule, to be seen in bloom during the months of April and May, we have noticed it in flower during the past week at Kew. The section of *Dendrobium* to which it belongs—that, namely, which also includes *D. thysiflorum*, *D. chrysotoxum*, and *D. densiflorum*—is remarkable for the soft and delicate colour of the flowers, and the species under notice is no exception to the rule. Like the other species mentioned, it bears its blossoms in long pendulous racemes from near the top of its square, four-angled stems. Each flower is $1\frac{1}{2}$ inches across, the sepals and petals of a pale straw colour tinged with delicate rose. The lip being of a soft golden yellow makes a pretty contrast, its delicacy of colour being still more improved by the pubescence on the upper surface. The value of several members of this group is lessened on account of the short duration of the flowers, those of *D. densiflorum*, for instance, lasting only four or five days. *D. Farmeri* remains in beauty, however, at least twice as long as that. The species is spread over a wide area in its wild state; from Moulmein it reaches northward to the Himalayas. It was brought into cultivation in 1847, having, like so many other of the older *Dendrobiums*, been sent to England from the Botanic Garden at Calcutta.

Dendrobium Linawianum.—Of the several well-marked groups constituting the genus *Dendrobium* there is none of so much value and importance from a purely horticultural standpoint as that to which *D. nobile* belongs, and is, indeed, the principal member. *D. Linawianum* is not only of the same group, but also bears a close resemblance to some of the best varieties of *D. nobile*. It is one of the oldest of exotic Orchids, having been introduced as long ago as 1824, but for some reason or other it is not now common. It has erect stems, as in *D. nobile*, and they are of about the same height but flatter and show distinct angles; the leaves are also similar in size and shape and remain two seasons on the stems. The flowers are produced from the upper nodes in twos and threes, and individually measure about 2 inches across. The sepals and petals are white at the lower half, changing towards the apex into a bright rosy-purple. The same arrangement of colour occurs on the lip, which is, however, marked in addition with two spots of purple in front. We have found this species to thrive under the same conditions as *D. nobile*, which means giving it abundance of heat and moisture during the growing period, gradually reducing these when the stems have reached their full size, until finally the plants are suspended near the glass in a dry light house with an average temperature of about 50° in winter. As the flower-buds show up the plants are returned to rather moister and warmer conditions. The species is a native of China and Japan, the credit of its first introduction to this country belonging to the Royal Horticultural Society. It has been in flower since the new year. Messrs. Williams mention a variety called *majus* with flowers 4 inches across.

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FLOWER GARDEN.

TALL-GROWING WINDFLOWERS.

AMONGST the hundreds of hardy flowers grown in gardens, few genera are more popular than the Windflowers. They are pretty evenly distributed in temperate regions all over the world, and from the tiny vernal Windflower (*A. vernalis*) of our high Alps to the gigantic *A. Fannini*, recently introduced from Natal, where it blossoms from September to December, we have almost every gradation in height, habit, size and colour of flowers. From the dazzling *A. fulgens*, through the magnificent and varied shades in *A. coronaria*, to the insignificant *A. pennsylvanica* we have yellow, purple, blue, &c., all of them with a distinguishing character. The new *A. Fannini* has large, white, fragrant flowers, 3 inches in diameter, its leaves, when full size, measuring from 1 foot to 2 feet in diameter. It is said to have stood our winter in the open air, but we are not aware of its having flowered outside yet. It is, however, likely to prove a useful flowering plant in the cool conservatory, where it should be planted out in a light place and plenty of room allowed for development. Windflowers, as a rule, prefer deep rich soil, light and gritty for the running kinds, and rather on the moist side for those from the high alpine pastures. If avoidable, they should never be disturbed. The majority of them are readily propagated by root division and by seeds, which they ripen freely in most seasons. These should be sown as soon as gathered, when they will quickly germinate, and a season thereby be saved. The following notes refer only to the tall-growing species known to us in cultivation :—

ALPINE WINDFLOWER (*A. alpina*), although one of the very commonest species in alpine districts, being found on almost every mountain in Southern Europe, is by no means so plentiful in gardens as one would suppose. This may in a measure be accounted for by its slow growth, its dislike to being disturbed, and the probability of its being what we call a short-lived plant. It is a variable species, and has a large and complicated synonymy, so many botanists having named the merest varieties and classed them as species. The most distinct variety known to us is one called *sulphurea*, *A. alpina* var. *apifolia* of the botanists. The flowers in this plant are pale lemon or sulphur. It makes a charming border plant, beautiful in flower and also in seed, the bunches of long feathery tails being very effective in autumn. The type grows from 1 foot to 2 feet in height, forming long strong roots which require a deep soil well drained, and with a quantity of old mortar mixed with it. The flowers are white, pale purplish outside, distinct and showy. The leaves of both are deeply cut, fern-like, and effective when grouped. It flowers in April and May.

THE JAPAN WINDFLOWER (*A. japonica*) is decidedly the finest of the tall-growing *Anemones* yet introduced, and one of our best autumn-flowering hardy plants. It is a native of damp woods on a mountain called Kifune, in the neighbourhood of Miaho, Japan, and was first introduced into England by Fortune. It has lately been found in Burmah, however, and may have a still wider distribution than was supposed. If disturbed, the Japan Windflower takes a long time to become established again, two or even more years being required to overcome interference unless very carefully handled. Our plan, which we think a good one, is to establish offsets in shallow boxes, and plant out the whole without breaking the soil. The white variety *alba* or *Honorine Jobert* is particularly handsome and easily managed; the great secret seems to be to prepare at first a good deep bed of rich heavy soil and to leave the plants alone. *A.*

j. var. *hybrida* or *elegans* is said to be a cross between *A. japonica* and *A. vitifolia*, a nearly allied Himalayan species. We have no means of either disputing or verifying this statement, but from our knowledge of *A. vitifolia* we would doubt very much its being one of the parents; the probabilities are, as in the case of *Honorine Jobert*, that it is a break, or sport, or else a seedling. When fully established, and showing signs of degeneration, supply the needful in the shape of a heavy top-dressing, and this left on the ground all through the summer will be found beneficial.

A. NARCISSIFLORA, of which the cut on p. 43 represents the flowering stem, is a charming hardy species distributed in the Alps of Central and South Europe, Western Asia, Siberia, North-west America,

Windflowers goes, one of the worthiest of a place in the flower border or rockery. It is found at an elevation of 10,000 feet to 12,000 feet above sea level, and is quite hardy enough to withstand all the vicissitudes of our severest winters. It is not at all particular apparently either as to soil or situation, and flowers with a profusion only surpassed by the Japanese species. It usually blooms in June and July, coming in between the earlier and later forms, continuing in flower until succeeded by *A. japonica*. In partially shady positions it grows higher than in the open, varying from 1½ feet to 3 feet, and bearing an abundance of flowers quite equal to any of the other species. It has been confounded with *A. obtusiloba*, a species with golden yellow flowers, not, so far as we know, in cultivation at present. In *A. polyanthes* the stems and leaves are densely silky, the latter five to seven-lobed, about 4 inches in diameter, and having long petioles. The flowers are about 2 inches across, many in an umbel, white or tinged purplish on outside and very showy. It is increased either by seeds or division. The seeds sown when gathered give no trouble.

A. RIVULARIS.—This is a well-known garden plant and a good second to *polyanthes* and others of the tall-growing section of Windflowers. It is perhaps one of the easiest to manage, making an excellent border plant and not being at all particular as to situation. The roots do not run so much as in some of the other species, and it is therefore not so troublesome to keep in its place. The rootstalk is stout, the lower leaves three times divided, the segments lobed and evenly serrated. It generally grows from 2 feet to 3 feet in height, bearing flattened heads of many flowers, star-shaped, 1 inch to 2 inches in diameter, white and often purplish tinted outside. It flowers in summer, and is perhaps the commonest Windflower of the temperate Himalayas. Increased by seeds and division.

THE SNOWDROP WINDFLOWER (*A. sylvestris*) is not, strictly speaking, a tall-growing species, and should hardly be included here were it not for its charming free-flowering habit, its woolly seed heads in early autumn, and its adaptability to the wild or natural portions of the garden. It should be naturalised in quantities both in our woods and shrubberies, where, if the ground is free from strong weeds, it will soon establish itself and form large groups, under which condition it is always seen to best advantage. It flowers in May and June, the blooms being followed by the woolly seed-heads, which hang loosely together for a long time. The flowers are large, white, and in the bud state drooping and somewhat resembling Snowdrops, hence the common name. It is easily propagated by offsets, which may be planted as desired when taken off. It is a native of Central Europe and Siberia, and should be in every collection.

A. VIRGINIANA.—An American species of no mean beauty, but unruly in habit, and only fitted for the shrubby border or the woodland, where it can run at will and take care of itself. The flowers, which are pure white, are produced all through the summer. Its near ally, *A. pennsylvanica*, is a weed that never ought to find a place in the garden. Also a native of North America.

A. VITIFOLIA.—A rare and beautiful species from Nepal, where it is said to be one of the commonest of native flowers. It is one of the reputed parents of *A. japonica* var. *hybrida*, and although much resembling *A. japonica*, it is readily recognised from



Anemone rivularis. Engraved for THE GARDEN from a photograph sent by Miss Wolley Dod, Edge Hall, Malpas.

and also in the Himalayas. It is by no means a common plant in gardens, although a very useful and showy species. It is one of the freest flowering in the group, each stem carrying (see cut) a large head of fine delicate white flowers in a setting of bright green leaves, and making in itself quite a charming bouquet. It does well in the ordinary border, requiring a sunny spot and rich light soil. It makes a fine display in early summer when doing well. It is said to be allied to *A. polyanthes* by intermediate forms, none of which are known to us in cultivation at present. *A. narcissiflora* rarely exceeds a foot in height; the leaves are palmately five-parted, and the divisions deeply cut into narrow linear lobes. It deserves a place in choice collections.

A. POLYANTHES.—This is one of the most charming and, so far as our knowledge of Himalayan

that species and flowers much earlier. It thrives best in a somewhat shady spot, or where the soil is stiff and rich it will do well in the open. It gets damaged in severe winters and should be protected when the weather is at all severe. It grows from 1 foot to 3 feet in height; the lower leaves are from 5 inches to 8 inches in diameter and deeply five-lobed. They are smooth above, but densely covered with a thick tomentum beneath. The flowers are borne in decomposed flattened panicles, pure white, and about 2 inches in diameter. It may be increased by division or seeds.

D.

THE LILIES OF CHINA AND THIBET.

IN a note addressed to the International Botanical and Horticultural Congress, which was held at St. Petersburg in the year 1884, Mr. H. J. Elwes, one of the monographers of the genus *Lilium*, mentioned only ten species of this genus (and three of these doubtfully) as being indigenous to the Chinese territory and Thibet. He added, however, that it was probable that other new species would be discovered in other parts of these regions, and especially in the mountainous districts of Western China.

Since that time, which is not so very far back, the progress of events has fully justified Mr. Elwes' anticipations, so that at the present date, counting only the species which have been received at the herbarium of the Muséum at Paris, we can reckon up twenty-four species of *Lilies* as belonging to the flora of China and its Thibetan frontier, and of which fourteen species have only been met with in the provinces of Yun-nan and Szechuen—that is to say, in the localities which Mr. Elwes had indicated as likely to afford fresh accessions of hitherto undiscovered species.

It must be admitted, moreover, that the number of species here quoted is by no means a final or exhaustive total, as it is only the number which has resulted from the collections made by three French missionaries (MM. Armand David, J. Delavay, and M. Farges), who could only search for plants in a few places. We may now, therefore, affirm that the mountain ranges of China must be considered as the great central native home of the genus *Lilium*, which in this respect is analogous to many other genera, of which in Europe we have only a more or less feeble reflection—for example, *Ligularia*, *Leontopodium*, and *Rhododendron*, or even *Primula*, *Gentiana*, &c.

The study of the species of the genus *Lilium* (of the Chinese and Japanese species, at least) has been rendered very difficult by the multiplicity of the forms under which they are found in cultivation. In fact, contrary to what is usually the order, namely, that the wild forms of plants are described first, that is, before the species have been in any way modified by the gardener's operations, we find that many *Lilies* have been described for the first time from cultivated specimens. These *Lilies* have, for the most part, really come from the countries of which they are said to be natives, but their introducers found nearly all of them in the gardens of those countries, where they had become more or less modified in form, the Chinese and Japanese gardeners being, as we all know, past masters in the art of transforming plants. Hence it has resulted that horticultural publications abound with magnificent figures of *Lilies*, which we can hardly term exaggerated when we compare them with the cultivated subjects from which they were taken, but which too often mislead the botanist who endeavours to identify these illus-

trations of highly improved forms with the humbler wild types of the same species. I may here remark that in these cultivated subjects the form of the perianth is usually altered, and to such a degree, that it is almost impossible to recognise a *Lilium japonicum*, for example, when one sees this plant as it is figured in our horticultural journals or even in Mr. Elwes' monograph. The group-classification of the species of *Lilies* being based upon the characteristic form of the perianth of each species, serious difficulties arise when one has to compare a cultivated form with its wild type or what is considered to be such; and the difficulties are still further increased by the circumstance that the straight or revolute direction of the divisions of the perianth is fully established at a late period only, and usually after the fertilisation of the flower.

With the object of, as far as possible, getting free from this double source of perplexity, I have sought for other characteristics whereby the examination and comparison of any two *Lilies* might be effected in a more practical way and with greater precision. I think I have discovered several characteristics of this nature which, it is rather surprising to consider, have not hitherto attracted attention. Thus the filaments of the stamens, which are glabrous in the greater number of the species, are in some others furnished with papillose hairs, and this is indeed the only characteristic whereby it is possible to accurately distinguish *Lilium Browni* from *L. longiflorum*. The nectariferous furrow likewise furnishes reliable points of distinction in the case of certain species which in other respects are very much alike. Thus this furrow may be reduced to a very slight depression at the midrib of the petal, which, however, always exhibits the peculiar viscous secretion in its lower part, and of this form of the furrow excellent examples may be seen in the species of the *Cardiocrinum* section, and also in *L. speciosum*. In some other species the nectariferous furrow is margined on each side by a thin plate-like process, which is more or less prominent and either entire or fimbriated. Sometimes this plate-like process is reduced to a slight thickening of the margin of the furrow entirely covered with papillæ. Some of these peculiarities have already been described by Mr. Baker, but he has never dwelt upon the use that might be made of them for purposes of classification.

It will be readily understood that these distinctive features, which can be examined and noted without any difficulty, taken in combination with some other points of difference, enable anyone to distinguish different species from one another with much greater ease and exactness than is afforded by the method of forming a judgment from the more or less spreading or more or less involute trend of the divisions of the perianth.

It is to be hoped that the characteristics which are noted from the smooth or hairy surface of the filaments of the stamens, and also those which are exhibited by the nectariferous furrow, will prove to be the means of revealing the true origin of some cultivated forms, which is at present rather doubtful; and this consideration has induced me to draw up the following synoptical table, which, although it only refers to the Chinese species in the herbarium of the Muséum, might be very easily extended so as to include all the known species of *Lilies*:—

SECTION I.—CARDIOCRINUM.

Leaves heart-shaped, nectariferous furrow broad, bare and glabrous.

A. Inflorescence centripetal, the lower flowers opening first.

Lilium cordifolium (Thunb.).—Lower leaves clustered together in a whorl at the distance of from 8 inches to 12 inches from the bottom of the stem.

L. giganteum (Wall.).—All the leaves disposed in a scattered manner from the bottom to the top of the stem.

B. Inflorescence centrifugal, the upper flowers opening first.

L. mirabile.—A new species.

SECTION II.—EULIRIUM.

Leaves linear or lanceolate, and narrowed at the base.

A. Bulb thick, ovoid, formed of numerous fleshy scales which are closely imbricated.

a. Perianth very large sized, narrowly tubular—at least in the lower half.

L. longiflorum (Thunb.).—Nectariferous furrow and filaments of the stamens glabrous.

L. Browni (Brown).—Nectariferous furrow and filaments of the stamens bearing short papillose hairs.

b. Perianth regularly cup-shaped from top to bottom; divisions straightly perpendicular to the base of the perianth or inclining outwards at the upper part only.

† Flowers white or with a slight purplish tinge on the outside of the segments.

a. Filaments of the stamens and nectariferous furrow covered with small papillose hairs.

L. formosum.—A new species. Flower very large.

β. Filaments of the stamens and nectariferous furrow entirely glabrous.

L. myriophyllum.—A new species. Flowers very large, and leaves very numerous on the stems.

L. yunnanense.—A new species. Flowers averaging 3 inches in length. Leaves not numerous.

†† Flowers of a cochineal or wine-lees red colour, and almost always spotted with brown or black.

a. Style much longer than the ovary.

L. Delavayi.—A new species. Nectariferous furrow bare and glabrous.

β. Style of the same length as the ovary or barely exceeding it.

L. concolor (Salisb., var. *pulchellum*).—Nectariferous furrow margined with a papillose plate-like process.

c. Perianth having the divisions completely revolute—at least, when the bloom is nearly over.

† Divisions of the perianth having large-sized papillæ scattered over their interior surface.

L. speciosum (Thunb.).—Nectariferous furrow bare and glabrous.

†† Divisions of the perianth without any large-sized papillæ on their interior surface.

a. Nectariferous furrow margined with a papillose plate-like process.

* Flowers white, spotted with brown or with vinous-red.

L. Duchartrei (Franch.).—Stem leafless in the lower part and quite smooth, or having a few scattered papillæ.

L. papilliferum.—A new species. Stem leafless in the lower part and covered with small papillæ.

L. lankongense.—A new species. Stem covered with leaves from the base up.

** Flowers yellow spotted with brown.

L. Davidi (Duchartre).—Divisions of the perianth woolly on the veins of the outside, and having only two scales on the inside.

L. Fargesii.—A new species. Divisions of the perianth glabrous on the outside, and having from four to six scales on the inside at the base.

*** Flowers orange-red or bright orange.

1. Leaves narrowly-linear.

L. sutchuenense.—A new species. Perianth marked with large black spots.

L. tenuifolium (Fisch.).—Perianth without spots or only slightly dotted.

2. Leaves lanceolate or lanceolate-linear.

L. tigrinum (Gawl.).—Stem woolly and bulbiferous.

L. pseudo-tigrinum (Carr.).—Stem glabrous, not bulbiferous.

β Nectariferous furrow glabrous and bare.

L. taliense.—A new species. Flowers purplish, spotted with brown.

L. ochraceum.—A new species. Flowers yellow, without spots.

β. Bulb narrow, oblong, formed of lanceolate-shaped scales, which are not very numerous.

L. oxypetalum (Baker).—Divisions of the perianth spreading. Stem bearing from one to two flowers.

γ. Rhizome bearing very small bulbils, each of which consists of a scarious ten-sided envelope in which are enclosed from four to six thick fleshy scales.

L. Thompsonianum (Lindl.).—Divisions of the perianth bell-shaped. Stem bearing many flowers.

DESCRIPTIONS OF THE FOREGOING SPECIES.

Lilium cordifolium (Thunb.) (*L. giganteum*, Franch.).—A Chinese species, found in the province of Kiang-si in mountain ravines near Kiu-kiang. In my "Plante Davidiane" I had thought it possible to refer this Kiu-kiang Lily to the *L. giganteum* of Wallich, but not, however, without some reserve, and described it as an intermediate form between the two species, as it exhibits the large dimensions both of plant and flower which are seen in *L. giganteum* along with the same arrangement of the leaves which is found in *L. cordifolium*. It is described in a note of M. David, its collector, as "a liliaceous plant, growing 6½ feet high, with leaves arranged in a whorl at the distance of 1 foot from the ground." As this arrangement of the leaves constitutes the only characteristic which at present enables us to distinguish *L. cordifolium* from *L. giganteum*, we must set down the Chinese Lily as coming very close to the Japan species, at the same time that we maintain *L. giganteum* to be a distinct specific type.

L. giganteum (Wall.).—A native of China and found in the province of Yun-nan in forests on Mount Maeul-chan, at an altitude of 2500 metres; also on Mount Lopin-chan above Lan-kong; also in the province of Hu-peh, on mountains around Ichang; also on the mountains of Moupine, in Eastern Tibet, on the frontiers of Su-tchuen. A tall-growing species which comes very near the *L. cordifolium* of Thunberg, being distinguished from the latter only by the different arrangement of the leaves on the stem. In *L. cordifolium* the stem is bare in its lower part for the space of about 1 foot, at the upper part of which there is a whorl-like arrangement of leaves, those on the rest of the stem upwards being disposed alternately and having a somewhat heart-shaped base; while in *L. giganteum* all the leaves are placed alternately from the top to the bottom of the stem. Other characteristics which have been mentioned as distinctive ones in the case of these two species are not very constant. M. David, for instance, says that in the *L. giganteum* found at Moupine the lower leaves are of a bronzy colour or spotted with red, so that this feature cannot be peculiar to *L. cordifolium*, as the descriptions of the latter state. Also, the number of the flowers, their erect or drooping inclination, the dimensions of the perianth and the height of the stem are now found to be by no means constant in wild specimens. Mr. Baker says that the seed-capsules of the two species are identical, but the valves of the capsule of *L. cordifolium* have in the middle of their dorsal surface a veining, or at least the rudiments of a veining, which never occurs with the capsule of *L. giganteum*. In connection with this I may remark that in the figure of the capsule of *L. cordifolium*, which is given by Siebold and Zuccarini, the thickness of this midrib of the valves is exaggerated in a very singular manner, so that it has quite the appearance of a keel, which is not correct.

L. mirabile.—A new species from the district of Tchen-keou-tin, in the province of Su-tchuen, China. This, I think, the only species of Lily

in which the inflorescence is centrifugal, that is, in which the upper flowers are the first to expand. It is a very elegant kind with flowers of large size, seven to fifteen in number, placed very close together, narrowly tubular, the divisions of the perianth eventually assuming an inclination at right angles to the tube. Stem nearly 4 feet high. Leaves arranged similarly to those of *L. giganteum*.

L. longiflorum (Thunb.).—Found at Tamsui, in the island of Formosa; also in the Loochoo Islands, and these are the only localities from which I have seen specimens of the plant in a wild state. The specimens which come from the continent of China are all referable to *Lilium Browni*. *L. longiflorum* is largely cultivated in every part of Japan, and is figured in almost all the native descriptions of the plants of that country, but at the same time a foreign origin is assigned to it, and from what Savatier was able to ascertain about it, it appears that the native horticulturists and botanists have a tradition that this species was imported by some famous warrior from certain small islands lying very much south of Kiu-siu, which agrees very well with what we know of its native habitat. In *L. longiflorum* the perianth is entirely white on the exterior, or sometimes slightly tinged with a greenish hue. Its lower half or third part forms a narrow cylindrical tube, while all the upper part is more or less inclined outwards or even slightly reflected. The nectariferous furrow and the filaments of the stamens and also the style are perfectly glabrous in every part. In specimens of the wild plant the perianth is seldom more than about 5 inches long, and its divisions are often very little deflected; all the stem in the upper two-thirds of its length is covered with narrow, linear-lanceolate, closely-set leaves, the lower ones of which are longer and more narrowed at the base, the upper ones becoming abruptly shorter and being somewhat broader comparatively. The characteristics of the leaves and the length of the perianth vary much in cultivated specimens, and this diversity has given rise to numerous specific names, the best known of which are *L. eximium*, Court; *L. Takesima*, Hort.; *L. Yama-juri*, Sieb. *L. Harrisii* (Hort.) is also probably another form of *L. longiflorum*, but I have not had an opportunity of examining either the nectariferous furrow or the stamens of the flower of this Lily.

L. Browni (F. E. Brown) (*L. longiflorum*, Franch., *Plantæ David*, (non Thunb.); *L. japonicum*, forma, Baker).—A Chinese species found in the island of Chusan; also on the hills around Kiu-kiang, in the province of Kiang-si; also in the district of Tchen-keou-tin, in the eastern part of the province of Su-tchuen; also in the neighbourhood of Ichang, in the province of Hu-peh. *L. Browni* exactly resembles *L. longiflorum*, but its flowers are larger, being from 6 inches to 8 inches long in wild specimens, and the divisions of the perianth are tinged with violet on the exterior. The most reliable distinctive characteristic of *L. Browni* is the presence of a more or less dense down of small papillose hairs on the margin of the nectariferous furrow, and on the filaments of the stamens, and frequently on the style. It is rather strange that this peculiar feature is not noticed in any of the descriptions of this Lily, except that in the short description of it in the "Flore des Serres" there is some uncertainty expressed as to whether the filaments of the stamens are not "slightly papillose," but the describer (M. Ch. Lemaire) goes no further than this. Mr. Baker refers *L. Browni* to *L. japonicum*, basing his judgment on the form of the flower, but the shape of the perianth of *L. Browni*, which is exactly the same as that of the perianth of *L. longiflorum*, does not appear to warrant such a reference, if we take as the typical *L. japonicum* the plant which was distributed under this name (and rightly so, as I think) by M. Maximowicz, and which is found in the wild state on the mountains of Senano. This Lily of Senano (which is very well figured in the Japanese work on native plants named "So-Mokou dzousetsu," vol. v., page 74, under the name of "Tamoto juri"—white Lily) is very clearly characterised by

its lanceolate and distinctly stalked leaves, and especially by the open cup-shaped form of the perianth, which resembles that of *L. elegans*, Thunb. (*L. Thunbergianum*, Schult.), but is of the purest white colour. It is certain that if *L. japonicum*, as it is figured in the *Botanical Magazine*, t. 1591, in the "Flore des Serres," pl. 876-877 (*L. odorum*), and in the Monograph of Mr. Elwes, tab. 13 (*L. Kramerii*), is identical with the Lily of Senano, which very probably represents the type of Thunberg, it must be admitted that no other species of the genus *Lilium* has been altered in form to such a remarkable degree by cultivation. I should rather be inclined to think that Thunberg's species is still confined to herbariums, and that the Lily which was long since introduced into Europe under the name of *L. japonicum* is an entirely different species, which at the time of its introduction had previously been modified by the clever Japanese gardeners from some wild type not yet known to us.

L. formosum.—A new species, found on the mountains of Tchen-keou-tin, in the eastern part of the province of Su-tchuen, China. One of the finest species of the genus. Stem about 3 feet high; leaves lanceolate, stalked like those of *L. japonicum*, Thunb. (non hort.); flowers white, broadly campanulate, opened out like those of *L. elegans* (Thunb.), borne erect, one to two in number. Nectariferous furrow, filaments of the stamens and style pubescent, as in *L. Browni*.

L. myriophyllum.—A new species, found amongst bushes in stony places on the Mo-so-yn Mountain, in the province of Yun-nan, China. A superb Lily resembling *L. Wallichianum*, Schult. (non Wight), in its numerous linear leaves, but differing from that species in the characteristics of the rhizome, and also in bearing its flowers erect and in the opened-out form of the perianth. Stem from 3½ feet to over 6 feet high. Flowers white, usually two in number, erect, on short foot-stalks.

L. yunnanense.—A new species, found in meadows and on the hills of Tapin-tze, in the province of Yun-nan, China. Stem from 1 foot to 2 feet high, slender. Flowers solitary or, rarely, two or three, white or slightly tinged with purple on the exterior, resembling the flowers of *L. japonicum* (Thunb.), but smaller. Leaves like those of *L. elegans* (Thunb.).

L. Delavayi.—A new species, found on rocky hills above the lake of Lan-kong, in the province of Yun-nan, China; also on the calcareous declivities of Kou-tou; also in the pastures on the Yang-in-chan Mountain; also amongst bushes at Houang-li-pin, above Tapin-tze. Stem from 1 foot to 2 feet high, slender. Flowers solitary, rarely two or three, like those of *L. candidum* in form, but having the divisions of the perianth more recurved, of a reddish brown colour very much resembling that of the flowers of *Fritillaria Meleagris* and almost similarly marked with dark spots.

L. concolor (Salisb.).—Found in the mountain forests of Géhol, in Northern China. The variety *pulchellum* (Baker) occurs on the Sy-lin-chan Mountain, west of Peking, in Northern China. In all the wild specimens in the herbarium of the Muséum at Paris the divisions of the perianth are marked rather plentifully with dark spots. The variety *Buschianum* is probably only a more robust-growing form of the plant.

L. speciosum (Thunb.).—Found on the mountains around Kiu-kiang, in the province of Kiang-si, China, the only locality from which the herbarium of the Muséum at Paris has received specimens of the wild plant. From time immemorial this Lily has been cultivated in Japan, but no collector appears to have ever met with it outside of gardens in that country. Some authorities are of the opinion that the unspotted, pure white-flowered form (*L. Broussartii*, Morr.) might be the typical form of *L. speciosum*; but, in opposition to this opinion, it may be stated that in the specimens found growing on the mountains near Kiu-kiang the perianth is covered with deep purple spots.

L. Duchartrei, Franch. Pl. David. (*L. speciosum*, Thunb.; var. *gracilior parvifolia*, Duchartre).—Found in Eastern Tibet, on the low mountains of Moupine; also on the mountains around Ta-tsen-

lou, in the province of Su-tchuen, China; also in woods at Kou-tou, above Mo-so-yn, in the province of Yun-nan. Flowers white, dotted with purple; divisions of the perianth obtuse, spreading broadly and curved backwards, but not revolute as in the other species of the Martagon group. Nectariferous furrow margined by a thin plate-like process which is fimbriated with papillæ. M. Delavay found on the Yang-in-chan a Lily very like *L. Duchartrei*, but having purplish flowers more or less spotted with brown, and of which the divisions are narrower and more acute, the leaves of the plant also being linear-lanceolate. This is probably a distinct species. Mr. Elwes (Monogr., pl. 48) thinks that the Moupine Lily might well be a form of *L. polyphyllum* (Dau.), and Mr. MacIntosh (THE GARDEN, Vol. XIX, p. 180) probably alluded to the same plant when he said that, judging from one of M. David's specimens, one might suppose that *L. polyphyllum* grew on the frontiers of China and Tibet. *L. Duchartrei* differs clearly from *L. polyphyllum* in having a short, ovoid bulb formed of broad fleshy scales; also by its very papillose nectariferous furrow; while its yellow-pollened anthers, the invariable absence of large papillæ from the inner surface of the divisions of the perianth, the character of the nectariferous furrow, and the narrowness of its leaves leave no room for confounding it with *L. speciosum*, in which the form of the perianth is also very different.

L. papilliferum.—A new species, found on rocky ground at Choui-ma-ouan, above Tapin-tze, in the province of Yun-nan, China. Stem about a foot high, downy. Flowers one or two in number, drooping at first and finally assuming a horizontal direction; perianth small (about 2 inches long), with a short tube and recurved, sub-revolute segments, and of a dull red colour. This species comes pretty near *L. Duchartrei*, but differs from it in having narrower leaves, a papillose downy stem, and also in the colour of the flowers.

L. lankongense.—A new species, found in China at Lan-kong, on the eastern slope of the Lopinchan Mountain, in the province of Yun-nan; also in the woods on the Hee-chan-men Mountain, at an altitude of 2800 mètres; also in the woods of Kou-tou, Mo-so-yn. Stem from 1 foot to 2 feet high, downy, leafy almost to the base. Flowers solitary, or more frequently two or three, long-stalked, drooping at first; perianth white or purplish marked with black spots; divisions oblong, spreading at a short distance from the base and incurving. Nectariferous furrow papillose. Filaments of the anthers glabrous. This species differs from *L. Duchartrei* and *L. papilliferum* in having the stem leafy from the base up—a very rare occurrence amongst the Lilies of this group.

L. Davidi (Duchartre).—Found on the Tibetan frontier, on the lofty mountains which divide Moupine from the province of Su-tchuen.

L. Fargesii.—A new species found in the district of Tchen-keou-tin, in the eastern part of the province of Su-tchuen. Stem slender, 4 inches or less in height. Flowers solitary, or sometimes from two to ten arranged in a pyramidal raceme; perianth small (2 inches or less in length), yellow, marked on the inside with numerous purple spots; divisions lanceolate, ultimately becoming entirely recurved. Nectariferous furrow papillose (?). Filaments of the stamens glabrous. A very handsome species, coming near *L. Davidi*, which it resembles in habit and foliage, but from which it differs in having the exterior surface of the perianth quite glabrous, and also in having two small fimbriated plate-like processes running parallel to each side of the nectariferous furrow.

L. sutchuense (*L. tenuifolium*, Fisch.; var. punctatum, Bur. and Franch.).—Found in the neighbourhood of Ta-tzien-lou, in the province of Su-tchuen; also on the mountains of the district of Tchen-keou-tin, China. Stem slender, from 2 feet to over 3 feet high. Flowers solitary or from two to four, borne at the extremities of long rigid branches; perianth of a deep orange-red colour marked with numerous black spots; divisions recurving from the middle only, and papillose on the inside near the nectariferous furrow. Filaments

of the stamens glabrous. This is a more robust-growing Lily than *L. tenuifolium*. Its leaves are equally linear, but somewhat broader, and its flowers are nearly as large again and are covered with black spots; the styles also are two or three times as long as the ovary.

L. tenuifolium (Fisch.).—A native of Northern China, where it abounds on all the hills in the neighbourhood of Gébol; also in the province of Petcheli and at Yen-dze-keou, west of Peking.

L. tigrinum (Gawl.).—Found in Northern China; also in the neighbourhood of Peking (a doubtful native habitat, however); also in the district of Tchen-keou-tin, in the eastern part of the province of Su-tchuen, where it is cultivated for the starch which is extracted from the bulb. The herbarium of the Muséum does not possess any specimen from China which can be certainly said to represent the wild plant, which is also found on the Arigawa Mountain, near Hakodate, in the island of Yéso, Japan.

L. pseudo-tigrinum (Carrière).—Found in the district of Tchen-keou-tin, in the eastern part of the province of Su-tchuen, China. Stem devoid of axillary bulbils. Leaves linear or very narrowly linear-lanceolate. Divisions of the perianth narrow-clawed, reflected outwards in the upper half and not revolute from the base, as they are in *L. Maximowiczii*, with which species Mr. Elwes has united it in his Monogram, pl. 40, fig. 4.

L. taliense.—A new species, found on the mountain-neck of Koua-la-Po, at that part of it which stretches up from the road leading from Tali to Hokin, in the province of Yun-nan; also on bare, stony declivities at Kou-tou, above Mo-so-yn, China. A slender-growing Lily, about 3 feet high. Stem roughish with papillæ and without leaves for some distance on the lower part. Leaves rather closely set, linear or narrowly linear-lanceolate. Flowers solitary or two in number, whitish, and either spotted or without spots; perianth very similar to that of *L. lankongense*, but having the nectariferous furrow bare and very glabrous.

L. ochraceum.—A new species, found at the foot of the Tchang-chan Mountain, in the province of Yun-nan, at an altitude of 3000 mètres; also in mountain woods above Tapin-tze and amongst brushwood at Kan-hay-dze. Stem slender, 3 feet to 4 feet high. Leaves linear-lanceolate or lanceolate, all disposed in a scattered manner. Flowers from one to three in number, yellow and without spots; perianth tubular for a third part of its length; divisions oblong, incurving, sub-revolute. Nectariferous furrow bare and glabrous. Filaments of the stamens glabrous, style three times as long as the ovary. *L. speciosum*, *L. ochraceum*, *L. taliense*, and *L. polyphyllum* are the only four Asiatic species of the Martagon group in which the nectariferous furrow is bare and devoid of papillæ. It is only through confounding it with *L. Duchartrei* that *L. polyphyllum* has been ascribed to China—up to the present, at least. This last-named Lily is distinguished by the narrowly-oblong shape of its bulb, which is composed of a very small number of thin lanceolate scales; while in *L. speciosum*, *L. ochraceum*, *L. taliense*, and *L. Duchartrei* the bulb is similar to that of *L. Martagon*.

L. oxypetalum, Baker (*L. triceps*, Klotsch; *Fritillaria oxypetala*, Royle).—Found amongst bushes on the Tchang-chan Mountain above Kouang-yn-tang, near Tali, in the province of Yun-nan, at an altitude of 3000 mètres; also on the slopes of the Maeul-chan, at an altitude of 3500 mètres—China. A small and little-known species of Lily. Perianth very widely opened out, of a pale violet colour, with purplish spots on the throat. Nectariferous furrow bare and glabrous, and not very distinguishable. Style hardly longer than the very short stamens. Bulb narrowly oblong, formed of a small number of rather thin scales. Capsule small (less than 1 inch in length), oboval, truncate at the apex, and having six acute angles.

L. Thompsonianum, Lindl. (*L. roseum*, Wall.; *Fritillaria macrophylla*, D. Don).—Found in cool shady places on the mountain-neck of Yen-tze-hay, in the province of Yun-nan; also among Bamboos on the Tchang-chan Mountain, above Tali, at an

altitude of 3500 mètres; also at Ta-tzien-lou, in the province of Su-tchuen, China. Rhizome bearing numerous stalked bulbils of small size (about a quarter of an inch long) with eight to ten prominent sides and oval-acute at both ends, composed of a scarious envelope which encloses from four to six thick, fleshy, closely imbricated scales.—A. FRANCHET, in the *Journal de Botanique*.

FLOWER GARDEN NOTES.

WITH the lengthening days comes the thought of what one is likely to want for the flower garden in the coming summer besides things already established there, and although the bulk of propagating either by cuttings, seed or division can stand over for another month, the end of January is not too soon for the commencement of the work. Among seeds that may be put in at this time are those of tuberous Begonias (single and double), the silvery Centaureas and all hard seeds which either require a long germinating season, or which represent plants that have to reach a considerable height before they are turned out. Among the latter may be mentioned the trailing Cobæas (both green and variegated), Cannas, Grevilleas, Acacias and the like. These ought to be of good size by, say, the middle of April, so that the hardening off can be thoroughly and satisfactorily performed. I like to be early with all things required as vase or box plants, and indeed with all plants that, having to occupy very prominent positions, should be thoroughly good stuff from the very outset. A few special notes taken last year respecting this particular branch of summer flower-gardening gave the green and variegated Cobæas as the very best subjects for quickly and effectually clothing balconies, balustrades and any similar places against which boxes or pans may be placed. I have previously used the Cobæas sparingly associated with the Canary Creeper and the Japanese Hop; but last year the *Tropæolum* was not satisfactory and the Hop is late in the year in getting at its best, so we shall use the Cobæas alone this season—alternate plants of the two varieties. Two specially good front trailers last year were *Campanula carpatica alba* and *Mme. Crousse Ivy-leaf Pelargonium*; a mixture of these has a wonderfully pretty effect. Old stock of the *Campanula* can be divided and placed in 3-inch pots towards the end of the month, and the necessary number of the Ivy-leaf transferred to similar pots at the same time, and other good things likely to be required and which may also be started early, are nice little plants of *Fuchsias*, *Heliotrope*, tuberous *Begonias*, the woolly *Græphalium* and *Petunias*. I can also recommend the new *Dracena-leaved Beet* if an occasional bit of this colour is required. Among the earliest things to be propagated are *Verbenas* where they are used extensively, the object of this early propagation being to secure good plants some 5 inches across by the beginning of May.

A general examination of all stock plants is advisable early in the year, so as to form a nearly correct estimate of the amount of new stuff required, and a sketch and summary of the work contemplated in the flower garden, and the numerical strength of colours placed in the hands of the propagator so soon as he may be ready for it. This is imperative, as if special colours are wanted in particular positions, there may be a substitute provided if the plants intended for such sites have partially failed, and the amount of old stock in hand does not warrant the supposition that sufficient number could be furnished. Thus if the stock of *Verbenas* is small, an extra batch of seedlings may be raised, or a goodly supply of *Phlox Drummondii* provided in their stead. *Chelsea Gem*, a pronounced and clear variegated *Pelargonium*, dwarf, and compact in habit, or *Centaurea candidissima*, as the height is required, may take the place of a white-flowering *Pelargonium*, and *Golden Harry Hieover Pelargonium* or the dwarf *Golden French Marigold* be substituted for *Calceolarias*. Three special notes taken last year at about the brightest time referred to the advisability of bold planting for large beds, an objection

to a too liberal use of foliage in some situations in connection with what is known as subtropical bedding, and greater care and taste in planting mixed beds, and it may be well to refer to them thus early in the season pending propagating operations. Of the first of the notes, preparations for large beds should include large Fuchsias and Ivy-leaved Pelargoniums with a goodly supply of the Sweet Tobacco, Begonia Worthiana and B. ascotensis, especially the former, variegated Abutilons and free-growing Petunias and Heliotropes. Large-flowering tuberous Begonias may be used, but I do not like them so well for very large beds as the two varieties above named, unless it be as a carpet that is rather thickly studded with bold plants. Very few Pelargoniums are admissible even when they attain a considerable size. I have, however, used old plants of F. V. Raspail as a groundwork for Nicotiana affinis, and the result was a handsome bed. Plants that have been flowering all through the winter are admirable for the purpose; they can remain on a side shelf for a time after flowering, and if headed back slightly will break well and flower all the summer. In the matter of a too liberal use of large fine-foliaged plants in the flower garden, it must be remembered that whilst they may be useful to tone down and relieve masses of bright colour, it is a mistake to employ them almost exclusively in certain spots if the natural surroundings in the way of tree and shrub life already furnish a brave display of many-hued leaves. One of the most ornamental plants of recent introduction for the purpose is probably Nicotiana colossea. It is also of very easy culture. Sown at the same time as affinis and pricked off into boxes, it will make grand plants quite early in the summer. Of the last note, the planting of mixed beds, I think it advisable to suggest a little extra care in this direction, especially as this style is coming rapidly to the front with each succeeding year. A mixed bed tastily arranged with good plants is a capital feature, but another planted haphazard with a lot of weedy rubbish presents only a sorry appearance from start to finish. If a certain number of mixed beds are to be planted, it is well, therefore, to decide early what will be required for them, and let the necessary materials be propagated and set apart for their special benefit. Care should be taken to select those things that are likely to last through the season; refurnishing is a nuisance and the result seldom satisfactory.

E. BURRELL.

Claremont.

Summer Chrysanthemums.—There is so much heard about the Japanese and Chinese Chrysanthemums in the autumn and winter, that we are apt to forget how much we owe to various other members of the family at other periods of the year. The frutescens forms, after all, are, in a general decorative aspect and especially for market purposes, perhaps of much more importance than are any other varieties or species, for they bloom under judicious treatment for fully eight months, will make first class pot plants at any time, are employed in vast quantities for domestic or window decoration, for greenhouses, and for bedding purposes. They can be propagated from cuttings as easily as can any greenhouse or bedding plant we have, and the flowers are of the most beautiful kind for ordinary uses when cut. This frutescens Chrysanthemum does not lend itself to the winning of prizes at shows; hence we hear so little about it. Of hardy annuals, there are the golden-flowered single forms of segetum, the double white and yellow varieties of coronarium, all wondrously profuse bloomers; the singularly varied and beautiful forms of tricolor, some of which may be said to present the prettiest of single or Daisy-like flowers in cultivation. All these we can have from seed with the greatest facility and in bloom for fully five months if sown for succession. Then the giant Daisies are also Chrysanthemums, and leucanthemum, maximum, lacustre, and the tall uliginosum give of perennial forms a wealth of beautiful flowers from June till the end of October. Still, of all these forms little is heard,

little of fuss is made; they give rise, happily, to no wrangling, and are in no danger of being strangled by the cruel love of the rule-of-thumb florist.—A. D.

Verbenas.—Whilst very little interest can be found in Verbenas grown in pots and kept under glass, or planted out in frames where they may produce fine trusses of flower to be bunched for exhibition, there is much that is interesting and beautiful in plants grown in the garden anywhere or anyhow in the summer. Whilst named varieties are still grown in some gardens, and last year I met with stock of Purple King, Scarlet Defiance, and other old ones at Abinger, Surrey, yet the bulk of plants seen in gardens now is raised from seed, which has so far become assorted that plants can be furnished from seed, white, blue, scarlet, and flaked coming fairly true to colour. That form of raising plants is so simple because no trouble is given to put in cuttings in the autumn or to keep them safely through the winter. It is rather a surprise to find that with so strong a taste prevailing for mixed flower beds in the summer, especially of the kind that has a



Anemone narcissiflora. Engraved for THE GARDEN from a photograph sent by Miss Wolley Dod, Edge Hall, Mulpas. (See p. 39.)

carpet of creeping plants and tall plants thinly disposed, seedling Verbenas are not largely employed for carpeting purposes. White, blue, and scarlet hues blend very well, and would make capital groundwork for Fuchsias, Cannas, Indiarubbers, or similar plants. Seed may be sown in warmth during February or early in March, and will with ordinary care give strong, well-hardened plants in 3-inch pots to plant out towards the end of May. It is an advantage that, once well seasoned, Verbenas are fairly hardy, much more so indeed than are many other summer bedding plants. We cannot use Begonias, now so much the rage, for filling beds everywhere, and Verbenas have a grace and elegance about them that even Begonias lack.—A. D.

Sweet Peas.—Quite safe from the attacks of both mice and birds are Sweet Peas when sown thinly in 4½-inch pots and stood in a greenhouse or frame. Perhaps in gardens where there is much to do, every little labour of this description renders doing it well difficult; still, the filling of 100 1½-inch pots with soil, sowing in each one several seeds, adding a little more soil, watering freely

and standing the pots on the floor of a temperate house or in a gently heated frame does not take long, and once done there can be no doubt whatever but that great advantage is gained. If it be desired to have extra early flowers, some of these pot clumps of Sweet Peas may be shifted later into 9-inch pots, and in these be early bloomed. If wanted for the formation of clumps in the borders, they can be turned out about the middle of April, when the plants are 6 inches in height and thus having ample room and well staked will produce clusters of growth and flowers of the most desirable kind. If, on the other hand, wanted to form a long row or line, the clumps turned out from the pots may be divided into two, then be planted in a shallow trench at 9 inches apart, and in that way will soon develop into a beautiful hedge of flowers and foliage. A sowing made in the open ground just at the time these are planted out will give a capital succession for late summer and autumn flowering, and will then be less likely to suffer from the depredations of mice or birds. When sowing the more recently-introduced varieties, it is decidedly the wisest course to sow the seeds in pots. There is sometimes danger from mice even in houses and frames, but in such cases the pests can be dealt with.—A. D.

STOVE AND GREENHOUSE.

NEW PLANTS AT THE TEMPLE SHOW.

At the Temple show in May the following were awarded first-class certificates, the most prominent amongst them being certainly the beautiful batch of fine-foliaged plants from the Continent, well grown and well shown. These were Smilax argyrea, a lovely silvery variety; Tradescantia Regina and T. superba, two superior and distinctly marked varieties of vigorous growth; Dichorisandra musaica gigantea, quite a major form, very handsome; also Lavisia smaragdina, and Stenandrium Lindenii, two promising dwarf plants. Two distinct additions were also to be seen in Pteris tremula densa, which species now appears to be fruitful in sports, and P. serrulata gracilis, an elegant variety, but narrower in the growth. Selaginella elegans comes nearest to S. apoda, but to all appearance freer in its growth. Of plants to which awards of merit were made, note should be taken of Gloxinias Clio, Cicely, and Claribel, three distinct acquisitions, all possessing that dwarf free habit so desirable in this race of plants. Croton Reidi comes nearest to C. Andreanus, but has more rosy markings. Dracæna Barletti, a dark-leaved variety, possesses a good habit, and should prove an enduring kind. The list of tuberous Begonias was further added to by five varieties; Duchess of Westminster (Cannell), a very superior single variety, with finely formed orange-yellow flowers; Duchess of Westminster (Laing), another single, its blossoms of a vivid crimson shade, with a light centre; Laing's Triumph, a wonderfully fine double with rosy pink flowers, fine in form; Picotee, a distinct and beautiful variety, edged with rosy pink, the centre lighter, and Leopold de Rothschild, an extra fine double, with deep scarlet flowers of much substance and good habit. Carnation Mrs. H. Cannell, with rich pink, clove-scented flowers, should prove valuable as a pot plant.

From the time of the Temple show onwards to the end of the year the following additions should be noted as having received awards of merit. Gloxinias furnished further additions in The Beacon, a self-coloured reddish crimson, very rich, and Ensign, a spotted form with broad edging of rosy purple. Caladiums, already very numerous, have decided

acquisitions added to them in Mme. Edouard Pynaert, a fine bronzy red, and in Marguerite Gelinier, in which yellow and pink predominate. *Adiantum macrophyllum striatum*, distinct it is true and very pretty as shown, wants to be seen in a more advanced stage. New Pelargoniums were recognised in Fireball, a deep cerise, and Souvenir, a rosy lilac, whilst in Rosy Gem the flowers are almost self-coloured. In the Ivy-leaved decorative class Rycroft Surprise, a double variety, should be an acquisition, being of good compact habit and very free, the colour a rosy pink. Another decorative florist's flower bidding fair to be useful in its class is *Petunia* Schwester Bonafatia, a very full double, with dark pink fimbriated flowers. Tuberous *Begonia* Meteor is best described as a very superior form of B. Pearcei, and should prove an effective bedding variety. Another called Princess May is a very promising double, the colour a pale primrose, and of beautiful form. Further, in Baronne de St. Didier there is an addition to the light yellow doubles, shown from two sources. The pure white *Gloxinia* Her Majesty is the finest variety yet raised of its colour, the habit excellent, the flowers large, pure in colour, and of much substance. *Campanula pyramidalis compacta* should prove a good addition, the height of the type being frequently too much, especially in low houses. In the compact form this ought to be obviated. At the Fern and *Begonia* conference at Chiswick there were four very promising new exotic varieties of the former shown; these were three forms of variegated members of the *Pteris* family, which were recently alluded to by "Filices" in an article on "Variegated Ferns," no further remarks thereon being necessary now. Another Fern, however, deserves further notice as shown on that occasion, viz., *Nephrolepis davalloides multiceps*, which is dwarfer than N. d. furcans, being of a more compound character; it should become a popular decorative plant. These were all awarded first-class certificates. A beautiful dwarf fine-foliaged *Begonia* received the same recognition. It was named Marie Louise, and as a small-growing variety, as well as in its handsome markings, is an acquisition. Another kind, Mme. Alamangy, received the same honour. This has more of the character of the true Rex type. *Asparagus deflexus* received the same award. It is a most beautiful basket plant, even in a cool house. To tuberous *Begonias* Earl of Cranbrook, Duke of Fife, Lady Gertrude, Picotee, and Lord Esher awards of merit were made; these are all marked advances on the double varieties usually grown. *Coleus* Distinction at the same show was duly recognised. It is a dark leaved kind and a vigorous grower. Later in the autumn two decorative zonal Pelargoniums were duly approved of, one a fine and promising double called Raspail Improved, best described by the adjective added to the original name, and another, Mme. Bondeville, a pale cerise with deeper edges to the petals. *Croton* Beatrice Horsfall received the award of merit. It is a distinct sport (?) from interruptum, and should prove useful in its class. To the following plants first-class certificates were awarded at various meetings following the Temple show, with the exception of the conference meeting, viz., *Ixora Westi* (see coloured plate, Dec. 3, 1892); *Dipladenia atro-purpurea* Claikiei, a distinct variety and free-flowering; *Calla Pentlandi*, one of the yellow-spathed varieties, the richest in colour and the finest yet seen exhibited in this country; *Crinum brachynema*, a very beautiful variety as well as a useful one to supply cut flowers in its season; *Sarracenia Farnhami*, a very richly coloured and most distinct hybrid, quite an acquisition to its class; *Aristolochia gigas* var. *Sturtevantii*, a monstrous flowering variety, and a unique plant, quite remarkable; *Pteris nivalis*, a further addition to the variegated class; *Tacsonia Smythiana*, a richly coloured and promising hybrid; *Dracena australis* var. *rubra*, an extra dark form of D. Veitchi, of robust growth; *Rhododendron multicolor Neptune*, a very profuse flowering variety, pure scarlet in colour; *Hoya imperialis*, quite an old, but still a grand

variety, worthy of extended culture; *Begonia decora*, a dwarf bronzy-leaved species from Malaysia, and *Camellia Sasanqua* (single red), recently described (see p. 519, last vol.). Of Carnations suited to pot culture particular note should be made of Mrs. Leopold de Rothschild, a cross between Miss Joliffe and the old Clove, beautifully scented, of good habit and free flowering, the colour deeper than in Miss Joliffe, the flowers fringed. Mrs. Hemsley is another choice addition (see coloured illustration for March 26, 1892). Another called Yellow Queen, of free growth, should also prove useful, but it will take some time to surpass Germania; this new variety does not apparently burst its pods. Another called George Fry has bright scarlet flowers and the perfume of the Clove, the latter being always a recommendation. Other Carnations will be dealt with amongst hardy flowers, whilst new Chrysanthemums have been so fully described as to require nothing further about them at present. G. H.

Carnation Alice Ayers in pots.—I am aware that this Carnation is not generally recognised as a winter-flowering kind, but that it is worthy of being classed with that section of this useful flower has been evident in Mr. Slade's nursery at Taunton for several weeks past. He has had in a house, the temperature of which was a little higher than that of an ordinary greenhouse, plants in 5-inch pots that have produced as many as six and seven flowers, and this without any special preparation of the plants for winter blooming. The plants I allude to were obtained from layers in the open ground. They were put down early in August last, but seeing that they showed an inclination to throw up a flower-spike when the layers were potted in the autumn, the strongest plants were put into larger pots, with the result I have just stated. I never have seen any more promising plants, even when they had been raised from cuttings early in the spring, and grown on all summer in the usual way. The explanation of the behaviour of the plants referred to appears to be that the variety possesses a vigorous habit which when planted in a suitable soil enables it to form roots as well as numerous roots. The character of the variety is robust, and the size of the individual blossoms is much larger in the winter than is usually seen in those grown specially to bloom at that season.—J. C. CLARKE.

Hyacinthus candicans in pots.—Those who contemplate growing this useful bulbous plant in pots should not lose any time in securing their stock. It is frequently the practice to order them with the seeds at this season, and it is a very good plan. But do not let them lie about for some little time after arrival; this will tend to weaken the bulbs. Rather pot them up at once; three bulbs in an 8-inch pot will answer very well. If there be no frost in the ground after this work is done, it will be found a good plan to plunge them out of doors, covering the pots some 2 inches or 3 inches with ordinary soil. If given one watering no more attention will be needed after this until dry weather sets in about May or June. Later on as the flowers show colour the plants can be lifted and taken inside. By sprinkling a little sand upon the surface of the soil after potting, the soil in which they are plunged will part readily at that place. This is an easy method of growing this bulb, and will be found much better than having the pots exposed, with the additional labour of watering when it may readily be dispensed with by plunging deeply.—H. G.

Azalea mollis.—"H. P." at page 4 does well to call attention to the value of home-grown *Azalea mollis*. Whether home-grown plants turn out as satisfactory as imported ones will depend entirely upon those whose business it is to produce them. In the case of home-grown plants I have noticed that the colours of the flowers have not been sufficiently diversified; whereas in imported plants this feature is quite marked. If our home nurserymen are to compete with the foreigner with *Azalea mollis*, this is what they will have to look

to. No doubt some of our great Surrey growers of this class of plants do give sufficient attention to this, but it is not so generally. I have some large plants which were imported several years since, and they make a fine display every other season, as after being forced one year they require the following season to recuperate themselves. When brought on slowly into flower later in the season, these plants are the more likely to bloom the succeeding season, but when forced early they will not do so. Those plants which were exhibited so early in bloom as December 13 at the meeting of the Royal Horticultural Society were established in pots, at least for a season, as for early forcing I find the results are more satisfactory when thus grown. New plants when obtained should be potted and plunged in leaves or cocoa-nut fibre refuse in a cold frame, which will assist in their becoming established before being forced. If potted and put into heat almost at once, the blooms certainly develop, but they fall off very quickly afterwards. With plants already established this is not likely to happen, and they last in bloom for some time.—A. Y.

Pelargoniums v. Chrysanthemums.—That certain classes of plants have their season of popularity, and after that gradually drift from the high position they have attained, is brought prominently before one by noting the different Pelargoniums and Chrysanthemums that have received recognition from the Royal Horticultural Society during the past season and ten years previously, viz., in 1882. In this last-mentioned year no less than forty-seven varieties of Pelargoniums received certificates, and only six varieties of Chrysanthemums. True, the now defunct Pelargonium Society was then at its height, and to the trials conducted by it at Chiswick many of the certificates are no doubt due. Again, in 1881 no less than thirty-eight varieties of Pelargonium were awarded certificates, and not a single Chrysanthemum, while in 1880 the Pelargoniums numbered twenty-one, and the Chrysanthemums only one, and that the yellow-flowered form of the Paris Daisy (*Chrysanthemum frutescens*). In 1892, however, quite a different tale must be told, as, exclusive of those certificated by the National Chrysanthemum Society, no less than twenty-four were recognised by the Royal Horticultural Society, and only seven Pelargoniums, made up of one decorative, three of Mr. Turner's show varieties, one double-flowered Ivy-leaved, and two zonals, one of them single and the other double. With such changes as this continually taking place it is probable that in another ten years some classes of plants little thought of at the present day will be occupying a prominent position.—H. P.

Rogiera gratissima.—This Mexican shrub is now, I believe, included in the genus *Rondeletia*, but it is at all events better known under that of *Rogiera*. It is essentially a greenhouse plant, requiring much the same treatment as two other charming winter-flowering subjects, viz., *Luculia gratissima* and *Daphne indica*. The *Rogiera* forms a much-branched bush, and when in good health will flower freely. The blossoms are in general appearance and the manner in which they are borne somewhat in the way of the *Laurustinus*, their colour being a soft pink. The individual blooms remain some time in perfection. As a rule it succeeds better when planted out than it does in pots, but in any case care should be taken that the compost is such as will remain open and sweet for a very long time. A mixture of peat, loam, and sand will suit it well, while a liberal sprinkling of nodules of charcoal will also be of service. A light airy house is essential to its well-doing, as where at all close and stuffy the leaves are liable to be attacked by thrips, which soon work havoc. A pure atmosphere is also very necessary to this *Rogiera*; consequently in the neighbourhood of London it as a rule suffers terribly during the winter.—H. P.

Jasminum gracillimum.—This Jasmine, which was introduced from Borneo about a dozen years ago, soon became very generally cultivated, but of late I fancy it is not so often met with, for what reason I cannot say, as its pure white star-

like blossoms are borne in great profusion, and not only are they very beautiful, but also deliciously scented. It will grow and flower well as little bushes in pots 6 inches or more in diameter; while planted out it forms a very desirable plant for furnishing a small pillar in the stove or in any such position. In this way the branches dispose themselves very gracefully, and when laden with flowers a good specimen of it ranks among the best of stove-flowering plants. It will succeed in any ordinary compost, and may be readily struck from cuttings of the young growing shoots in the spring. When first introduced, I was very successful in obtaining a stock from cuttings of the roots, which were simply cut up into lengths of an inch or more and dibbled into pots of sandy soil at such a depth that the upper part of the root was just below the surface of the soil. Then plunged in a gentle bottom-heat in a propagating case, they soon commenced to grow and quickly formed plants.—H. P.

MIGNONETTE IN POTS.

MIGNONETTE for early spring flowering may now be sown. Where only a limited quantity is required, a shelf close to the glass in a house where just sufficient heat is given to keep out frost will be the best position, or a mild hotbed in a pit will bring the seed up quickly. In the neighbourhood of London or any place where fogs prevail, it requires some care to keep the early sown Mignonette from getting spindly and weak, and it is liable to damp off while in the seed-leaf. During bright weather a little warmth with plenty of air will be beneficial, but in dull, foggy weather it should be kept as cool as possible. Although the early-sown Mignonette requires a little extra care, it will well repay the trouble, for it will come into flower at a time when it is most appreciated, and last better than that which comes into bloom after the weather is warmer. Any plants that get too thin or straggling for flowering in pots will be useful for planting out. In growing Mignonette in pots it is essential that the pots should be filled firmly with a good loamy compost, with which may be mixed a good proportion of well-rotted manure. Soot should be mixed with the manure before adding it to the other compost; this will kill any worms or other insects. Old lime rubbish is also a valuable addition, especially for the early sowings, as it helps to keep the soil sweet. The seed should be sown fairly thick, and as soon as the plants are large enough they may be thinned out, but not too much at first. From six to nine plants in a 5-inch pot will be sufficient after the final thinning. Plenty of light and air is essential, but cold east winds are very damaging, and it will be better not to give air than to expose the plants to a direct east wind. As soon as the plants are large enough to require it they should have more room, and when they are an inch or from that to 2 inches high liquid manure may be used, commencing with it well diluted and gradually increasing the strength. Great care should be taken that it is used in a clear state. I find a great difficulty in making young men understand that all liquid manures should be allowed to settle down and never be used except in a clear state. Thick, muddy manure not only stains the foliage, but it forms a coating over the surface of the soil and effectually prevents evaporation and absorption.

There are some very distinct varieties of Mignonette, but names are rather misleading. The varieties may be divided into three distinct forms, viz., red, white, and yellow. In the red varieties the colour is given by the numerous anthers, the petals being of a greenish white and inconspicuous; in the yellow the anthers are yellow, and in the white varieties the petals are much enlarged, and the anthers are very small and sometimes entirely absent. Parsons' White was the first distinct white variety, and although there are now many different names, I have not met with anything better than the original. The best and most distinct red variety is Vilmoren's grandiflora. I do not know the history of the yellow variety, Golden Queen. All the above may be obtained under

various pet names. I may mention Machet as another distinct form; this has very thick spikes of bloom of a greenish white. This and Vilmoren's are the most popular for market work. While speaking of varieties I may allude to the curious double variety shown by Messrs. Balchin and Sons a few years ago. In this variety the seed-vessels were superseded by lateral spikes of bloom, the lower ones running out to some length, the original petals much enlarged and white. A most interesting variety, but it can only be propagated from cuttings. F. H.

SHORT NOTES.—STOVE AND GREENHOUSE.

Kennedyia eximia.—To the list of Kennedyas named by "H. P." I should like to add *eximia*. This is really a very pretty kind, the flowers being scarlet, and also very freely produced. The growth is also rapid, and in two years a plant would cover a large space.—Y. S.

Erica hyemalis major.—This is a variety which does not appear to be sufficiently known considering its merits. It differs from the old type in having larger flowers, but what really enhances its value is that it is later in coming into bloom. The old type is just now going out of flower, whilst the variety major is just coming in. It forms a good connecting link between *hyemalis* and that superb early spring flowering kind, *E. Wilmoreana*.—Y. S.

Azaleas and the fog.—Few plants suffer so much from the dense fogs in the London district as the Indian Azaleas, for many of them lose their leaves entirely, and very few of these can be expected to flower. Some varieties are, however, much more affected than others. For instance, Sigismund Rucker, which is very commonly grown, is one of the most sensitive of all; while a second equally common, Mme. Van der Cruyssen, retains its foliage better than any other variety.—H. P.

CHRYSANTHEMUMS.

SHOWING CHRYSANTHEMUMS IN CALIFORNIA.

TO THE EDITOR OF THE GARDEN.

SIR,—I have been greatly interested in the discussion on methods of showing Chrysanthemums which has appeared in recent issues of THE GARDEN. I am especially pleased with the propositions of "West Country Exhibitor" in THE GARDEN of December 10. If the writer would come further west he would find that the ideas of exhibiting, which he presents interrogatively, have been actually realised, and with most satisfactory results. For a new country, we are making commendable progress, I think, in our flower shows. We lack the experience which has enabled your growers to produce incomparable results in individual blooms in many classes, though in Chrysanthemums we have reached a higher standard than with other flowers. But we seem to have been impelled from the first by a longing for the artistic in arrangement, and the results are very pleasing. Californians who have visited your great shows complain of the stiffness and mechanical severity with which your competing blooms are staged. They say that your flowers are marshalled in columns parallel, interminable, monotonous; that each flower is a specified height, and is tilted at a certain angle; that the boards or boxes are wholly unprovided with artistic environment; that thousands of most beautiful flowers are arranged like criminals with their heads in the stocks, &c. This is, perhaps, an exaggeration. Until I read the article of "West Country Exhibitor" I supposed it must be so; but when this writer pleads so gently for a bit of Maiden-hair, for a little relief by potted plants in the lines of competing blooms, and for a little foliage and a little more stem of the plant bearing the bloom, I begin to wonder if it can be possible that your show managers are so mercilessly exacting or your exhibitors so indisposed to make any expenditure

of time or money for artistic effect, as has been described to us.

Allow me to assure "West Country Exhibitor" that my experience is that all his questions as to the desirability of doing more for artistic effect can be answered with a decided affirmative. At the show of the California State Floral Society last month, in the largest audience room in San Francisco, the first prize collection of Chrysanthemums in the professional class was formed of blooms on 15-inch to 18-inch stems, set in jars like Hyacinth glasses, the whole space on the table between the glasses filled with small pots of Maiden-hair, whose fronds rose high enough to conceal the receptacles and give the effect of Chrysanthemums rising from a bank of Ferns. As the space occupied was about 30 feet by 6 feet, it was not to be wondered at that the exhibit attracted much attention. This was only one of the styles adopted. Nearly all the exhibitors gave their exhibits artistic dressing; in fact, prizes of high value are offered for the most artistic display in professional and amateur classes.

A similar effort for pleasing environment is made at our Rose shows. We are just beginning to use the English style of Rose boxes with funnels and tubes. We find our Roses reach the shows in far better condition than otherwise. We make larger boxes, however, so as to admit of buds and foliage with the full flowers, and we wholly conceal the box in mounting the exhibit. This is done in many ways. Perhaps the most striking was the covering of the box with dyed sawdust, the mound rising from the green edging of the table to the height of the box placed in its centre and extending between the blooms, concealing the tubes and descending on the other side till the farther edge of the table was reached. The effect was that of a mound of chocolate-coloured loam rising from a low edging on all sides, and bearing upon its highest part the staged exhibit. It was a very clever imitation of a well-kept Rose bed, and the contrast of the colours of the Roses upon the dark ground was very striking and pleasant. Similar use has been made of Moss, not mossing the box alone, but all the vacant table space around, showing the Roses upon a slope of green. Both of these arrangements were adopted by one of our largest amateur growers to show for the "largest and best collection," and five boxes, holding in all about 125 varieties, were used.

Of course, these methods of showing, or, as I may better say, artistic showing in general, require time and some expenditure. It is much easier, perhaps, to put the boxes or boards on bare tables, but the gratification of one's own taste in such designs and the pleasing of beauty-loving people are well repaid. E. J. WICKSON.

Berkeley, California.

Naturally grown Chrysanthemums.—No doubt there are different ways of defining a naturally grown Chrysanthemum plant, but what I especially allude to now are those plants which are allowed to grow unchecked without topping the shoots or in any way limiting their number. Such plants as these are seen at the shows in Belgium, and very effective they are, being as suitable for the home decoration of the conservatory as they are for forming groups at an exhibition. The height of such plants varies according to the variety, ranging from 3 feet to 6 feet. I do not remember to have ever seen plants of this class at an English show, where I am sure they would be welcome if of the same quality as those grown in Belgium. The only point about these that interferes with their strict natural growth is that the flowers are limited to one on a shoot, the number of blooms to each plant varying from thirty to sixty. Varieties like Elaine, Val d'Andorre, or indeed any of the reflexed Japanese, are the most suitable for this form of culture, they being, as a rule, of dwarf and medium height, generally with stout stems. The blooms are also self-supporting, having stout peduncles. Pots 9 inches and 10 inches in diameter are large enough for any variety. Cuttings should be rooted early

in the year, the plants shifted into larger pots as required, and given abundance of room for a full development of the foliage and shoots. When the plants make their first natural break in April or May, according to the variety, instead of restricting their number to three, as in the orthodox method, where three large blooms are required, the whole of the shoots except the very weakest at the bottom are allowed to grow. Again, in August, when the second break takes place, the number is again increased. Each shoot is then allowed to carry one bloom, which will be a terminal one, or if more are required, the buds need not be removed, as many will cluster at the tips of the shoots. If fairly large blooms are wished for, one on each will be quite enough. One stout stake to each plant will suffice as a support for all the stems if these be loosely secured, it being possible to so tie them that the heads will not have a formal appearance. It is most essential that the foliage be preserved in good condition, as upon this much of the appearance of such plants depends.—E. MOLYNEUX.

SEASONABLE NOTES.

IN spite of the sunless weather lately experienced, accompanied as it has been with severe frost, the cuttings inserted singly during the early part of December in small pots under handlights in a cool house are rooting quickly this season. Many of the strongest growing kinds needing but three weeks to form roots are fit for removal from the handlights where they were struck, to others where they will have the benefit of more air to induce further stockiness of growth. If ever there was a season when the advantage of striking the cuttings in cool houses where no difficulty was experienced in keeping them from being frozen, the present is one. Directly the roots reach the sides of the pots no time should be lost in giving the plants additional air, and as soon as the leaves will stand erect without flagging with the lights removed they should be assigned a position as near the glass as possible. A sturdy growth is absolutely essential, no matter for what purpose the plants are grown, and this can only be obtained by arranging the quarters for the plants as near to the glass as possible. The purpose for which the plants are cultivated must shortly be determined. If for large blooms, allow the plants to grow uninterrupted with one stem until they make their first natural break in April or May according to the variety. With very few exceptions this method of training the plants gives much the best results. The plants have ample time to develop all their natural habits of growth, affording due time for the proper maturation of the growth. In the case of specimen plants the tops of each should be cut off at 4 inches high, this inducing side branches to form, and thus laying the foundation of the future specimen as near to the base as possible.

No time should be lost in inserting cuttings for the growth of bush plants to give a quantity of bloom in preference to a few for their quality. Those varieties which are free flowering, of moderately dwarf habit of growth, and with stout peduncles to support their blooms are to be preferred. Few of the incurved section are suitable. The kinds constituting the reflexed Japanese section are all suitable, choosing those naturally free flowering, Lady Selborne and Bouquet Fait for example. No section is more suitable for this method of culture than the single-flowered sorts, pompons, and Anemone pompons.

E. M.

SHORT NOTES.—CHRYSANTHEMUMS.

Chrysanthemum Duchess of Sutherland.—This Japanese is one of Mr. Owen's English seedlings, of which we cannot have too many if they partake of the character of this. It is a large full-centred flower, the flat petals slightly toothed or serrated. The colour is pure yellow fading with age to a lovely shade of lemon.

Chrysanthemum Robert Owen.—Apart from its value as an exhibition kind this massive Japan-

ese of the incurved section is good as a late bloomer. I have now (January 4) a full sized flower in good condition. The massive curly petals show the intense apricot-yellow to the best advantage. This is a variety likely to take a very high position in the Chrysanthemum lists of the future.

Chrysanthemum Middleton Clarke.—This is a seedling from Mrs. Falconer Jameson, quite one of the best habited kinds we have. We want plenty of this type of habit. The flowers of the subject of this note are reddish crimson in colour; each petal has a golden bronze tip, but this passes away with expansion. The petals are exactly of the same form as those of its parent.

Chrysanthemum Milly Agate.—This is one of the best of the single-flowered section for giving blooms in quantity late in the season. During the whole of December I was enabled to cut serviceable flowers from plants of this, the pure white blossoms being much appreciated. The flowers individually are large in size, the points of the florets recurving gracefully.—E. M.

Chrysanthemum Etoile de Lyon.—Not only is this a good variety for giving a crop of late blooms under glass, but it was the latest on a wall out-of-doors here amongst many others this season. I was able to cut really good sized and fresh blooms on Christmas Day, the plants not having received any protection whatever. The severe frost experienced since has settled the unopened flowers.

Chrysanthemum Etoile du Midi.—While cultivators are running after the newer sorts they are apt to forget the older ones. At one of the shows where I was judging during the past season I came across several plants of this variety massed together. The orange-red blossoms made a capital contrast to the lemon of Peter the Great and the white of Avalanche arranged next to it. The blooms are of the reflexed Japanese order and of medium size.

Chrysanthemum Guernsey Sunset.—For giving a late batch of bloom this single-flowered variety is valuable. By allowing the plants to grow away at will they develop clusters of the yellow shaded bronze flowers on stout stems 1 foot to 2 feet long, which are most useful for filling tall vases during the month of January. Plants treated in this manner run up 6 feet high. The variety is robust, the flower-stems in consequence being well fitted for any purpose.

Vriesia brachystachys.—Despite the fact that this is but little grown, I should be inclined to give it a place among the very best winter-flowering stove plants. This Vriesia pushes up a tuft of rather pale tinted leaves, arranged in a vasiform manner, the whole being little more than 6 inches high, while the flower-spike which just overtops the foliage bears on the upper part a number of bright-coloured bracts, which form the most conspicuous feature of the inflorescence. These bracts are large and arranged in two opposite rows. They are at the base of a deep bright crimson colour, shaded with purple, while the upper part is rich orange, one colour gradually merging into the other. The flowers are bright yellow, but they are partially hidden by the bracts and do not remain long in perfection, so that they play but a minor part in the embellishment of the plant. Very desirable features possessed by this Vriesia are, firstly, its simple cultural requirements; secondly, the freedom with which it flowers; and thirdly, the length of time the inflorescence remains fresh and bright, for it will be an object of beauty for three months of the dullest period of the year. A compost consisting of fibrous peat with a little sand will suit it perfectly, provided the pots are well drained. Water should be given to about the same extent as for most stove plants, and while the blooms must not be wetted, a fair amount of syringing is very beneficial during the growing season.—H. P.

Day Lilies in pots.—Where a greenhouse or conservatory has to be kept gay at all seasons as much variety as possible consistent with a good display of bloom is generally the object aimed at, and among plants that give very little trouble and at the same time afford a pleasing variety to the usual occupants of the greenhouse may be named the different forms of Hemerocallis or Day Lilies, more especially the clear golden yellow *H. flava*, which is such a general favourite. Good flowering tufts of this reach a height of about a yard, and

though the individual blooms only last a short time, a succession is kept up for a considerable period. The dwarfier growing *H. Dumortieri*, whose flowers are of a deep orange hue, tinged on the exterior with bronze, is also well suited for this treatment, and so is *H. Thunbergi*, the blossoms of which are of softer tint than those of *H. flava*. The stronger growing kinds, such as *H. fulva* and *H. Kwanso*, with their double-flowered forms, are not so useful for flowering under glass. The variegated-leaved variety when in good form is, however, wonderfully pretty, and with a little protection the variegation is very clear and decided. For flowering these Day Lilies under glass very little preparation is necessary, for where there are clumps established in the open ground they may be lifted, potted into suitable sized pots, and placed in a cold frame, all that is needed being to water when necessary. As the roots get active a little liquid manure will be beneficial.—H. P.

GARDEN FLORA.

PLATE 893.

HYBRID SWEET BRIERS.

(WITH A COLOURED PLATE. *)

AMONG the various exhibits at the metropolitan exhibition of the National Rose Society last year perhaps none were more pleasing or commanded a greater amount of attraction than the hybrid Sweet Briars which were raised by the Right Hon. Lord Penzance. His lordship is a most enthusiastic rosarian and one of the most liberal supporters of the National Rose Society. This class of Rose is obtained by crossing the Hybrid Perpetuals and the common Sweet Brier. I believe that the varieties chiefly used were Alfred Colomb, Dr. Sewell and Paul Neyron. William Allen Richardson and Fortune's Yellow have also been used, while further experiments are being made between the Sweet Briars and Austrian Briars.

This new race of Roses is very sweet-scented and the foliage retains all the charms attached to the Sweet Briars, being equally fragrant. There has been a great craze for large and double Roses of late, and this new departure is very pleasing and novel. The shades of colour are delightful and almost indescribable. A somewhat curious point in raising these is that the fragrant foliage is only obtained when the Sweet Brier is crossed with other varieties, and entirely lost when the crossing is reversed. Although, like the Sweet Briars and Rugosa Roses, the individual blossoms do not last any time, they are produced so freely and in such close succession, that the plants are covered with flowers for a long time.

In the "Rosarian's Year Book," Lord Penzance tells us that "As many as four or five of the seedling Sweet Briars which have hitherto flowered have now turned out to be perpetuals, blooming a second time in the autumn and blooming then freely. During the autumn of 1891, indeed, in spite of the heavy rains, they have gone on blooming right through the month of October, and they bloom, like their seed parent, in clusters. An additional charm, and in my estimation a great charm, is to be found in the fact that these flowers have a very delicious scent—a scent quite independent of and different from that of the foliage."

Recently the Polyantha Roses have become more popular, and deservedly so, and this new race of single Roses will make a most important addition to our garden Roses. As the Sweet

* Drawn for THE GARDEN by Marie Low at Ealing Park, July 20, 1892. Lithographed and printed by Guillaume Severeys.

Brier is one of our hardiest native Roses, we may very reasonably expect these hybrids to be equally hardy and exempt from insect pests. They are of remarkably strong and healthy growth, and as his lordship informs us that they strike very readily, this is an excellent means of increasing the stock of the most charming varieties.

The stamens of the flowers shown at the Crystal Palace in 1892 were very prominent and showy, and greatly heightened the effect of the glowing colours. I believe there is a great future before these most charming Roses, and it would seem that there is little or no limit to the variety of hybrids that may be produced, while the great diversity of colours already obtained gives promise of a grand collection of almost all shades.

The common Sweet Brier is in itself one of our most charming native flowers, and the fragrance given off by its foliage, especially after a summer shower, is so delicious, that all will welcome this new race of brightly-coloured Roses with an equal, if not greater amount of sweetness both in blossom and foliage.

When these come to be distributed among the public, I feel sure they will be extensively grown and planted. Rich soil should not be necessary, as the typical Sweet Brier will thrive on very poor land. Another advantage will be their adaptability for filling in odd corners, &c., as they can be pruned back to any dimensions without fear of removing the best of the flowering wood. I can imagine nothing more charming than a hedge of these, or a few plants placed in a group among other flowering shrubs on the outskirts of a lawn, or growing in a natural and seemingly neglected manner.—R.

Many lovers of the Rose will call to remembrance the collection of hybrids of the Sweet Brier and other types Lord Penzance sent to one of the meetings of the Royal Horticultural Society in June, 1891, and later to the Rose show held at the Royal Aquarium. They illustrated in a remarkable degree the possibilities of cross-breeding in Roses, in which work his lordship has proved eminently successful.

It appears to have been some disappointment with the "modern Hybrid Perpetual Roses" which led Lord Penzance to take up a line of his own in regard to Rose cultivation. In a paper contributed to the "Rosarian's Year Book" for 1891 he asks, How do these modern Hybrid Perpetuals comport themselves in the garden? Lord Penzance answers his own question by saying, "We all know how hard it is to make a lovely object out of a standard Rose, and whenever this is done it is achieved only by a very careful and skilful use of the pruning-knife. But, take the dwarfs. Do they form themselves into what used to be known as a Rose bush? or are they not given to exhibit a straggling, unequal growth, one or two strong shoots breaking up from the crown or the lower part of the plant and robbing the life from the rest? If cut back hard in the spring the plant becomes a stumpy, somewhat insignificant and not a very captivating object. If subjected to what the French call the 'taille longue,' they are apt to become leggy and shabby in the lower branches. Here, again, there is no doubt but that a good deal may be done by skilful pruning, but the growth of the plant does not lend itself readily and naturally to the formation of an even head or symmetrical bush." It must be admitted there is much truth in the foregoing remarks.

Lord Penzance is of opinion that the gift of autumn flowering of the Hybrid Perpetuals comes from having been crossed with what he calls the Eastern Rose—the Rose de Bengale of the French. The comparatively scanty bloom of many of the Hybrid Perpetuals, and the contrast between the old summer Roses and the modern Hybrid Perpetuals are very striking. The old summer-flowering Roses are covered with bloom in their season. I saw a

striking instance of this in an old garden at Easfield during the past summer; a path arched with wire trellises had been covered years ago with the old-fashioned summer Roses, and at the time I saw them they were in grand bloom; indeed, in such happy plenteousness, as to form a floral sight worth going miles to see, but the gardener knowing the fleeting character of the Rose bloom had wisely planted among the Roses Clematises and other late summer-flowering subjects to carry on the floral succession until the autumn. Lord Penzance points out that the class of Roses known as Hybrid Chinas and Hybrid Bourbons, none of which ever bloom a second time in autumn, put forth a sheet of bloom in every part of them during the summer with a profusion which it would be difficult to name half-a-dozen Hybrid Perpetuals capable of emulating. Two more well-known defects in the Hybrid Perpetuals are mentioned. They are destitute of fragrance and "many, if not most of them, are short-lived." It was the existence of these defects in our most popular class of Roses which induced Lord Penzance to try if something better could not be produced by working upon new lines. Recognising the fact that the races or families of the Rose are capable of combining by cross-fertilisation, his lordship entered upon a line of action of his own with the object of securing a new Rose which might be free from some of the existing defects. The Sweet Brier was selected as the natural basis of a new race. In the first place, it is indigenous to the soil and climate; it is proof against the most vicious attacks of our English winters; it is superior to the weakness of mildew, and as little subject to the troubles of the Rose as any other species. It is a prolific seed-bearer, and "more certain to bear fruit when fertilised with pollen of other Roses than any Rose or class of Roses that in my limited experience has presented itself."

Some interesting facts presented themselves. The seedlings obtained by impregnating the Sweet Brier with foreign pollen had a remarkable strength of root and growth, and struck readily from cuttings. The sweet-scented foliage of the Sweet Brier was also produced. A complete cross was obtained between the Sweet Brier and the Persian Yellow, the bloom larger than that of the Sweet Brier, pale yellow in colour, and the foliage fully as fragrant, if not more so. The Austrian Copper crossed on to the Sweet Brier produced a seedling, the bloom not quite so deep in its colour as that of the pollen parent, yet a close copy of the original, with the sweet scent of the Brier diffused in its foliage. The pollen of the Hybrid Perpetuals, the Hybrid Bourbons, and the Hybrid Chinas, put upon the Sweet Brier, produced distinct crosses—distinct in the sense that the wood, foliage, habit of growth, and the thorn are not those of the Sweet Brier.

"Among hundreds of Sweet Brier seedlings," says Lord Penzance, "which are evidently crosses, I have had only one that did not retain the sweet foliage of the seed parent, and as to this one, I cannot help thinking there must be some mistake as to its parentage."

All attempts to cross the Sweet Brier upon the Hybrid Perpetual have failed to produce scented foliage, but the seedlings so obtained have been small, and Lord Penzance is not by any means hopeless of attaining this result.

So far the blooms of the Sweet Brier seedlings show but little tendency to doubleness. Lord Penzance states that none of them as yet have given him more than two complete rows of petals. It is his desire to secure a greater degree of doubleness, and he hopes to succeed in another generation or two of seedlings. With this end in view, it is his intention to cross them again with the pollen of Hybrid Perpetuals, Hybrid Chinas, and Hybrid Bourbons. Other crosses have and still are engaging the attention of Lord Penzance, such as the Moss Rose Cellini with the Musk Rose Fringed Musk, which he has secured; the joint characteristics of the progeny are unmistakable. Mons. Crepin, the distinguished authority on the botany of the Rose, pronounced it to be a distinct hybrid.

One difficulty in the way of the cross-fertilisation of Roses is to procure "the pollen required at the right moment. The time at which, and during which, the stigmas of the flower to be operated upon are mature and fitly receptive is very uncertain and of short duration. The same thing is true of the anthers and the liberation of pollen, and this makes an opposite combination between the stigmas of one race and the pollen of another no easy task." But in the course of his operations Lord Penzance has discovered that the pollen of the Rose can be kept in full vitality if preserved from all moisture or damp for many weeks—in short, from one end to the other of the hybridising season, and in his experience the preserved pollen may actually produce a larger proportion of heps than the pollen fresh from the flower. Not that it is to be understood that preserving pollen adds to its fertilising power, but that "it can be applied to the stigma of the seed-bearer in much fuller quantity and much more handily and adroitly than can be done with the fresh. When the pollen bursts from the anthers in the first instance it very often breaks forth in small quantity only, and the supply of it is at times apt to fall short in the midst of an operation." Then ripe pollen is not always obtainable when the flower to be dealt with is exactly fit for the work, and there is a temptation to take the pollen before it is fully ripe.

It must not be supposed all the crosses made by Lord Penzance have succeeded. He has failed with the Boursault and microphylla types; also with Rosa sinica and the Macartney, but there is the right ring in the resolve with which his lordship concludes his interesting and instructive paper when he says, "I have hitherto been vanquished in these attempts, but I shall not give them up until I have received a good many more rebuffs."—R. D.

The great purple Iris in masses.—Last year when in a Surrey nursery we made a note of the beauty of the noble Iris pallida when grown in groups or masses. There was, we should think, about 100 plants in bloom at one time—a perfect sea of mauve colour, which showed how much is lost by not growing such things in greater abundance and in larger colonies. I. pallida attains a height of between 3 feet and 4 feet, the stems sturdy, and the large sweetly-scented flowers, like Elder in their fragrance, are very beautiful on the plant or for cutting. A break of the purple Iris would be a delightful feature in the month of June.

THE WEEK'S WORK.

ORCHIDS.

WE who have to grow Orchids near London know a good deal of the mischief caused to the flowers by dense fogs, which in some gardens sweep off all, or nearly all, the choice winter flowers, Calanthes, Phalænopsis, Angreæums, &c., being utterly destroyed. Has anyone cultivating a good collection of Orchids, amateur or the trade, tried Toope's method of preventing injury by fogs? I called at one of the best London nurseries the other day, and saw the effects of the fog in the destruction of the flowers and buds, but heard nothing of the recently-talked-of apparatus for the prevention of fogs. I observed that the handsome Saccolabium giganteum and the white variety were in good condition, and the winter-flowering Cypripediums resisted the effects of the fogs very well indeed. The East India house is now becoming interesting not only for the plants in bloom, but for those pushing up their flower-spikes and also for those starting to grow. With the early days of the year the spikes of Oncidium ampliatum majus push out freely from the base of the pseudo-bulbs ripened in strong heat last year. We have the plants now in the lightest part of the house, but at the coolest end. I fancy they do

not need so much heat when throwing up their flower-spikes as they do when producing their pseudo-bulbs in the autumn. This is a very handsome *Oncidium*, the flowers lasting long in good condition, the sprays of golden yellow being charming for cutting. Slugs and woodlice are very partial to the young spikes, and eat them off sometimes before they are seen pushing out of the sheaths. *O. Cavendishianum* is altogether a different type of this species, and belongs to the group distinguished by the absence of pseudo-bulbs. Its spikes are also in course of development, and it should be placed with *O. ampliatum*, as the treatment now will be similar. *O. Lanceanum* will now be starting into growth, and it ought as yet to be suspended in a teak basket in the lightest, warmest part of the house. It should now be more freely watered, but as the sun becomes powerful in its effects upon the glass roof, it is better to put the plants on the stage. It is easy to let these plants get into bad health, but very difficult indeed to get them right again. The thing is to never disturb the roots which form outside of the basket. They ought to be interfered with as little as possible, and it is better to fork out the spent peat and Sphagnum from between the teak rods and replace with fresh material than to remove them from the baskets in which they are growing to a new one. *O. hamatophilum* is a very nearly allied species, requiring similar treatment; it is an uncommon plant, and those who possess a healthy specimen of it should take great care that it does not get into bad condition.

The roots of *Angraecums* have now or will very soon show signs of active growth; it is better to see to them, and if the Sphagnum in which the plants are growing has become dead, or is in a dying state owing to the necessary dryness when the plants were at rest, this useless material should be removed and replaced with freshly gathered material. There is a good deal to do in the way of repotting Orchids in the warmest house at the present time. All the smaller seedlings should be repotted now, especially the small *Cypripediums*, keeping them in a light position until the sun is too powerful for them. It is an error to over-pot any of these plants. All the smaller Orchids do better rather under than over-potted. Some of the *Coelogynes* require attention at this time. We grow *C. Massangeana* in the warmest house; it is now starting to grow, and will stand a good shift. In fact I have repotted healthy young plants of this species twice in a year, it makes roots so very rapidly; but if a medium-sized plant has a good shift now, it will not require to be disturbed again until this time next year. *C. asperata*, sometimes grown under the name of *C. Lowi*, may also be repotted now. It is a very pretty species, and is well figured in Paxton's "Magazine of Botany" under the name of *C. Lowi*, where it is stated that the Messrs. Low, of Clapton, had flower-spikes (native specimens dried) upwards of 20 inches in length. Another species which may be associated with it as regards treatment is the very uncommon-looking *C. pandurata*; both of them were discovered by Sir Hugh Low in Sarawak. They grow in the hot jungles in swampy districts where the air is moist and the heat excessive. They may be repotted now. When dealing with the *Coelogynes* there are three requiring the treatment of the intermediate house which should be alluded to at this time. *C. barbata* is passing out of bloom and may be repotted. The sepals and petals of this species are of the purest white, in striking contrast to the dark brown lip, the colour of soot, densely fringed with blackish hairs. It is shy in producing its flowers, and needs plenty of water when growing. Basket culture suits it best. *C. Gardneriana* is a distinct species, and will grow freely as a pot plant in peat and Sphagnum. It does not make roots so freely as some, and should not be over-potted. The most useful of all is, of course, *C. cristata* and its varieties, which flower freely and always make good growth. The flower-spikes are now pushing up freely; an occasional watering with very weak liquid manure water will strengthen the plants, greatly improving the quality of the flowers. As I write the weather is

not nearly so cold, but we may yet expect severe frosts, and the cultivator must be prepared for changes either way. J. DOUGLAS.

PLANT HOUSES.

PROPAGATION.—There may not be in many cases sufficient room in a few weeks to do all needful propagation, what with bedding plants and other things, to keep the proper supply of plants for pot culture. Anything, therefore, that can be attended to at once should not be delayed. The present is, for instance, a very suitable one for propagating Carnations for next autumn and winter flowering. Where any have been struck in the autumn, those now put in will form a good succession to them, the former flowering in early autumn. The cuttings are not always fit to take off at one time, but this will not matter, being rather an advantage than otherwise, two, three or four batches being the best to secure a continuance of bloom. I am more impressed than ever with the excellent properties of Winter Cheer. It is a worthy companion to Miss Jolliffe Improved, whilst as a white, Mrs. Moore is strongly recommended. We have now got a batch of cuttings of these sorts striking, most of which were lateral shoots pulled out at the junction with the main stem; others were taken from leading growths simply because we were short of them. These cuttings have been placed five or six into 3-inch pots around the sides of the pots and plunged in a gentle bottom-heat of about 75°, with a temperature in the house at night of 60° to 65°. This treatment will, I think, suit them very well. Previous to taking the cuttings the old stools were in a night temperature of 50°, rising by day, so that the difference for the cuttings is not any too much. The soil used for striking is about half cocoa fibre, the rest loam and silver sand. A sheet of glass is placed over the pots, but there is a fair amount of ventilation on each side through it not fitting closely. We find the crickets a bit troublesome in eating the cuttings; if this continues we shall give them some growths from outside to nibble at and then catch them if possible with hot water. As soon as the cuttings are struck they will be gradually inured to the usual atmosphere, and soon afterwards be taken to a somewhat cooler house. Pippings from Pinks for pot culture can also be put in now, not that there is any time lost, but I find them strike better before the weather gets much brighter.

A few old stools of *Bouvardias* should now be placed in heat to start the plants into growth for early cuttings. Those who have not thus far taken any note of *Priory Beauty* and Mrs. Robert Green will do well to work up a stock of them. They have in either case the free habit of *Vreelandi*, the former a soft pink, the latter more of a salmon shade. Zonal *Pelargoniums* for next autumn and winter-flowering should be struck now, or as soon as possible. With these the better way is striking singly in 2½-inch pots to avoid any after check. A vinery on the move will answer well for these cuttings, failing a pit that is suitable for them. What has to be guarded against in this case is an excess of moisture, more so even than in that of striking cuttings from bedding varieties which have been resting more through the winter than the others have. The earliest flowering *Salvias* can also be propagated now; these will do well where the Carnations are being struck. Of these, *Salvia splendens* and its variety *Bruanti*, a dwarfier form, and *S. Bethelli* (rose and white), with *S. Heeri* (scarlet, now in flower) are about the best for autumn and winter. *S. gesneriflora* being more of a spring-flowering variety, propagation should be deferred for a time. Where the old-fashioned scented-leaved *Pelargoniums* are esteemed for their fragrance, and any demand is anticipated for cutting, it is very advisable to set about the propagation of these also, so as to keep up the stock. In our own case we have struck a good number of cuttings during the winter on a ledge at the back of our *Gardenia* and *Ixora* pits. This has been just the place for them, hardly a cutting failing. Now onwards

they will strike easily enough in a fair warmth; a vinery that is fairly advanced will suit them.

The past three weeks have not been any too favourable for the propagation of *Chrysanthemums*. If the usual stock has not been already secured, some more cuttings should be put in as soon as fit. In doing this, do not lose sight of the usefulness of the early autumn varieties as represented by the Desgrange family, La Vierge and others. In any case, if the old stools are still on hand, it will not be advisable to cast them aside just yet unless the pots and the room are really needed at once. Where early plants of *Fuchsias* are likely to be wanted, some old stools should at once be put into a good warmth for cuttings, these being taken off before they get too long and then struck in nearly all sand. Only the most reliable kinds should be looked to for early flowering, for which Mrs. Marshall is scarcely beaten yet in its way. Double *Primulas* should now soon receive attention; it may be possible that the plants are still giving a fair amount of bloom. Even if this be the case, a few should have all the flowers cut off them and then be given a little more warmth; then in a week or two the cuttings will be fit to take off. In the propagation of these, an excess of moisture has to be guarded against as much as anything. Given a fairly warm house, say 55° to 60°, they will strike very well in such a place upon a moderately dry bottom; a hand-light with a movable top will make a good place for them. Those who cannot, as a rule, strike them satisfactorily should adopt the layering process, first trimming off the older leaves and then filling up close to the young growths with cocoa fibre and sand, or, failing the former, some finely-sifted leaf soil will answer the purpose. In either case, this newly-added soil should be kept moist to encourage root-action.

JAMES HUDSON.

THE KITCHEN GARDEN.

SOWING CAULIFLOWERS.—Many people now rely upon plants raised in the early part of the year for their principal supply of early Cauliflowers. This being the case, it is now time the seeds were sown. The plants must not be hurried on, thinking to make up lost time, as if so they will be useless, as instead of forming neat little heads, they will turn in prematurely, or, as gardeners say, "button." It is also advisable to sow one of the now recognised early varieties, such as Veitch's Early Forcing or Snowball, and to follow on select either Early London or Dwarf Erfurt. Walcheren might also be sown. If a forcing variety is needed to grow on in pits, Veitch's Forcing is very good, although with the late kinds of Broccoli now in commerce, these with the earliest Cauliflowers bridge over the season, that is, if the Broccoli should not be killed by frost. The seeds should be sown thinly in shallow boxes of light soil, and to ensure quick germination place the box in a gentle warmth. As soon as the seedlings are well through the soil, remove to cooler quarters near the glass, but not where they are likely to become starved through either too cold or draughty quarters. Watering must also have careful attention to prevent the seedlings damping off. Directly they are large enough, pot off into 4-inch or 5-inch pots. The soil also should be substantial, three parts loam to one each of leaf-soil and pulverised horse manure. Keep close until established, afterwards removing to a greenhouse shelf, eventually placing in a cold frame. The plants may also be pricked out into low light frames. In this case place a layer of rotten manure to the depth of 2 inches on a hard bottom, and above this the same depth of holding loam and a little leaf-soil, into which prick the plants not less than 4 inches apart.

RAISING TOMATO PLANTS.—For the earliest supply of young plants the seeds should now be sown. In some gardens it is the practice to rely upon home-saved seed, and where this can be relied upon as pure and also saved from healthy plants, nothing can be said against the practice. Sow the seed thinly, so that each little plant will stand out separately. Use light soil, just covering

the seed, afterwards giving a gentle watering and place in a warm structure, where a little bottom-heat may also be provided. As soon as the seedlings appear place them well up to the light. By the time the first rough leaf is showing pot them off singly into 3-inch pots. In double potting there is no advantage, but rather the reverse. Use light friable soil, which must also be warmed. If kept close and sprinkled the plants will soon be established, and should then be removed to a light position near the glass, this keeping them sturdy and also enhancing their early fruiting powers, causing them to show healthy trusses of bloom sooner than they otherwise would do.

TOMATOES FROM CUTTINGS.—Although it is the practice of some people to take cuttings in the autumn and grow these on for producing the earliest fruits, yet unless they are perfectly clean and healthy, they should not be retained. Very often a few white fly or their eggs are lurking about, and upon the return of bright weather they spring into life and contaminate younger plants. If the plants are clean, these may now be either potted off or repotted as the case may be.

PARSLEY.—Now is the time when Parsley will commence to be scarce, and this no doubt many people have found out ere this. Whenever the frost is out of the ground some strong roots should be taken up and planted thickly in boxes. These, if placed on a gentle hotbed or in a fairly warm structure, will soon start into growth, but no great supply can be expected. As we never know how prolonged the severe weather may be, the best course will be to make a sowing in heat.

A. YOUNG.

HARDY FRUITS.

MOSS AND LICHEN.—In low-lying positions, especially where there is much clay in the soil, the extra moisture nearly always present in the atmosphere favours the growth of such parasites as Moss and Lichen on fruit trees generally, and Apples and Pears in particular. It is hardly necessary to add that they seriously affect the health of the trees overrun by them. The healthiest trees are those with good clear stems and main branches, those overrun and their breathing pores clogged by Moss and Lichen being the first to become stunted in growth and of comparatively little real service. In some few instances removing the principal cause, that is, an excess of moisture in the soil, is quickly followed by the disappearance of the parasites, and one of the first remedies should, therefore, be an examination of the drains. If these are badly clogged by tree roots or other obstacles, either clean out the old drains or form fresh ones. In orchards the drains ought to be disposed midway between the rows of standard trees, and as a rule not less than 3 feet deep, there being such a thing as draining away surface water too rapidly. There are several known remedies for removing Moss and Lichen temporarily, this including scraping and scrubbing with brine and lime-wash. Scrubbing is a far too tedious operation beyond what might be done in that way to the clear trunks of standard trees. Newly-slaked lime in a fine state, shaken through a coarse bag or otherwise dusted or distributed among the branches when these are in a moist state, will do much towards killing Moss and Lichen; but, all things considered, it is a less satisfactory remedy than thoroughly coating them with lime water. Add sufficient caustic lime to a tub of water to give this the consistency and colour of milk, pass it through a fine seed sieve, and apply with an old syringe while still hot. Every crack and crevice that can be got at should be thoroughly searched out with the syringe, and this will be the means of destroying a good many insect pests, as well as the Moss and Lichen. The latter will gradually become brown and fall off, leaving the stems and branches clear for some time to come. Now is a good time to do this important work, any lime water that misses the tree not hurting or disfiguring much that may be alive near at hand.

AMERICAN BLIGHT.—This is a very bad scourge in some gardens and orchards, and is to be found in a few nurseries as well. It is a species of aphid, and amateurs will find it in masses wherever there are cracks and crevices, more especially in cankerous swellings on the bark of the trees brought on in many cases by their own action. Strong insecticides, including Gishurst compound, well brushed into the infested places is an effective, but very slow proceeding, and to be recommended only where there are only a few small trees to be cleaned. Being well protected with their woolly covering, American blight is quite as hard to destroy as mealy bug in plant stoves. Insecticides, notably petroleum, used in a very strong state or undiluted, must be injurious to the bark of the trees; whereas, if applied in conjunction with very hot water, it is safe and effective.

OTHER INSECT PESTS.—Scale, aphides (especially the black form) and the caterpillars of the winter moth, lackey moth and small ermine moth have also to be reckoned with by many would-be successful fruit growers, and it is during the present month and February that effective measures can best be taken. The first-named is mostly found on Apples and Pears, the former being sometimes nearly smothered by the mussel scale, and Pears by what is known as the oyster scale, from a resemblance which they bear to those bivalves. The aphides are most troublesome in the case of Peaches, Nectarines, Plums and Cherries, while the caterpillars mentioned principally devastate Apples and Pears. For both scale and aphides the petroleum and hot-water remedy is the best that can be recommended, and, next to greased bands fastened round the trunks of trees in the autumn for catching the ascending moths, is the most effective against caterpillars. It is fully capable of destroying the eggs of insects that it reaches, as well as insects and larvæ generally, and being harmless as far as the bark and roots are concerned, should be used sufficiently freely to well moisten the soil to a good depth below. Given a good supply of hot water at not less than 130° when it leaves the boiler or copper, a pound of soft soap, a can of petroleum, two syringes and two willing men, quite a large number of trees can be cleaned in a few hours. To every 3-gallon can of hot water add a lump of soft soap about the size of a hen's egg and 8 ozs. of petroleum—measured the most readily with the aid of an ordinary 8-oz. medicine bottle. One syringe should be employed in thoroughly wetting every part of the infested trees, crevices in the trees and walls in particular being well searched out, and the other in forcibly returning its contents into the can to keep the oil mixed. There is so little likelihood of the roots being injured, that it is advisable to remove all rubbish and loose soil from near the walls and under the trees generally, leaving the surface in a loose state in order that it may be readily moistened by the insecticide. All rubbish thus collected should be burnt, as there may be eggs deposited on this. If one application does not thoroughly clear the trees of scale, repeat it before the buds are bursting, and the latter will then escape injury and the remedy be complete.

WEEVILS.—Both the perfect insect and the grubs of weevils are greater enemies to the fruit crops than is generally supposed. In some gardens and orchards the Gooseberry crop is quite spoilt, owing to the calyxes of the flowers being eaten by weevils, the flowers of Apples and Pears also suffering from their attacks; while the leaves of Vines, Raspberries, Strawberries, and sometimes Apples, Pears and Plums are frequently badly eaten by either the grubs or perfect insects. Catching the weevils during the summer by the aid of a light and a cloth spread under the trees is a good remedy, but much may be done now towards lessening the evil. Remove all loose soil and rubbish from under the trees, and either lightly fork in a good dressing of caustic lime, or, better still, apply the petroleum and hot-water remedy. This syringed well into the wall crevices, and in particular washed down into the soil close up to the walls, would destroy the greater portion of the weevils there hibernating.

W. IGGULDEN.

KITCHEN GARDEN.

STRONG TOMATO PLANTS.

THERE seems to be a prejudice against strong young Tomato plants. At one time they were objected to because it was thought those less vigorous were not only the first to produce fruit, but were also the heaviest croppers throughout. Some old-fashioned gardeners did not believe in seedlings, being under the impression that these were far too strong growing to become quickly and heavily productive, and in order to counteract this supposed unfruitful habit of growth it has fallen to my lot to have to strike the tops of strong seedlings and to throw the plants or stumps away. Even in those days, this being when Tomato growing under glass was in its infancy, I felt that this was so much wasted labour, and nearly lost my situation because I protested against striking the tops a second time. Cutting-raised plants are not one whit more precocious in producing fruit than are seedlings, nor do they, as a rule, fruit any nearer the ground than do those raised from seed and properly prepared. When the scare caused by the new form of disease, most generally known as *Cladysporium*, was at its height, one preventive measure to which much importance was attached was the preparation of extra hard-stemmed plants, subsequent culture also tending to keep them from becoming so vigorous as they are apt to do when planted out in rather strong soil. Undoubtedly, the disease does act most fatally in the case of Tomato plants in a luxuriant condition, more especially when this is brought about by means of a rich root-run, strong heat and moisture-laden atmosphere, but though it is most advisable to avoid the latter error, it is not wise to start with stunted plants. Stunted plants too often mean legginess, the hard stems also failing to ever swell properly. By far the most profitable plants are those which produce a strong first cluster of fruit, this reaching down so as to nearly or quite touch the ground; whereas, in the case of starved, leggy plants the first bunches of fruit are both feeble and formed from 18 inches to 2 feet from the soil.

I hold that Tomato plants should never be placed in small pots. Once they become in the least bit root-bound the growth is spindly and weak, and is with difficulty recovered to a more robust state. The seed should be sown thinly in pans or pots filled with fine sandy soil. Thin sowing is recommended because the seedlings if crowded quickly weaken each other, and there is no sense in raising very many more of them than are needed, while fine light soil ought to be used, as it is only out of this that the tender young roots can be shaken or lifted without experiencing a severe check. Tomato seed germinates very quickly and surely in a brisk heat, and directly the seedlings are well through the soil they ought to be raised more up to the light, a shelf near the glass suiting them well. When well into the rough leaf they should be potted off. Prepare a heap of light loamy compost, and warm this thoroughly by means of heated bricks plunged in it. The pots to be used ought to be either 5 inches or 6 inches in diameter, clean and lightly drained, and the potting should be done in the house where the seedlings are growing, a few minutes in a cold potting shed checking them badly. Place a little rough soil on the drainage and fill up to the rims with the soil. The seedlings should be carefully shaken clear of each other, and be then sunk up to their seed leaves singly in the smaller sized pots or in pairs against the sides

of the larger ones, smartly jarring down the soil being all the fixing needed. Place them in a warm, light position, shade from sunshine and water gently if the soil is at all dry, watering somewhat sparingly afterwards. Directly the plants have recovered their healthy colour expose them to the full sunshine and raise well up to the glass. It will not be long before they commence rooting—the buried stems freely emitting roots—and growing strongly, their sturdiness being most marked. If kept long enough in these pots for the first bunch of flowers to be well developed, the stems will soon begin to elongate unduly, and the final potting or planting out should be done before a root-bound state is arrived at. There is little or no likelihood of plants thus well prepared failing to show strong bunches of flower before they are 12 inches high, and it will be largely the fault of the cultivator if they subsequently fail from disease or other causes. Now is a good time to sow seed if an early crop of Tomatoes under glass is required, but for greenhouse and open-air culture from the middle to the end of March is quite soon enough to raise plants. W. I.

FORWARDING EARLY PEAS IN POTS.

THE article on forwarding early Peas in pots by Mr. Wythes at page 13 appears at an opportune time. There cannot be any question as to errors of culture in this phase of Pea management, and the truism, the more haste the less speed, is very evident in the raising of early Peas in pots. Now that the practice of sowing Peas in November or December is not practised so largely as in days gone by, many people appear to be in too much haste at the turn of the year to forward them as much as possible, by sowing in pots and boxes and placing them in heat, with the result that they become drawn and tender, and also very much pot-bound. Economy now being the order of the day, it also has to be extended to the seed list, and if no more seed of the earliest Peas were ordered than would be sufficient for a first sowing, and these should have happened to have been sown in heat early in the year, it is very evident the plants would be poor when a seasonable planting time arrived. It having now become the practice to rely for a first crop on the dwarf earlies, such as Chelsea Gem, William Hurst, and English Wonder, these are not so apt to show outwardly the ill effects of early sowing, like William I. for instance. Being dwarf growers, they do not grow very high whilst in pots, or at least not much above a couple of inches, but the pots will be filled with roots, and after the plants are set out they grow but very little afterwards. In fact many people are often surprised at their showing for bloom when only a few inches high. The taller growers will become spindly and fall about, and very often need sticks for their support before it is safe to plant them out.

By not sowing the seeds before the end of January or the first week in February, the condition by planting time will be quite different, that is, of course, if not hurried on in heat, as even at this time there are ample opportunities for their becoming spoiled if this latter practice is indulged in. Being brought on under cool treatment, the plants grow along sturdily, so that they are in fine condition for planting. Even if inclement weather should occur afterwards they are not likely to receive much of a check, and with the return of fine weather they grow away freely. Like Mr. Wythes, I look upon small pots for sowing the seed in as an evil. I have always been an advocate for sowing in 5-inch pots.

Whenever the weather and soil are in a suitable condition the Peas are planted out. If they are dwarfs, they will well repay the shelter of a warm south border. These early south borders generally have extra attention bestowed upon them in receiving additions of other material, so as to

make them as fertile as possible. A dressing of well-prepared manure and wood ashes should be applied in all cases where support is needed. In planting, turn the plants out of the pots carefully and set them 6 inches apart in the rows, drawing some of the best soil about the balls, also seeing that it is well pressed about the roots, this assisting the plants to take readily to the soil. After the Peas are planted, draw the soil up on each side as a means of protection, at the same time placing some short spray sticks round them. Some people, I know, think it a waste of time to place sticks to dwarf Peas, but the advantages far outweigh any supposed disadvantages. A. Y. A.

Two good winter vegetables.—It is an easy matter to have plenty of good vegetables during the summer and autumn months, but this is not so from November onwards. To meet this demand I grow a large breadth of Couve Tronchuda. This I find most useful from October onwards, and it is much sought after by the cook. When the heads are large and the leaves have big midribs, then it is that it does us good service. In my case only the midribs are used, and dished up like Seakale. To obtain the best results I find it best to sow a little seed under a handlight early in the year. Some people complain that this Cabbage is not hardy. Be this as it may, I find it as hardy as other Cabbage. After the heads are cut I find many of the stumps live through the winter and give some beautiful tender greens all through the spring. Chou de Burgheley, although severely condemned by many cultivators when first sent out, is also valuable when it is taken into consideration how hardy it is and that it comes in from the beginning of the year onward, and that the heads are very white and tender. To have it in this state and at this time I sow it at the same time as Broccoli and plant at the same time. At the present time (Jan. 3) I have a fine lot growing on a piece of land from which Strawberries had been cleared.—F. A. C.

GARDEN REFUSE.

THE above term includes all that is supposed to be of little value in the garden, but which often gives the grower of choice vegetables and fruit just the materials required to mix with unsuitable soils. At no season of the year than now is there a better opportunity to secure these aids to enrich the soil, at the same time doing a vast amount of good by the removal of useless, often unsightly material. One of the best manures we have is wood ashes, which most plants in a vigorous state like. At this period the quarters occupied by last year's crops will require to be got in readiness for the next season's crop, and in gardens of any age with plentiful supplies of manure failures often occur by clubbing, wireworm, and other insect pests. There is no better remedy than stopping the supply of animal manure and treating the soil to liberal dressings of wood ashes, lime, or burnt garden refuse. In case any doubt exists as to the richness of the soil, wood ashes may be used, adding a liberal quantity of guano, or the latter may with advantage be applied as a top-dressing. There is always from this date till late in the spring a wealth of material that may be converted into charred refuse, as all prunings, useless growth, stalks of Cabbages, Cauliflowers, or any of the Brassica tribe may be utilised for this purpose, and if a large quantity cannot be secured, certain quarters may be attended to, doing the worst each season. It is surprising what a mass of suitable material can be secured when means are taken to collect and prepare for this purpose. There is no better fertiliser than charred refuse for soils badly infested with wireworm, adding a small quantity of gas lime. For Asparagus beds in heavy clay soil the garden refuse, after having been placed in heaps with a liberal quantity of quicklime and turned occasionally, is of great value. Leaves, which are often very plentiful, may always be turned to valuable account. They decay rapidly if placed in sunken pits or covered with soil and

saturated with liquid manure. Mortar rubble from buildings should always be utilised for fruit trees, and if not required at the time should be stored for use when required. If there is any surplus matter that is not sufficiently decayed, allow it to get all the moisture possible, giving liquid manure or drainings from manure heaps. This will soon be in condition, and may be used to advantage for such crops as Beet, Carrots, Parsnips, &c., later in the season. G. WYTHES.

ORCHARD AND FRUIT GARDEN.

REGRAFTING ORCHARD TREES.

As an aid to the productiveness and more general improvement of our orchards, which are proverbially in a more or less neglected condition, some information on the method and utility of regrafting may be useful, especially to those who wish to turn their attention to the growth of our more profitable kinds of pot fruit instead of converting the whole produce into cider. Suitable trees for regrafting are those in fairly thriving condition, but which do not bear or only produce fruit of inferior quality. Anyone experienced in the matter can tell at a glance whether a tree is likely to pay for regrafting from the shape, age, growth, and evenness of the wood. As a rule it is not wise to head down trees with large or knotty limbs, having all the bearing sprays at the end. But crab and kernel trees, that is, trees from the pip which have never been grafted, will generally do even if old. Of course, the Blenheim, although it may be unproductive for the first 20 years, should never be headed, as it will ultimately be profitable under proper management. Also, as sour kinds are more or less in demand for jam-making, it is not wise to be too hasty in condemning a tree. I had intended regrafting one which was comparatively unproductive for some time, but last season the crop of fruit was 9 cwt. We may be satisfied with over £1 worth of fruit from a tree even if only once in two or three years. On the other hand, I have had, from a formerly useless tree, 1 cwt. 10 lbs. of Lord Suffield (sold at £1 per cwt.) the fourth year after regrafting. Trees may be headed down now (hard frosty weather is favourable for the work), or any time before grafting commences. I have had this done in May, when the leaves are appearing, with as good, if not better results than earlier. But on the whole it is advisable to take the heads off early and have the wood cleared away, especially where much has to be done, or (judging from my own experience) owing to the great push of work in April and May, the grafting would probably be neglected or postponed. When done early the branches should have another inch or two taken off at grafting time to ensure fresh sappy bark. The object being a large head in a short time, commence by sawing off the lower branches a good distance from the trunk, always cutting first on the under side of a bough to prevent splitting, and remove the head with a view to inserting the grafts at fairly equal distances, from fifty to 100 on a large tree. I prefer wood from 1 inch to 3 inches in diameter, the former taking one or two grafts, the latter three or four. It is easy to thin out afterwards if requisite, but of little use attempting to patch up by inserting grafts another season.

Regrafting is a simple operation as now performed. I have put in thousands with only a common pocket knife. The branch being sawn off at a smooth part free from knots, &c., pare away the rough edge of bark, then cut one or

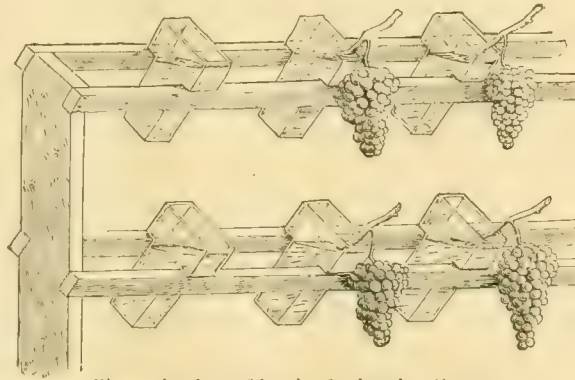
more slits (according to the size of stock) through the bark 2 inches down, open slightly at top: now take the graft, make a clean smooth cut of $1\frac{1}{2}$ inches, slightly pare the green outer bark from lower edge and insert firmly, tying on with moist raffia. The part inserted should contain no bud or unevenness to prevent perfect fit of bark to bark, and the grafts should be of sufficient length to allow two buds above the clay. The lower part of graft inserted in soil will be brown: this must be cut away. With a little practice 300 grafts may be successfully put on in the day, while any careful handy workman will soon learn to manipulate and apply the clay, which should be done at once and a piece of raffia also twisted three or four times round it and tied. We used to be troubled with the wind blowing out the grafts in summer, especially when the growth was strong, but a tie round the clay prevents this and keeps all firm. The clay will do no harm if left on till the following winter, when it must be cleared well away, with any Moss, loose bark, or shoots growing on the original wood. This should be attended to every season, and a spraying with liquid lime before the buds burst will be very beneficial, tending to clean growth and freedom from insect pests.

As to varieties most suitable for re-grafting, the large early kinds are the most profitable. They realise about double the price, meet with no foreign competition, and by the early harvesting there is not only less risk from gales, but the trees have more time to recuperate their bearing vigour for the next season, while the fruit is out of the way before the bulk of our orchard produce requires attention. My favourite is Lord Suffield (though it may not be equally suitable to all soils and situations), and I annually insert all available grafts of this variety. It is particularly suitable where there is limited head room, as frequently happens in re-grafting a tree here and there in a crowded orchard. Some object to these early prolific varieties on account of their tendency to become exhausted sooner than other kinds, but in my opinion it is simply a matter of feeding. It stands to reason that a variety like Suffield, with limited head growth, and consequently limited root-run, will exhaust the available soil through constant bearing earlier than a shy-bearing kind with extended root-run, unless the former is well fed with the necessary fertilisers for fruit production in the way of potash and phosphates. Ecklinville Seedling is good all round for young or old stocks, and requires room. Dumelow's Seedling, a valuable late variety, is a strong grower, soon making a fine head. King of the Pippins is a favourite in the market, and should be largely grown. This Apple realised with me in 1890 up to 32s. per cwt., and last year to 18s. per cwt. It pays well (as, in fact, will all good fruit) for extra manuring and cultivation to ensure size and colour. Never put a weak growing kind on to a large stock or tree. We have not much choice in really good early dessert Apples in this respect, most of them being comparatively weak growers. Red Astrachan is strong, first-class for market, but rather shy in bearing. Half-a-dozen kinds are better than a quantity. In some orchards of pot fruit we will scarcely find half-a-dozen trees of the same sort. This is where the Americans are beating us. In grafting keep the varieties as much as possible together; it saves time in harvesting. Grafts should be cut this month or next and inserted half their length in the soil in a shady place. Strong shoots of the former year's growth are always to be preferred.

Pear trees, if sound and not too old, may also be grafted. In Pears we have a choice of

a great variety, and it is difficult to say what kind is the most profitable. *Souvenir du Congrès*, *Beurré d'Amanlis*, and *Pitmaston Duchess* are large, good, and strong growers. Unprofitable trees against a wall can be sometimes re-grafted to advantage. Plenty of grafts should be inserted, and if headed back judiciously, the wall will be covered in three or four years. Nothing pays better for wall protection than a good Pear, and all available space should be utilised. For a southern aspect say *Jargonelle*, and for east and west the three kinds mentioned above. A good proportion of potash in the soil, either natural or applied, is essential for the successful growth of Pears. Plum stocks of say 1 inch diameter may be grafted in the same way as Apples. Wild Plum stocks will occasionally be found growing in the hedges. When the hedge is pleached or cropped, these should be marked, headed back, and grafted with *Victoria* or *Czar*—the two most profitable Plums in cultivation. I have just marked twenty-five stocks in a hedge for this purpose. February and March are the months for grafting Plums, Pears follow next, and Apples in April up to the middle of May.

The present unsatisfactory state of our orchards is due in great measure to the unfair conditions and retrogressive influence of the land laws; in fact, this is more or less the root of our



Glasses in place of bottles for keeping Grapes.

agricultural depression generally. Tenants, on quitting, ought to be, and will be before long, compensated for any increase in value to their holdings which may accrue from the re-grafting of orchard trees with more profitable varieties as well as other improvements. When there is every facility for purchasing land in small quantities at a reasonable price, and the tenant, even of a cottage, can secure full compensation for all improvements; when village life is made more attractive by local powers of administration, and by the creation in large numbers of fruitful and profitable small holdings, then we may expect to hear less of the unemployed and consequently degraded condition of the masses in our large cities.

Holmer, Hereford.

E. W. BEAVEN.

Melon La Favorite.—This Melon, where it succeeds well, is without doubt a finely flavoured variety. In 1891 I noted it as winning first prizes at several shows when tested by flavour. Unfortunately, however, the plants do not by any means hold out so long as they should do; hence the fruits oftentimes are deficient in flavour, even when of fair size. In some instances I have noted that the fruits have failed to reach even to this advanced stage. This failure must not be attributed to a deficiency of cultural knowledge or attention, for only last year I know that it failed under the best of treatment, and that where other

standard kinds were in first-rate condition. Possibly it requires the soil exactly suited to its requirements. Personally speaking, I have resolved to discard it as an unreliable variety, giving preference to such as *Hero of Lockinge*, *Blenheim Orange*, and other good sorts. Furthermore, *La Favorite* is later in ripening; hence, when grown with other sorts that ripen before it, the treatment for the one does not accord with that needed for the other. I should like some of our Melon growers to state their opinion of *La Favorite*, which in my case is only such in name — GROWER.

KEEPING LATE GRAPES.

THE accompanying illustration represents a capital glass which is used by Mr. Stanton, of Park Place, Henley-on-Thames, for keeping Grapes. It is a great improvement on the bottles generally used, and is very cheap. The receptacle is made of clear glass, and having a wide mouth, water can be easily added from a small watering-can as required without the trouble of taking it down or removing the Grapes. Having square sides, too, it may be moved along in the racks to suit the size of the bunches, as there is no need to fix it, the rails being just sufficient distance apart to admit the bottles between, and fixed at such an angle—as illustrated—that the bunches hang clear. The weight of the bunch will press the immersed end of the stem against the upper side of the bottle, and so prevent its slipping out. It may be urged that as *Alicante* and *Lady Downe's*—two of our best late Grapes—often produce their best bunches near the main stem of the Vine, such bunches could not be kept in these bottles through the stem at the base being too short; but there is no difficulty in this, as the Grapes will keep very well if the terminal end of the shoot is inserted in the bottles. It is always best to leave about 18 inches of stem beyond the bunch when the Grapes are cut, as otherwise the berries are apt to crack through absorbing too much of the water when first stored. It is well also to cut off the immersed end about once in three weeks to maintain a free passage for absorption.

W. H. LEES.

Trent Park Gardens, New Barnet.

CANKER IN FRUIT TREES.

I HAVE been interested in the discussions and notes on the above subject, especially as I have had some experience with this scourge. In a new orchard on Grass it constantly shows itself in the forks of the branches or at the junction of the branches with the stem. When cut cleanly out it appears to heal over, so that it seems that with due care it may be kept under. The *Wellington* seems to be subject to this form of canker, as being straight in its growth the clefts of the branches are very acute, and as the branches increase in thickness they seem to grow into each other, and the pressure seems to cause a wrinkled slit in the bark into which the water, it seems, lodges, and probably does something to cause or add to the evil. Some trees of *Ecklinville* show it very much, especially at the junction of the branches with the stem. A splendid bush of the latter variety, the finest and most vigorous of the lot, was badly attacked. It was cut out, care being taken to take out every stain of brown in the bark, and the bark is now growing up quite healthily. The *Queen* so far has not shown the slightest tendency to this complaint, but, as far as I have grown it, it seems

to have a grave fault for an exposed situation in that the fruit-stalk is so slight, that the fruit is all cleared off by the wind when half grown. On some soils this may not be noticeable. The tree forms a beautiful pyramid. During the last five years I have planted over three hundred trees on Grass, and my experience may be interesting to others with similar intentions. The land selected was an old Grass field over an acre in extent. Soil a rich dark loam of say 12 inches or 20 inches in depth lying on marly clay, this again lying on solid red clay. The land slopes gently to the west, is well sheltered from the north, and was drained about twenty years ago at about 6 yards apart. The course pursued in planting was to mark out a circle say 4 feet across, carefully remove the turf, throw out the top soil, break up the marl, return the sod on to this, green side down, fill up the hole with the soil within 2 inches or 3 inches of the surface, place in the tree and add a small barrowload of fresh soil and spent manure, add more soil and tread the roots firmly, and then add the remainder of the soil, thus leaving the tree slightly above the surface. Visitors have been surprised to see fine robust young trees with the top roots visible on the surface, yet such trees are in some cases the most robust, illustrating that little-known fact that shallow planting is the most conducive to success. Though pretty much exposed, no stakes have been used except in cases of several trees which have begun to lean over. For permanent trees I like the Ecklinville, as its style of growth is the finest I know for a free bush, Bramley's Seedling, Warner's King and Queen. For early fruiting and heavy cropping nothing equals here The Ringer and Lord Grosvenor, the latter especially. Small trees of it three years old on Paradise planted as filling up trees had as many as eight fine Apples this last season, while nearly all the trees of Ringer which were planted three years ago were loaded to the ground. The Hawthorndens have been a failure, refusing to grow at all satisfactorily. J. STORMONTH, JUN.

Kirkbride, Silloth.

VINES, MIXED AND OTHERWISE.

HOUSES of mixed Vines, that is to say, which contain several varieties, are the most common and, all things considered, the least satisfactory. It is true many very excellent crops are grown in these mixed houses, but where a compartment can be given up to one variety, the requirements of that particular sort can be met without detriment to anything else in the house. Some varieties require very much more heat than others throughout their fruiting and ripening period, and if that is accorded them in a mixed house, it is almost certain to react prejudicially on the rest. All may in many instances thrive well together under similar treatment up to the ripening period, but some, being in advance of others, should have air admitted more freely than is good for those ripening later on. These difficulties can be and are very frequently surmounted with great credit to those who turn out such excellent crops from mixed houses.

The most valuable of all Grapes, the Muscat of Alexandria, is one of the worst that can be introduced into a house of mixed varieties. It requires a higher temperature, more especially during the ripening period, than any other variety other than those originating from it, notably Canon Hall Muscat, and if done full justice to, no black Grapes, with the exception of Alnwick Seedling, will colour properly in the same house. More often than not a compartment is given wholly up to Muscats, and even then failures occur, owing to those in charge being too niggardly in the matter of turning on plenty of fire-heat during both the flowering and ripening periods. It does not follow that the houses ought to be kept both hot and close,

but, on the contrary, they ought to be well heated and at the same time freely ventilated, plenty of warm air being most needed. Under these conditions they need, and should have, more moisture and liquid food supplied to the roots than are required by the Vines in less arid atmospheres. Fail to attend well to this, and both shanking and later on shrivelling will most probably take place. The Muscat of Alexandria will, however, succeed fairly well in a mixed house, as I have repeatedly proved. Really good bunches are sometimes cut from Vines grown in a house with Black Hamburgh, Madresfield Court, Foster's Seedling and such like, all being started moderately early, or say early in February. In later houses, with Alicante, Lady Downe's, Gros Colman and other favourite keeping varieties, Muscats are apt to colour indifferently and to shrivel prematurely. When planted with other varieties, Muscats ought always to be placed at the sunniest, warmest end of the house, and the front and top lights being hung separately need never be opened to nearly the same extent as the rest in the same compartment. If Canon Hall Muscat is included in a collection, one or two rods at least should be located at the lightest end of the house and immediately over the hot-water pipes. According to my experience, Mrs. Pince's Muscat does not succeed particularly well in a Muscat house, and if a compartment cannot be wholly given up to it (and I have seen it at its best thus treated), it should be grown in an early started mixed house. Strange to relate, some of the best Black Hamburgh I grow each season are ripened with Muscats. A rod is trained along the front or coolest part of the house, so that the buds do not break much in advance of the Muscats or ever get so much heat as the latter, and enough front air can be admitted during the ripening period to ensure perfect colouring without greatly lowering the temperature of the house. Gros Guillaume at the coolest end of the same house never fails to bear well and the bunches colour satisfactorily, though there may be some room for improvement. Foster's Seedling also finishes well in a mixed house where Muscats are most studied.

Madresfield Court is another superior variety that can be most successfully grown in a separate compartment. Not, as it happens, because it requires much more heat than Black Hamburgh, but in a mixed house it is no easy matter to prevent the berries from cracking and decaying wholesale either when ripening or after they are ripe. This cracking is most liable to take place during a damp, muggy time, but may happen in fine, bright weather, an excess of moisture in the atmosphere being the principal cause. It is very risky to ever wholly close the ventilators after colouring has well commenced, a good circulation of dry air being the surest, I may say the only, preventive of cracking. If, therefore, Madresfield Court must be grown with other varieties, and it is too good to be wholly left out, a Vine or Vines should be planted at the end of a house where cracking can be easily prevented and perfect colouring favoured by means of a few openings in the glass. When colouring commences, remove a few squares of glass in a line with the bunches and substitute some half-inch mesh galvanised wire netting. This will prove a safeguard against cracking without unduly cooling the rest of the house. Early and second early houses are the proper places for this noble Grape, it not being suitable for growing with late varieties. Foster's Seedling is also liable to crack during the ripening period, but though a serviceable early variety, it does not merit a

compartment to itself. In a mixed house it may be planted next to the Madresfield Court, and there will then be enough air admitted constantly through the netting-covered openings to prevent cracking. Where Black Hamburgh is given abundance of air from the time colouring has commenced, a little front air being admitted every night to promote high colour, there is nothing to prevent either Foster's Seedling or Buckland Sweetwater from sharing the same house, few or no berries being lost by cracking. Gros Maroc is seen at its best under Black Hamburgh treatment, but may well have the warmest end of the house with a view to effecting an early break. The Black Hamburgh stock also suits it admirably, and there is nothing, therefore, to hinder its being inarched or grafted on to it.

Gros Colman, owing to the great demand that has sprung up for it in the markets, is more grown by itself than any other variety that can be named, not excepting either Black Hamburgh or Muscat of Alexandria. It is in separate compartments, too, that the best samples of it ought to be grown, this variety being, perhaps, the slowest of all to ripen and the most impatient of being subjected to much fire-heat. Grown in a Muscat house, the colour of the berries when fully ripe is nearer the colour of a fox than anything else I can think of; whereas in a lower temperature, with an abundant circulation of air, the colour is quite black and the bloom good. As a rule it will succeed well in a house with Alicante, Lady Downe's, and Alnwick Seedling, the coolest end being assigned the rod or rods as the case may be. Gros Guillaume should be started early or not later than the middle of February, as it frequently fails to ripen satisfactorily under conditions that suit very well the other late black Grapes mentioned. Golden Queen, Mrs. Pearson, and White Tokay are not worthy of being grown in a compartment by themselves, but will succeed admirably in an early started house of mixed late Vines, the warmest and sunniest end being accorded them. If the colouring is late in taking place, the chances are that it will also be faulty.

In very many gardens it is not possible to devote a whole house to either early or late ripening varieties. Formerly, when only a single vinery was on the place, this was filled with Black Hamburgh and probably a Vine or two each of Buckland Sweetwater, Foster's Seedling, and a Muscat, the last, however, being soon cut out again in many cases. Now-a-days, fewer early Grapes and more late ones are wanted, the owners of the houses not being satisfied unless some are available up to midwinter. As a consequence, many solitary vineries now comprise rods of Gros Maroc, Alicante, Lady Downe's and Gros Colman in addition to the earlier varieties named, and fire-heat not being stinted in the autumn and all the time the bunches are hanging, no great difficulty is experienced in keeping the three last till midwinter or even much later. This Christmas I saw several presentable bunches of Gros Maroc that had been grown in a mixed house by a single-handed gardener. These were quite a credit to him. W. IGGULDEN.

Strawberries for forcing.—In reading Mr. J. Lambert's notes on Strawberries in THE GARDEN (December 24), in which he states that Strawberry John Ruskin and Vicomtesse Héricart de Thury started together were both ready for table on the same day, I would like to ask him when he started the above-named Strawberries. My experience is that Vicomtesse Héricart de Thury for producing ripe fruit in the middle of February and first week

in March is very far behind John Ruskin or La Grosse Sucrée. I have gathered very fine fruit of La Grosse Sucrée on January 27. Vicomtesse Héricart de Thury, started at the same time, was a failure. In fact, the latter is a very good forcer as a second early to come in end of March and April, but for February and early in March it is, I consider, not worth growing. To have ripe Strawberries at the end of March and through the month of April is an easy matter, but in January and February a better variety than the Vicomtesse is required—at least, such is my experience. In March many of our best Strawberries can be had ripe that as regards size and flavour put Héricart de Thury in the shade.—W. C. LEACH, *Albury Park*.

STARTING FORCED STRAWBERRIES.

It is well known the slower the plants are forced the greater the certainty of success, so that those who require fruit early in the season would do well to give ample time and force in suitable temperatures. I lately saw it stated that ripe fruits had been secured by the end of December. It would be interesting to know the proportion of fruit to each plant and the quantity of plants forced. Another point worth knowing is whether from last summer's runners or old plants. I fear whatever system may have been adopted no large quantity of fruit would be obtained unless the plants had received a thorough rest. The best results in Strawberry forcing are really secured from plants started early in the year and given plenty of time with abundance of air. The best fruits I ever grew were from plants started on shelves in an orchard house close to the glass without bottom-heat of any kind, and not removed till the fruit was colouring. This could not be termed early forcing, and one is obliged to resort to speedier methods to get early fruits. To do this, excess of heat often destroys a good prospect of a crop, so that the longer the growing or forcing season the greater the success. Many excellent cultivators do not use bottom-heat at all, but in such cases to get early fruits early runners are imperative, also well ripened plants. These latter are placed in their forcing quarters early in December close to the glass with a free circulation of air, and in such positions, provided a low temperature is maintained at the start, say 45° to 55°, with a rise of 12° by sun-heat, the minimum temperature in severe weather, and 45° to 50° at night, with ample supplies of moisture, there will be fewer failures and less trouble with insect pests than if a higher temperature were maintained. Those who have a Peach or orchard house ready to start may find room for a few early Strawberries. I would advise a thorough cleansing previous to their introduction, as Strawberries are most troublesome in fruit houses when not thoroughly prepared. If in a dirty state I find nothing better than a little sulphur mixed in water, dipping every plant before placing on the shelves; dry sulphur is also useful when dusted over the foliage. This checks mildew, but does not reach spider, so that it is best given in a liquid form.

When introduced thus early little water is necessary, as the roots will be in a moist condition. Dryness at the root is the commencement of the grower's troubles, bringing all kinds of insect pests. I also consider the old method of top-dressing the roots of little importance, and here I may be taken to task, but I think it a waste of time, a destruction of roots, and a certain means of preventing the proper amount of moisture reaching the roots. When a certain quantity of fresh material is added to the surface without any roots to absorb the moisture this remains in a damper condition than the ball of earth lower down. In these days when there is a wide choice of fertilisers that can be used at the time the plants require assistance, this removal of soil (often roots) is not necessary. I would rather advise leaving more space on the surface at potting time, so as to mulch with rich soil and manure when the flower-spikes are pushing up. When bottom-heat is used it should always be carefully applied; indeed in some cases if proper convenience

cannot be afforded, I would prefer to stand the plants on the bed to plunging them. When leaves are used, some fibre or old leaf-mould may advantageously be used for plunging; if stable litter is the heating agency more care is required. Much good may be done by using thin boards or racks in case of high temperature, and by this means save the plants; 10° to 15° higher temperature at the roots over the day temperature is ample. When selecting the plants for early fruits, let it be remembered that the largest kinds are not always the best fruiters, especially for early work. So far I have found none better than Vicomtesse Héricart de Thury, La Grosse Sucrée, and Keens' Seedling. Early thinning of the blooms is also essential, as this hastens the formation of the fruit left. In fine weather a free use of the syringe will keep down spider and greatly benefit the plants. When mildew is noticed maintain a drier atmosphere and cover the pipes with sulphur, doing the work in dull weather. Liquid manure should be used freely after setting. I like cow and sheep manure in a liquid state, or a good fertiliser sprinkled on the surface. G. WYTHES.

PRUNING NEWLY-PLANTED APPLE TREES.

SOME WRITERS advise that newly-planted trees ought not to be pruned the same season as planted; others, again, say that instead of cutting them hard back, the points only should be taken off. My experience leads me to say both these plans are wrong, as I will endeavour to explain. Take, for instance, a standard Apple of any variety, but, for the sake of argument, suppose we name Ecklinville, which is one of the best sorts for this form of growth. If the tree is not pruned the first year, but cut hard back the second, we lose a whole year's growth. The argument against pruning the same season as planting is that it is unwise to give two checks to a tree at the same time. The tree received one at its roots when being planted, and to cut the branches would be giving a second. The fallacy of this reasoning is easily shown. The tree, in its weakened state through planting, has not the power to push growth from all the buds the shoots contain. The sap, as a natural consequence, rushes to the tips of the shoots, a weakened growth being produced by the extreme eyes, while those buds nearest the base of the tree remain quite dormant. The result is that the tree at that part always has a bare stem. Now, if the tree had its weakened energies concentrated into a limited space of say 6 inches or even 8 inches in strong shoots, a much more satisfactory growth could be expected the first year. The plan of cutting off the points of the shoots, say a couple of inches from each, will result in only a few inches of new growth being added—perhaps a couple from the stronger and hardly any from the weaker ones. Several eyes at the base will remain dormant, while those that do push at all, with the exception of the leading one, will form fruit buds. I suppose it will be allowed by all that the first object in a standard Apple tree is to encourage growth, and not the formation of fruit buds at so early a stage of the tree's existence. The simple topping of the shoots does that which is not required—the formation of fruit buds instead of a free growth. The following year even these premature flower-buds will expand and probably set fruit, thus again weakening the growth of the tree. The proper method then that I consider gives the best results is to cut the shoots back to within 6 inches of the base in the case of weakly grown trees, allowing a couple or so more inches to the stronger, selecting, of course, an outward bud to cut to as being the best

means of maintaining the desired shape of the tree. The result of this pruning will be that shoots from 1 foot to 2 feet will be made the first year, thus laying not only the foundation of the future tree as regards its proper clothing with branches from the base, but providing space for a full crop of fruit in a few more years. The first year should surely be devoted to the encouragement of growth.

Of course, much will depend upon the manner in which the trees were planted and how they are managed the summer following the pruning. If they are allowed to suffer from want of moisture at the roots in consequence of a scarcity of mulching material or a scarcity of water, growth like that named will not be forthcoming. All newly-planted trees ought, however, to be mulched the first year; it not only saves time in watering the trees, but it keeps the roots cool and moist during the hottest weather. When the soil is dry it cracks, and allows what little moisture there is to escape by the action of the sun upon the soil drawing up the moisture through the cracks. The early part of February is a good time to prune newly-planted trees; no matter whether they be standards or bushes, the treatment should be the same in this respect. The only point of difference is that the shoots cannot always be cut to one uniform length as in the case of standards; some branches on the bushes require a greater length of shoot to be left in some parts to give the tree the necessary shape. E. M.

FRUIT GROWING.

A GREAT deal has been said and written of late about the danger of exaggeration in regard to the profits of fruit growing in the open air in England. Hardly does anyone venture to take a sanguine or hopeful view than numbers rush into speech or print asserting that the whole thing is likely to prove a mockery and delusion; and yet these gloomy forebodings are often far wider of the truth than the most rosy estimates. Within the last few weeks I have been assured again and again that Apples and Pears cannot be grown in certain districts or counties. I have gone into these districts, collected samples of their products, and exhibited them in public, to the astonishment and in several cases to the complete conversion of the doubters. Local fruit shows have a special value in this connection. Such object lessons can hardly be ignored.

Very recently I gave a course of lectures on fruit culture. I had a capital audience, the sympathy of the chairman and other leading farmers and others. I appealed to the audience to produce at the next meeting, or there and then, any samples of fruit grown by themselves. Several were produced on the spot, and the result after a few meetings was a box of local samples exceeding in size and quality those selected from the neighbourhood of London.

Gentlemen of long standing in the parish acknowledged themselves mistaken, and strongly advised a bold trial of fruit culture on the new lines of dwarfing stocks, root-pruning, surface feeding, &c. It may be added that some of the finest samples of Cox's Orange Pippin, Cox's Pomona, Wellington, Warner's King, Blenheim Orange, Ribston Pippin, King of the Pippins, Annie Elizabeth, Tower of Glamis, Dr. Harvey, &c., ever seen were those local samples from a district generally believed to be quite incapable of their production. Similar facts of a most cheering and suggestive character are constantly cropping up in regard to other fruit. In a country village where it was declared impossible to grow either, there were seen a Morello Cherry laden with fine fruit and a Catillac Pear in great perfection. In yet another district where Pear culture was declared utterly hopeless, over a dozen varieties grown on the spot were produced on the next occasion. And thus

and largely by such means of practical demonstration fruit culture moves on with sure and certain footsteps, and assumes the importance it deserves among our national industries.

CALEDONICUS.

ORCHIDS.

CATTLEYA AMETHYSTOGLOSSA.

THE first plant which I ever saw of this was in the garden of H. P. Reichenheim, in the Tein Garden outside Berlin. This was thirty years ago, and I afterwards saw it as a unique specimen in England in Mr. Warner's collection. Soon after this the Messrs. Low and Co., of Clapton, received a fine lot of it, but not many, I think, equalled Mr. Warner's plant. The Messrs. Low have every now and then large consignments of this Orchid, which keep it well before the public, for the beauty of its flowers commends it to everyone, and it appears to exist in very great quantities in its native place, so much so that I do not think this a variety of *C. guttata*, as some authors call it var. *Prinzi*. I rather here adopt the name given it, I believe, by Linden. The plant certainly has some resemblance to *C. guttata*, yet I think it is quite distinct. It has somewhat slender, erect, stem-like pseudo-bulbs, which usually attain a length of 2½ feet, and I have seen the bulbs reach 3 feet and more. These bear upon the apex a pair of large leathery leaves, and from between these the scape appears, bearing many flowers, which vary much in size and colour in different plants. This might be expected from a plant that seeds freely and evidently grows in a spot well suited to the development of the young seedlings. The flowers each measure 5 inches or more across, the sepals and petals being nearly equal, thick and waxy in texture, creamy white, suffused with a tinge of rose and spotted more especially near the margins with numerous spots (not blotches) of rich rosy purple. The side lobes of the lip are erect, in colour about the same as the ground of the sepals and petals, the tips reflexed and of a rich amethyst-purple. The middle lobe is of a rich and bright amethyst-purple. The flowers last in full beauty for a month, and they do not injure the plant if allowed to remain on for that period. I like to allow the plants to remain in the house in which the flowers open far better than to remove them to another, which is sure to be moister or drier and to have some variation in temperature, either of which affects the duration of the flowers to a surprising extent. Its usual time of flowering is the spring months, but I have seen its flowers at all seasons. Only last month I noted a very distinct and handsome variety flowering with Mr. Sander, of St. Albans, and this was not a recently imported plant either. It would be a desirable acquisition if we could ensure its flowering regularly at this dull time of the season. To grow this plant so that it will continue to make bulbs strong enough to bloom annually has somewhat puzzled the majority of Orchid growers. I usually find that it becomes smaller after about two or three seasons, and I am of opinion that it does not like such cool treatment as most of the Cattleyas are subjected to. I think the best place to winter this is with plants of *Laela elegans* in a house that does not at any time fall below 60°. If at any time the plant appears to be inclined to move too soon, it should be set where more air can

play upon it, and it should be kept a little drier, but I am totally opposed to the roasting system which used to be applied to this family.

WM. HUGH GOWER.

Cattleya labiata Mme. Martin Chuzon.

—A very nice figure of this appears in the October number of the "Orchidophile;" it has white sepals and petals, and the front lobe of the lip is stained with lilac-mauve, yellow at the base. M. Godefroy-Lebeuf claims for this plant that it is the whitest form known. About the same time in 1892 I saw flowering with Mr. Sander, at St. Albans, a wholly white *labiata* saving a tinge of yellow at the base, so that this variety figured is not the whitest flower known.—G.

Cattleya Percivaliana.—I have now before me three fine varieties from three different persons, all being good and distinct forms. "J. W.'s" is the first that came to hand. The lip of this is very rich, but there is little of the warm yellow in it. The flower from Josiah Williams is the largest



Cattleya amethystoglossa.

and richest in colour, the sepals and petals being bright crimson-purple, lip of the same colour, richly suffused with tawny orange-yellow, the front lobe stained at its base with deep maroon-purple—certainly a large handsome flower. The form from Mr. Cypher is nearly as good, although smaller; the sepals and petals are rich and bright in colour, as also is the lip. The blotch of maroon on the lip is very deep.—W.

Zygopetalum intermedium.—More frequently this *Zygopetalum* is grown under the name of *Z. Mackayi*. The two species are, however, distinct, although at the first glance they look almost identical. *Z. intermedium* is the better garden plant of the two, its flowers being larger than those of *Z. Mackayi* and at the same time quite as beautiful in colour. The flower-spike is erect, 2 feet high, and bears some six or seven flowers. Each flower is close upon 3 inches in depth, with the five sepals and petals arranged in semi-circular fashion above the lip; in colour they are greenish yellow, blotched irregularly with chestnut-brown. The lip is large and remarkably handsome, and in colour makes a most striking contrast to the other segments. The ground colour is white, but freely marked with

radiating lines of a bright blue-purple. Except in the matter of size, the chief difference between this species and *Z. Mackayi* is in the lip. In *Z. intermedium* the lip is more hairy and the veins are of a purple shade; whereas in *Z. Mackayi* they are blue. On the whole, Reichenbach may be said to have estimated their proper affinity more correctly than older botanists when he reduced *Z. intermedium* to a variety of the earlier introduced *Z. Mackayi*. That species was first brought to this country in 1827, *Z. intermedium* in 1844; both are natives of Brazil. The horticultural value of *Zygopetalums* is well known, and scarcely any garden, whether Orchids are grown in it or not, is without *Z. Mackayi*. It is one of those plants which, whilst other Orchids come and go, keep on flowering regularly year after year without much trouble or attention. The same applies to *Z. intermedium*. Both should be grown in an intermediate house, potting them in a compost of peat fibre and chips of potsherds, and using in addition a little Sphagnum towards the surface of the pots. When growing they like abundance of water and need never be kept very dry. The chief desideratum is a strong healthy growth. This obtained, flowers are sure to follow.—B.

Vanda teres candida.—J. Brown, who has charge of the fine collection at Arddarroch, sends me a flower of an excellent variety of this. It has large and full sepals and petals which are of the purest white, the side lobes of the lip also of the same colour, the exterior lobe white with a few freckled lines of rosy dots, and the throat stained with lemon. This variety was figured in the "Orchid Album," t. 409, but the flower before me is fuller in all its parts. It is a very singular time of the year to have any form of this species blooming. This is called *alba* sometimes, but it was named *candida* by Reichenbach from a plant that flowered with Mr. Whittaker at Crewe Hall some few years ago.—W. H. G.

CATTLEYA DOWIANA AND AUREA.

I AM asked by "H. M." what he is to do with these plants. He says he has kept them as quiet and as dry as he could, but now they seem as if the eyes would start away in spite of all he can do. I would advise him to keep the plants for a few weeks longer as cool and as dry as he can without injuring them. "H. M." has followed my advice for three years, but has had no flowers yet. He says he thinks now they are strong enough to flower and that they will do so from their next growth. Care should be taken during the coming few weeks to keep the atmosphere as near 52° as possible, and should we have any warm days, admit air freely, and during this time I would not mind if the glass went up to about 56° or 58° even for a short time. By doing this and keeping the plants from starting, you will be preserving them for the longer daylight. If you cannot keep them from growing any longer than the beginning of next month, then raise the temperature to 58° at night, rising 6° or 8° in the daytime, until the *Cattleya* house temperature is fully maintained. I would prefer that their growth should not commence until towards the close of February, then I have found these varieties flower freely enough. I suppose the reason why "H. M." has not had any flowers upon his plants is because they were young and small when he had them, and perhaps at first he did not get them to rest well through the dull days, this inducing and producing too weak growths. A friend assured me in the month of December that he had never missed flowering *C. aurea* since he took the advice to prevent any movement of the buds or eyes until the days began to visibly lengthen. I think this is all that is necessary, and when the plants do start away, every care should be taken to make them grow as vigorously as pos-

sible. *C. Dowiana* was first discovered about forty-three years ago, but it was about fifteen years afterwards before living plants were introduced to this country by the Messrs. Veitch and Son. The variety *aurea* was introduced by M. Linden, having been found in a district many hundreds of miles from that in which *Dowiana* is found. Roezl found it in Antioquia. The variety *chrysotoxa*, sent out by Mr. Sander, appears to me a very excellent form of *aurea*, the colours being richer and brighter.

WILLIAM HUGH GOWER.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY.

JANUARY 17.

THOSE who ventured out in the inclement weather of Tuesday last to the above meeting will have been amply rewarded for their trouble. The gathering was not, it is true, a large one as contrasted with others in more propitious weather, but it was in all respects an excellent one for mid-winter. Orchids were not present in large numbers, but there were several highly meritorious hybrids shown. Particular note should be made of *Calanthe gigas*, a superb variety from the Veitchian collection, which, if we are not greatly mistaken, it will be a difficult matter to surpass. Several fine forms of *Lady's Slippers* were also contributed from various sources. Another feature amongst the Orchids was *Cynoches pentadactylon*, a singularly beautiful species. The floral portion was well represented by a remarkably fine group of *Begonia Gloire de Sceaux*, which was of itself quite an attraction. Some finely cultivated *Cyclamens* and a few *Chrysanthemums*, with some splendid trusses of the *javanico-jasminiflorum* *Rhododendrons* (very bright), were likewise shown. Amongst the fruit there was a splendid and most comprehensive collection of Apples in fine condition, having been well preserved.

Orchid Committee.

At this meeting first-class certificates were given to

CALANTHE GIGAS (*C. Sanderiana gigantea* × *C. vestita gigantea*).—This fine hybrid bore one spike more than 4 feet in length from the pot, the growth also of bulb and foliage being of a luxuriant character, the former partaking much of the *C. vestita* parentage, whilst the latter was very fresh and healthy—a desirable addition in itself alone. The flowers are large, with broad sepals and petals, the colour being almost a pure white, a rosy tint suffusing these parts of the flower, whilst the lip is of a rose shade with a crimson base. It is without doubt the finest hybrid *Calanthe* yet shown. From Messrs. J. Veitch and Sons.

CYNOCHE PENTADACTYLON (the male variety).—This species is remarkably beautiful, the flowers freely produced upon long arching spikes about 15 inches or so in length; the strongest bulb bore five of these; the ground colour of the flowers is nearly a pure white with dark chocolate markings in a transverse manner; the lip and column are not particularly noteworthy save in their singular construction. This genus is evidently closely allied to the *Catasetums*. It was shown by Mr. W. W. Mann, Ravenswood, Bexley.

CYPRIPEDIUM PENELOPE (*C. caudatum* Linden × *C. calurum*), the flowers of which more nearly resemble those of the latter parent, but are of a richer colour, the petals, however, being much longer and of a wavy outline, the colour varying with age from a deep rose tint to a pale rose, the growth being free. From Messrs. J. Veitch and Sons.

Awards of merit were given to—

CYPRIPEDIUM PHEDRA (*C. Lindleyanum* × *C. Sedeni candidulum*), the flowers of which partake most of those of the last named, but with broader petals, being also bolder as well as richer in colour.

ing. This is a splendid hybrid of free growth. From Messrs. J. Veitch and Sons.

CYPRIPEDIUM GERMINYANUM (*C. hirsutissimum* × *C. villosum*).—A very richly coloured and most distinct hybrid, having the peculiar shade of *C. hirsutissimum* intensified, whilst the form of the flower is more that of *C. villosum*. From Messrs. J. Veitch and Sons.

Botanical certificates were awarded to *Bulbophyllum comosum*, more singular than pretty, from the Royal Botanic Gardens, Glasnevin, and to *Cynorchis grandiflora*, the lip of which is the most taking and prominent, of a rich shade of lilac. From Messrs. W. L. Lewis and Co., Southgate.

Messrs. B. S. Williams and Son had a choice lot of *Cypripediums* and other Orchids. Of the former *C. calurum* bore very fine flowers, so also did *C. Pitcherianum* (Williams' var.), the colour of which is extremely rich and dark. *C. nitens* and *C. Sallieri* were both well represented, whilst *C. Leeanum* and the var. *superbum* were both in the best form, the flowers of the latter extra fine. *C. punctatum violaceum* had well-marked flowers. *C. cardinale* and *C. politum* were also in good form; likewise *C. Harrisianum vivicans*. *Lælia anceps Stella*, one of the best of the pure white forms, was bearing a fine truss of flowers; so also were *Odonoglossum Alexandræ* and *O. elegans* (silver Banksian). Messrs. Veitch and Sons had besides those to which certificates were awarded the following hybrids, viz.: *Phaio-Calanthe Sedeniana albiflora* (*Phaio grandiflorum* × *C. vestita rubra*), a distinct cross, the blooms being of the *Calanthe* and the bulb more of the *Phaio* parentage. *Cypripedium Lathamianum* was also very finely shown, the flowers extra large. *C. Creon* (*C. cœnanthum superbum* × *C. Harrisianum superbum*) had extra rich flowers, the dorsal sepal being intensely dark. *C. Orion* (*C. concolor* × *C. insigne*) has had the habit and style of flower of *C. concolor* imparted to it, the shading being more after *C. insigne*. *C. Aeson* (*C. Druryanum* × *C. insigne*) is also a distinctly marked hybrid. *Phalaenopsis vesta* (*rosea leucaspes* × *amabilis*) is a beautiful variety with rosy coloured flowers. Messrs. H. Low and Co. showed a very pretty group of *Saccolabium bellinum*, each neat little plant of which bore a compact truss of its curious, but attractive flowers, relatively large for the plant, and of a dark shade. Messrs. Sander and Co. had *Sarcopodium Godseffianum*, a singular Orchid, with large flowers of a deep golden colour spotted with a darker shade of the same; *Masdevallia Hincksiana*, a rich yellow; *Pleurothallis ornata* and *Cypripedium nitens* (St. Albans var.), a distinct and very chaste looking hybrid in its colouring, the dorsal sepal large and broadly margined with white.

Floral Committee.

A first-class certificate was awarded to

BEGONIA GLOIRE DE SCEAUX.—An extremely valuable winter-flowering decorative variety, which, if we mistake not, will be largely grown. Its foliage is of a dark coppery or bronzy shade; the plants were of good habit, the more robust having somewhat large leaves, but short footstalks; the flower-trusses are compact, freely and continuously produced, the colour a bright rosy pink, lasting well in a cut state. The plants shown were chiefly from cuttings struck in July last, being in comparatively small pots. From Mr. Leopold de Rothschild, Ascott, Leighton Buzzard.

Awards of merit were given to—

PTERIS SERRULATA GIGANTEA, which is more vigorous in growth even than the Chiswick variety of that species, the fronds being as much as 2 feet in length without the footstalk; it is in all respects quite a gigantic variety of the Ribbon Fern. From Mr. H. B. May, Upper Edmonton.

CHRYSANTHEMUM NEW YEAR'S GIFT.—A reflexed Japanese variety of much promise, with broad, flat florets, the flowers large and full, the colour a pale straw white; as the flowers gain age they will probably be a pure white. From Mr. R. Owen.

CHRYSANTHEMUM PINK MRS. E. D. ADAMS.—This in colour much resembles a rather pale

Vivand Morel with the florets twisted, being distinct in build and of large size. Also from Mr. R. Owen.

Messrs. H. Low and Co. had a bank of *Cyclamens*, the strain a very superior one, embracing the richest of the dark with all other shades down to pure white (silver Flora medal). To Mr. Jennings for the finely grown group of *Begonia Gloire de Sceaux* already alluded to, and which was greatly admired, a silver Banksian medal was awarded. Mr. Leach, Albury Park Gardens, sent a very fresh and bright collection of cut Japanese *Chrysanthemums* in bunches consisting of the best late varieties. With these were shown some well-grown bracts of the old form of *Poinsettia* and sprays of *Chimonanthus fragrans* (silver Banksian medal). Messrs. W. Cutbush and Sons had very finely-grown *Dracæna Lindenii* and *D. Massangeana*, the former much the better in colour, although both are useful and possessing a similar character of growth (bronze Banksian). Messrs. J. Veitch and Sons showed a beautiful boxful of cut trusses of their hybrid *Javan Rhododendrons*, proving how useful these handsome flowers are for the winter season as well as at all other times; the colours varied from pure white to the deepest scarlet with yellows, buffs, pinks, and intermediate shades. From the same source again came their *Begonia Winter Gem*, proving how well it continues in flower, whilst it also resists the fogs of London. With this *Begonia* were shown some very pretty examples of *Primula floribunda* of a beautiful bright yellow colour, which in quantity should prove most useful. Mr. Jennings also brought from Ascott some freely-flowered plants of *Carnation Sir Henry Calcraft*, a dark, but vivid scarlet, the flowers extra large and very full, a grand winter-flowering variety of the Tree section. Mr. H. B. May had well-grown dwarf plants of *Carnation Winter Cheer*, freely flowered; also a basketful of *Pteris Regina*, a new variegated variety only recently alluded to, which is evidently of free growth and likely to be a serviceable decorative plant. Messrs. Shuttleworth and Co., Peckham Rye, showed early forced *Daffodils*, the varieties represented being *obvalaris*, *Ard-Righ*, *Countess of Annesley*, and the common double yellow; with these was included *Iris Bakeriana*, one of the prettiest of the early dwarf section. Messrs. H. Cannell and Sons staged a dozen very finely grown *Primulas* of their choice strains, deep crimson, pink, and blush colours, the flowers beautifully fringed. Mr. R. Owen had cut blooms of his Imperial strain of *Primulas*, both singles and semi-doubles, showing a great diversity of colour, whilst the quality of the strain was excellent. The same exhibitor also had two other *Chrysanthemums*, *Mrs. L. C. Madeira*, an American incurved variety, bright golden yellow in colour, and *Mrs. Maria Bourne*, a deep rosy lilac.

Fruit Committee.

There were some interesting exhibits before this committee, notably a large collection of Apples from Messrs. Bunyard, a smaller one from Messrs. Cheal, and seedling Apples from various sources.

An award of merit was given to—

APPLE BLUE PEARMAIN.—A large round fruit, streaked dark crimson on the sunny side, with firm flesh of good flavour and very handsome in shape. It is a heavy cropper. From the Society's gardens, Chiswick.

Messrs. G. Bunyard and Co., Maidstone, staged 150 distinct dishes of Apples and a few Pears of splendid quality. Amongst those deserving special notice were *Schoolmaster*, *Hollandbury*, *Winter Queen*, *Wadhurst Pippin*, *Cornish Aromatic*, *Gospatric*, *Red Hawthornden*, *Hoary Morning*, *Belle Pontoise*, *Old English Codlin*, *Bi-marck*, *Gascoigne's Scarlet*, *The Queen* (very fine), *Stone's Pippin*, *Bramley's Lane's Prince Albert* (grandly coloured), *White Gravenstein*, *Gloria Mundi* and *Calville Rouge* (silver-gilt Knightian medal). Messrs. Cheal showed an interesting collection, not so numerous, but of varieties less known, the best being *Gospatric*, a medium-sized kitchen fruit of excellent quality; *Landsberger Reinette*, a handsome dessert variety of good quality; *Histon*

Favourite; Newton Wonder, a large new cooking fruit, a late keeper, somewhat like Wellington; Forfar Pippin, Ottershaw Pippin, Beauty of Barnack and others (bronze Knightian medal). A dish of Annie Elizabeth (very good) was sent by Mr. Turton, Reading. Stamford Pippin and Winter Peach were sent by Mr. Maher, Yattendon. Seedling Apples of no special merit came from Mr. Butler, Nacton. Eight new seedling Apples were sent from Jersey by Mr. H. Becker, but though a couple were considered of fair quality, they were not superior to existing varieties. Mr. A. Dean staged a dish of Jaffa Oranges, which have been freely imported this winter. Those sent were of excellent quality. Mr. H. Balderson, Corner Hall, Hemel Hempstead, sent a few dishes of Asparagus which had been forced by tan, the sender explaining it was done at little cost, regular supplies also being secured in this way. A cultural commendation was worthily awarded.

History repeats itself, and I much regret that the report of the R.H.S., which has just been issued, is an instance in point. It may be within the recollection of some that in your issue of January 19, 1889 (p. 44), I wrote the following amongst other remarks:—

In regard to this question of expense, an important decision was arrived at by the Fellows this year which may be of serious import in the future. It was decided to admit Fellows to most of the privileges on payment of one guinea, and this reduction, although it has so far brought an accession of new members, will also be the cause of future loss, as many of the existing Fellows have illiberally taken advantage of the new bye-laws to reduce their subscriptions. Now, bearing in mind that it is proposed again to incur the expense of issuing the journal, and that other proposals, all of which mean expense, are in view, it may be found that this payment of one guinea will barely cover the expense per head of all these schemes and additional advantages, so that there will in all probability be no surplus from guinea Fellows to meet other outgoings, which are considerable, and the consequent result must be a gradual return to the financial position of 1887. What will have to be done then? Chiswick will have to be dropped, as it is the "privilege" of the Society which gives the least satisfaction to the body of Fellows for the heavy expenses associated with it.

The R.H.S. report for this year has the following appeal, to which attention is specially called:—

The secretary wishes this year to make a special appeal to all Fellows to assist him in promoting the welfare of the society by doing all in their power to introduce new Fellows. The lowering of the possible rate of subscription to £1 1s. has brought in a large number of new Fellows, but it has caused such an increase in the clerical work of the office, and in the general working expenses, that, combined with the cost of the journal, it leaves the smallest possible margin to devote to the society's exhibitions and experimental work at Chiswick. So much is this the case, that, unless new £2 2s. and £4 4s. Fellows can be obtained, this latter, but most important part of the society's work will soon be in imminent danger of ceasing.

For the remarks I made in 1889 I was very naturally brought to book by "W.C." and others interested in the R.H.S., and I replied to my critics in your issue of February 9 following. Every word I wrote in my article of January 19, 1889, is as true now as it was then, and the present appeal of the R.H.S. is the most absolute confirmation of my then expressed views.

In your issue of January 5 in the same year an article signed "F.R.H.S." appeared, in which attention was called to the requirements of the society in regard to the *personnel* of the council. "F.R.H.S." stated that the R.H.S. council required more active business men on that body, men, for instance, in touch with the City of London, which most naturally should be the main source of supply, and in fact the life blood of a society whose headquarters are situated, as those of the R.H.S. are, in the west end of the metropolis. I contend that the society's council now requires the same change as it did then. As the £1 1s. Fellows are shown to be practically of little value, the R.H.S. wants influential men primarily on its council, and secondarily on committees who will bring many new £2 2s. and

£4 4s. Fellows. Where can you get such men but in the City? and who can get City men to take an interest in the society's welfare, give prizes, and in other ways substantially help, but their old friends and associates who meet them daily in the intercourse of business. In this year's report the council state that the society possesses a roll of Fellows numbering 3000. To a business man in the wealthiest city in the world it seems astounding that with such a roll of Fellows there should only be two city firms represented on the society's management, and that the greatest corporation of all in the City of London is unrepresented *even on committees*, although a large number of its members are Fellows on the society's roll.

What is the obvious reasoning and deduction? That as the council treat the business men of the City with neglect, the City will naturally treat our society with contempt in the day of need. Can anyone wonder that with the most likely source for members in London foolishly treated with a neglect that in any business would be absolutely impossible, the society is now (after gallant efforts on the part of some few of those responsible for its management and progress) under the necessity of appealing to the Fellows for help?

Finally, I should like to ask the council is their motto "*Vestigia nulla retrorsum?*" Can they not before it is too late alter the arrangements in regard to £1 1s. Fellows, and accord them fewer expensive privileges? The council have long since abandoned the heresy of economy being the primary consideration on all matters connected with their finance, as they but too soon received a sharp lesson on that score shortly after my official connection with them ceased. Surely now they must see the false step made in 1888 in admitting £1 1s. Fellows to all privileges, and they should so rearrange matters that such Fellows in future shall return some profit and not be a loss to the society.

C. J. GRAHAME.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

At the special meeting convened for 2.45 on Jan. 17, the only business to transact was the confirmation of the present title of the institution for purposes of registration, which was carried by the unanimous vote of the meeting. At 3 o'clock the annual meeting was held, when Mr. H. J. Veitch took the chair. The secretary (Mr. G. J. Ingram) read the 54th annual report, which was in all respects of a most satisfactory character. An explanation was given with regard to the postponement of the annual dinner from June to November through circumstances which have been already given in *THE GARDEN*. The late dinner, presided over by Lord Brassey, was an unqualified success. Besides the liberal donations of his lordship and other friends, one noteworthy feature was the increased number of annual subscribers, which is to all most encouraging. The report stated that twelve pensioners had died during the year; three of these had left widows, who were qualified by the rules to succeed to the pensions of their late husbands, *i.e.*, to the amount granted to female pensioners. Two applicants also having qualified for pensions without election, as per rules, were recommended by the committee to be placed on the list without the expense or trouble of an election. One of these should be especially noted, being that of a subscriber of £1 1s. per annum for forty-six years; the other also being a worthy applicant, that of a widow, whose husband had subscribed for thirty years. More deserving cases than these could hardly be cited. It was proposed, through the death of two pensioners just recently, that the next two highest on the poll after the election of the ten, the number previously decided upon, be placed on the pension list. Thus twelve pensioners succeed the same number deceased. The following members of the committee, who retire by rotation, were unanimously re-elected for another period of four years, *viz.*: Messrs. J. Lee, G. Munro, W. J. Nutting, T. A. Dickson, and H. Turner. Mr. Owen Thomas succeeds Mr. Charles

Pilcher on the committee, and Messrs. Arthur Veitch and Thomas Glen succeed Messrs. John Fraser and A. F. Barron, who had expressed their desire to re-sign. Messrs. Thomas Manning, Thomas Swift, and J. Willard were appointed auditors for the ensuing year; the retiring gentlemen, *viz.*, Messrs. Lee, Webber, and Willard who had previously acted in that capacity, were thanked for their services. In the event of arbitrators being called upon to act, the names of five gentlemen (non-members) were proposed and duly elected. The treasurer (Mr. H. J. Veitch) was unanimously re-elected to that office, Dr. Masters paying him a high tribute for past services. Mr. G. J. Ingram, the secretary, was also re-elected by the unanimous vote of the meeting.

The financial condition of the institution is most gratifying; the annual subscriptions amount to £1397 13s. 6d., the donations to £1025 16s. 9d., the special feature, the handsome gift of Mr. and Mrs. H. J. Veitch of £500, being additional to that sum. The collecting cards realised £219 10s. 8d.; the advertisements in annual report £46 17s. 6d.; the dividends on stock £778 0s. 3d. On the expenditure side the chief item is the pension list, £2634 6s. 8d. The working expenses, including secretary's salary, rent of offices, printing, expenses of dinner, and sundry items amount to £699 7s. 4d.; this includes additional expenses incurred through the postponement of the dinner.

The scrutineers appointed to take the poll were Messrs. H. Williams, Arthur Veitch, George Munro, Jas. Webber, H. Cutbush, and B. Wynne. These gentlemen declared the following duly elected as pensioners, the poll, it will be noted, being an unusually heavy one for this institution: Henry Pridden (totally blind), 2975 votes; George Macintosh (subscriber for seven years), 2932 votes; Margaret Kefford (husband subscriber for four years), 2837 votes; James Munro (third application), 2375 votes; George Woodgate (second do.), 2183 votes; James Ricks (collected £10 10s. in 1887), 2160 votes; H. Woolford (third application), 2147 votes; Samuel Tisdale (subscriber for seven years), 2137 votes; Mary Gray (an aged widow), 2012 votes; W. Coleman (third application), 1992 votes; Agnes Merritt (husband subscribed for ten years), 1931 votes; T. H. Bowler (subscribed for eight years), 1860 votes. The next candidate to the foregoing, but who was not successful in securing election, received as many as 1599 votes, which number would in several bygone elections have easily rendered him a pensioner. The total number of votes polled was 42,337. This conclusively proves that it is quite time that all gardeners in middle life should become subscribers. None of us know what misfortune may be in store for us; the sooner, therefore, that all do what they can to ensure assistance when incapacitated for further work the better will it then be for them. The annual friendly dinner was presided over by Mr. H. Seymour Foster, M.P., who in an able speech advocated the benefits bestowed by the institution upon aged and infirm gardeners and their widows. Both the meeting and the dinner were well attended, a keen interest in the welfare of the charity being evinced by the members and their supporters who were present.

Veitch Memorial prizes.—At a meeting of the Veitch Memorial Fund held on Tuesday last, the 17th, at the Drill Hall, James Street, Victoria Street, S.W., Dr. Robert Hogg in the chair, it was decided that the medals and prizes placed last year at the disposal of the Royal Horticultural Society and the Manchester Botanic Gardens, but not competed for, should be again offered this year, *viz.*, at the Temple show, to be held May 25 and 26, a medal and prize of £5 for the best six hard-wooded greenhouse plants in bloom, and at the special exhibition of Orchids, to be held in the Manchester Botanic Gardens, May 19, a medal and prize of £5 for the best hybrid Orchid in bloom already in commerce, and a medal and prize of £5 for the best hybrid Orchid in bloom not in commerce. It was also decided to place a medal and prize of £5 at the disposal of the Royal Horticultural

tural Society to be competed for at the great fruit show to be held in the Agricultural Hall, Islington, on August 29 and three following days; also a medal and prize of £5 to be competed for at the Ghent Quinquennial International Exhibition, to be held in April, for the best hybrid plant in the exhibition, and a medal and prize of £5 to be competed for at the annual exhibition of the Clay Cross Horticultural Society in August.

RAILWAY RATES ON GARDEN PRODUCE.

I HAVE watched carefully the correspondence regarding the increased rates affecting various trades, but there is one that suffers more than any other, and this when trade is exceptionally bad and prices scarcely sufficient to pay the grower. I will give two instances of this. We have a great many customers from seaside and provincial towns who attend our market, and have found it answered their purpose to buy home-grown as well as foreign fruits here instead of depending only on local supplies. One firm has worked up a large trade, and had a rate on most goods of 11s. 8d. per ton. Now the carriage on the same goods is raised as follows:—

Onions	...	...	15s. 11d.
Oranges, Lemons, Nuts	...	...	19s. 3d.
Apples	...	...	33s. 9d.
Tomatoes	...	...	28s. 11d.

I wish particularly in this case to draw attention to the unfairness of raising the cost of carriage of home-grown produce represented by the two latter items as compared with the foreign. This is a gross injustice, especially since, as is often the case, these goods come the same distance to the market. The increase on Tomatoes will mean ruin to a growing business. The other instance relates to Brighton, where the rate for most goods was 11s. 3d. a ton, and is now 20s. 10d. Under the new rate a box of Oranges costs 2s. 6d., while it used to be taken by carrier for 1s. before the railway existed. These facts are driving our growers to combine in starting lines of carriers by road, as they can get plenty of goods to load back with, grocers and other tradesmen being all willing to support them. Our trade has been a growing one and profitable to the railways; but where we have to depend on them for transit, trade will be stopped, and in the end the railways will themselves suffer in consequence.—G. MONRO, *Covent Garden*.

—A salesman in Covent Garden writes, under date December 12: "The London and South-Western Railway Company delivered this morning, consigned from Southampton to Covent Garden, seven baskets of Mushrooms, weighing 74 lb. gross, 60½ lb. net, and requested payment of 7s., or at the rate of £9 10s. per ton. If these are the rates allowed by Act of Parliament, it will not be long before the grower will cease to trouble both the railway company and commission salesman."

—Mr. Allen Jeeves, of Seddington, forwards the following, received from one of his customers: "It may interest you to know that for the twenty casks of vegetables just delivered we paid £4 15s. carriage, whereas on the previous consignment of the same quantity we paid £2 1s. There is evidently good ground for demanding a reduction on the new rate, and it greatly concerns you as a grower, for the charges from Rotterdam to London are only 1s. 9d. per cask, and we can get Dutch goods lightered to the immediate neighbourhood of our works for 2s. per ton, or a total charge per ton of 9s."

—The year 1893 has opened with a poor prospect for market growers who cannot sell their goods within carting distance of home, for the new rates by rail which are arousing such an agitation amongst traders generally fall with exceptional severity on market cultivators of fruits, flowers, or vegetables; in fact, if they are maintained they will undoubtedly greatly check, if not entirely destroy, some branches of a growing industry, as the margin of profit, already all too small, will be more than swallowed up by the new tariff. I have always urged growers to accept even a reduced price at

home in preference to a higher one where it entailed railway charges and salesmen's fees, and if this was sound advice under the old rate, how much more necessary is it now that charges have gone up at a bound from 1 to 200 per cent., and for empties considerably more than that. Happily where I am there is a ready local sale for almost all kinds of goods, but this is no comfort to the immense number of growers who rely solely on the London markets and who now find that the whole of the returns for green vegetables will be swallowed up for carriage.—J. GROOM, *Gosport*.

THE WINTER GARDEN.

THE yellow flowers of *Jasminum nudiflorum* were most beautiful before the frost came. I am a great admirer of this hardy shrub, which flowers so readily and with such profusion in the very middle of winter, and I am glad to see that it is such a favourite with our cottagers. It grows rapidly and strikes readily from cuttings; in fact, a small shoot stuck roughly into the ground is almost sure to grow. It will grow anywhere, but, curiously enough, it seems to prefer a north wall. Unless we have an unusually cold December, it will cover a large piece of wall with its innumerable sprays of yellow flowers during that month. Dry cold weather without hard frost suits it admirably, but rains will spoil the flowers in a short time, and they become for a while dreary-looking and very ugly. A week of dry weather, however, is sufficient to restore the plant to its original beauty. The spoiled flowers drop off and fresh buds develop. Meanwhile, the sprays which were gathered before the rain or frost came will go on opening their buds continuously for a long time. Spikes of this pretty Jessamine, gathered in the week before Christmas, were on the 16th of January as beautiful as on the day they were cut.

This time last year I could gather plenty of flowers from a plant of *Chimonanthus fragrans*, which is growing against the south wall of my house. This year 20° of frost and a long continuance of extreme cold, with snow, have prevented the buds opening. But even now I could gather a few flowers, which are struggling against the difficulties of existence in January. Unfortunately, this, like other scented flowers—such as Violets—loses its fragrance in the cold air. Sometimes the warmth of the living-room will bring the scent back after the flowers are gathered, but even then the fragrance will not be so powerful as from those which have opened in mild weather. Let a complete change come from the frost and snow, which January so often brings with it, and a short spell of mild, damp weather, such as often comes after hard frost, will enable the sap to circulate once more and restore the proper scent to winter flowers.

These things which venture to brave our cold, dark, dreary winters and put forth their flowers, curious, fragrant, and beautiful, when snow and frost are the prevailing characteristics of the weather, are most truly interesting. Several Hellebores must be included in the number. The buds droop and fall on the ground while the cold is at its height, but they are ready to spring up again as sturdy as ever as soon as the thaw comes. This year, for some reason which I cannot explain, the period of flowering in these plants seems altered. *Maximus* has not yet opened its buds, though I have known it in flower in November, and a red *Lenten Rose* is ready to open its pretty flowers with the first mild weather. They have shown their colour several weeks. *Trifolius* is still only in bud, but its ordinary time for opening is about Christmas or very early in January.

Who can explain the extraordinary recuperative vitality which exists in our very hardiest plants, such as Primroses and Ivy-leaved Cyclamens? While the earth is still as hard as a stone these plants revive with the thaw on the surface, the green leaves stiffen and look fresh and happy, and even the flowers which were opening before the frost came will look up again on their sturdy footstalks and open their pale scentless blossoms.

Now, when we recollect how extremely delicate are the tips of the little rootlets or spongioses by which, and by which alone, nourishment can be drawn out of the earth for the benefit of the plant, it seems wonderful that the leaves should be able to show this renewed vitality while the spongioses are held firmly in the cold, hard grip of frozen earth. It must be because the sap stored up in the stalks and leaves is sufficient for the revival of their energies without sustenance from the root. We should not be surprised at this in a tree or shrub, because there is room for the storage of sap, but a little plant like an Anemone or a Violet seems to have hardly any room in its tender leaves and stems for necessary food.

The bulbs of Crocuses, Snowdrops, Squills, &c., planted in tubs must have had much to endure lately, for the frost was hard enough to make the whole of the earth in which they are growing one hard, solid mass; yet with a slightly higher temperature, their little sharp leaves are peering up strong and sturdy, and should the thaw develop into a continued time of mild weather, the bright and pleasant flowers of spring would soon appear from these hardy bulbs. So it is not altogether impossible even in January to get some interest in the outdoor garden, when the snow, departing for a while, brings Nature back again to her accustomed appearance. It is hard to get any real enjoyment out of the ordinary garden in January; it is impossible not to get more than usual delight out of the indoor garden, just because things without look so sad and dreary.

A GLOUCESTERSHIRE PARSON.

D. ath of Mr. J. Sheppard.—We regret to say that just as we are going to press we have been informed of the death of Mr. J. Sheppard, Woolverstone Gardens, Ipswich. Mr. Sheppard was an excellent gardener and fruit grower, and could express himself well in writing on such matters as he often did in the pages of this journal.

Weather in West Herts.—The present frost has now lasted exactly four weeks. During this period there has not occurred a single day which could be regarded as in any way unseasonably mild, and only three moderately mild nights. At 2 feet deep the ground is now as cold as at any previous time this winter. It is surprising how very slight are the changes in temperature from day to day at this depth during a prolonged frost. In fact, during the past fortnight the extreme range has amounted to less than a quarter of a degree, and yet the ground has been at times quite bare of snow and at others covered to the depth of over 3 inches. Rain fell on the 16th and 17th, but, owing to the hard state of the surface soil, cannot get away, so that my lawns consist now of a series of puddles, whilst most of the roads in the neighbourhood are one sheet of ice.—E. M., *Berkhamsted*.

The Gardeners' Orphan Fund.—The Princess of Wales has consented to become a patroness of this very deserving institution, which was established in 1837 by the gardeners of Great Britain and Ireland, in commemoration of the Queen's Jubilee, and has forwarded a cheque for the sum of ten guineas.

Cultivation of Lavender.—I am anxious to obtain some information on the growing of Lavender and Peppermint for purposes of trade. I shall be much obliged to any of your readers if they would let me know the titles of any handbooks treating of these subjects, or refer me to any larger work containing a fairly complete treatment of these plants.—C. W. PAYNE.

Names of plants.—J. Cooper.—*Lælia anceps*, a fine dark form.—G. Casper.—1, *Odontoglossum constrictum*; 2, *O. Alexandræ*; 3, *O. Pescatorei*.—O. B.—1, *Cattleya Percivaliana*; 2, *C. Triana*; 3, *C. Warocqueana*.—C. W.—1, *Cymbidium giganteum*; 2, *Lælia anceps Hilliana*.—G. Dutton.—1, *Dendrobium superbiens*; 2, *Cypripedium Lawrenceanum*; 3, *Dendrobium Linawianum*.—A. Hossack.—1, *Cypripedium insigne Wallacii*; 2, *Lycaste Skinneri*, poor variety.—G. Hall.—1, *Cypripedium Seegerianum*; 2, *Masdevallia cucullata*.

WOODS AND FORESTS.

PRICES OF HOME-GROWN TIMBER
IN KENT.

A REVIEW of the home timber trade around London for the past year reveals few, if any, changes. For good timber of certain kinds there is a marked, steady, but hardly perceptible increase in the prices; whereas for small wood, principally the outcome of coppicing, there has for some years back been a steady decline in the quantities bought. In numbers of woods in Southern England the coppicing has either had to be sold at a very low figure or allowed to remain in the woodland, and such, too, has gradually been going on for several years back. Very good coppice wood can now be procured, and in plenty, at prices ranging from £4 to £6 per acre, but the latter figure is far above the average. When we look back, say thirty years, and reflect that at that date lots of purchasers at three times the present prices could be procured, we are naturally led to inquire as to why such a change has come about. There are many causes which when put together make a grand total that tells rather a sad tale for the cultivators of woods and plantations. With coppice wood, the decline of Hop growing, creosoting the Hop poles, whereby their life in the ground is greatly increased, and foreign importations, have all had a hand in the work of destruction. Foreign importation of wood in the shape of timber or batten ends, that are almost valueless for being converted into planks or scantlings for chopping into firewood, has almost ousted the old familiar faggot from the market; and I was told only a few days ago by a large dealer in these home-grown faggots, and who has fulfilled many large Government orders, that for 100 he now disposed of, a few years ago he could have sold 300. All the blame attached to so sudden a change, my friend maintained stoutly, was due to the using of the small bundles of wood now retailed by almost every grocer at one-halfpenny and 1d. the bundle instead of the well-known Kentish "pimps." Only yesterday I chanced to stray into a coppice plantation where hundreds of faggots were lying about almost rotting, and inquiring of the woodman why he did not dispose of them, was met by the reply, "Cannot sell them even at 5s. a 100 less than I used to do in times gone by." Then, I asked, what part of the coppice wood can you sell? Only Pea boughs and Bean stakes, was the reply. Might I ask how much per acre you are paying for this coppice wood? Four pounds, came the reply; and I left the old woodman, who twenty-five years ago paid £12 per acre for wood not one whit better, and who, in a rather moody turn of mind, said he could then live far more extravagantly than he could now afford to do.

Of course, for certain classes of small wood that is locally known as "London ware," and including broom-handles, hurdle stakes, and crate poles, there is still a demand, and that is, comparatively speaking, anything but brisk; but the good old days of English coppicing, as my friend the old woodman remarked, had departed. But about Oak bark we cannot speak one bit more favourably, for the £20 per ton of our grandfathers has waned less and less, until fortunate is the forester considered who in the year 1892 received a greater price than about one-fourth of the above-mentioned. Even charcoal has deteriorated in value, and what the old-fashioned kiln-burner had no trouble in get-

ting rid of at 2s. 6d. per bushel can now be got at about 1s. per bushel.

But enough of the cloudy side of woodland output, and let us look to the sunnier page; but record even the very best prices that have of late years been procured, and the picture is far from encouraging. Good Oak trees will only fetch from 2s. to 2s. 6d. per foot, the latter price being hard to get; and, indeed, lots of very nice timber can be bought at 1s. 8d. per foot, and somewhat inferior, but by no means bad, at 1s. 6d. per foot. The Elm market, like the character of that wood for burning, is "unco dour" at present, and has been so for a long time back. For even exceptionally large and clean trunks it is no easy matter to get a higher price than 8d. per foot, but plenty changes hands at 6d. and 7d. per foot. Ash still holds good for local and other demand at quotations varying from 1s. 6d. to 2s. per foot, but the former price or 1s. 8d. is about the average. Beech only fetches about firewood price—7d. per foot; and plenty of nice timber can be purchased at that rate. It makes excellent firewood. Birch and Alder may be got rid of at from 8d. to 10d. per foot, but local demand in certain districts causes the prices to vary very much.

Lime wood would seem to be in some demand, at least judging by advertisements in the *Timber Trades Journal*. About 8d. per foot is thought a fairly good price, but often for first-class logs a great deal more is obtained. Sycamore still retains its hold in the market at prices ranging from 1s. 8d. to nearly 3s. per foot.

Amongst the coniferous trees Larch is still at the head of the list, good butts bringing from 1s. 3d. to 1s. 6d. per foot. Scotch Fir can hardly be got rid of at any price, while Spruce, Austrian and Corsican Pines are all alike hardly worth cultivating for economic value. Silver Fir is a good deal better, and will, when the quality of its timber is better known, be largely used for building and other purposes. With most kinds of timber—three at least, Oak, Larch, and Ash—much depend on the local demand as to what prices they will realise. For agricultural implement repairs, there is always amongst country joiners a fair demand for Ash and Oak; while in the vicinity of coal and iron pits few kinds of wood, particularly such as are suitable for props, remain long as a drug in the market. Where small boats are made and larger vessels repaired, one may not have much trouble in getting rid of the superfluous wood, but then that is usually only in maritime districts. Faggots (large) bring about 14s. per 100, and small ("pimps") 3s. 3d. per 100. Firewood brings 6s. per cartload delivered, but it is usually disposed of in Kent by the cord.

A. D. W.

The White Pine.—Mr. D. Nichol writes to the *Canadian Horticulturist* that the White Pine grows more rapidly on poor land in Canada than any other coniferous tree. He instances mixed plantations where White Pine trees have grown to a height of 50 feet in twenty-two years, with every tree as straight as a mast. This growth has been attained on poor land without any cultivation beyond thinning out the trees as they grew large and clearing away decayed under branches. No other kind of forest tree does so well when grown so closely.

Rabbits and trees in hard weather.—Now is the time to see after rabbits in young plantations, or among Hollies, to beat them out and see wiring is sufficient. It is not the season to wire properly, as that is work for the warm weather, but wire may be stretched down rapidly, and in the simplest way, to keep off the enemy during the

hard weather season. We know some very thriving young plantations of Larch in Kent which had been wired for some years, and showed a very clean and good growth. In the past autumn the wire was taken away, and now, with scarcely an exception, every young tree is barked for a foot above the ground. This shows, if any proof were needed, the sort of pests that men and trees have to deal with in wooded districts where rabbits abound. Where there are choice Hollies in gardens they should be carefully protected, as they may be stripped of bark all round, and to a Holly that is death. Carnations in the open air will go like a morning mist if the rabbits find them out in hard weather. When in open young plantations there are signs of rabbits at the stems, and there is any difficulty about wiring even in a temporary way, some relief may be obtained by killing all one can of the rabbits in and near the plantation and ferreting hedgerows near. The same tree enemies go a long way at night, still it is a clear gain not to have them in swarms near the young trees. On most estates there are old woods where they may do less harm. The remedy of smearing is of no use save for a few trees in an exposed pleasure ground. But no pleasure or kind of garden that one thinks anything of should ever be exposed to the attacks of hares or rabbits; they may and should be happy retreats for winged creatures. The cost and ugliness of smearing make it of very slight use. For example, extensive plantations are often made of small trees less than 1 foot high. The most experienced planters both in France and England follow this plan. Even if anyone had time and means to smear the stems of these little trees it would not help them, as the enemy would take the top and leave the smeared stump to the smearer. The whole idea is ridiculous from the standpoint of any extensive or serious planting, as 20,000 will not go far in planting even a small field. In small places where there is nothing like a wood in any true sense, a simple smear made of fresh cow manure and clay will save exposed specimens for a time. All smears are essentially mere makeshifts for use in garden or orchard. For the planter on a large scale the only friends to his young trees are the wiring out or death of his enemies.—*Field*.

The White Poplar.—The beauty of Poplars in autumn is far more noteworthy when numbers of trees are taken together than in any single specimen. Sometimes the Mountain Ash fades to a splendid red colour and is very beautiful in itself, but it is very uncertain, and one specimen will do so while another will not. The White Poplar, however, is the most beautiful common tree in this respect when half of its leaves assume a fine yellow colour, while the rest show all manner of weaker tones of yellow till you come to the youngest, which have their own inimitable pearly sheen in the most bewitching contrast with the yellow in the middle of the tree.

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No. 1106. SATURDAY, January 28, 1893. Vol. XLIII.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—Shakespeare.

ORCHARD AND FRUIT GARDEN.

YOUNG WOOD ON OLD TREES.

ANY doubt about the superiority of young wood over that which has long been producing fruit will quickly be dispelled if the two classes are closely scrutinised at different times during two or three seasons. In some instances proof positive would be afforded by contrasting strong young branches when in full bearing with the rest of the tree, the former invariably producing much the greatest profusion of fruit of the finest quality. If they fail to do so, it is the fault of the cultivator, a too free use of the knife most frequently being the cause of young branches producing much superfluous wood growth at the expense of productiveness. These remarks do not apply exclusively to Apple and Pear trees, but are equally applicable to Apricots, Plums and Cherries, and to wall trees as well as those in the open. Already, probably, thousands of restricted standards, pyramids and bushes have been closely denuded of all their young growth, nothing but the closely-trimmed stubby old branches being left. These latter may be very well furnished with fruit spurs, though more often than not there is a scarcity of these and excess of wood growth. In any case this hard pruning is generally followed by the production of thickets of strong young shoots, completely smothering what little fruit is formed. Instead, therefore, of annually removing the whole of the young wood at the winter pruning some of the best placed should be left thinly all over the trees and to its full length. If shortened in any way, only the tips even being cut off, this will be followed by a faulty break, those buds near the ends being all that start. Cut harder, this will be the precursor of still stronger wood growth in profusion; whereas, if left to its full length, fruit buds will most probably form at every joint.

During the winter of 1877-78 I left a number of extra strong Apple growths about the thickness of stout walking-sticks and not less than 3 feet in length, and during the summer of 1879 they flowered most abundantly, the fruit eventually forming on them like ropes of Onions. Prior to that some of the trees had been complete failures, owing to the excessive amount of pruning that had been annually carried out. Since that time I have left young growths thinly over scores of garden trees, and in no one instance did these fail to improve the health and productiveness of the trees. These young growths being left to their full length do not continue to extend in the same strong manner, and if need be can be kept pruned back to the first saved length. Some young branches on large old trees that commenced bearing seven years ago have not failed to produce freely since, and they are again now abundantly furnished with fruit-buds. In the case of several Pear trees similarly treated the branches have lengthened considerably, and when fruiting arch over, so as to nearly touch the ground. Reserving young shoots on large trees previously doing well is also advisable, as it greatly increases the productive area without impairing the free-bearing

character of the older branches. The latter might in some cases be freely thinned out with advantage. They may not appear too thick now, but the case is very different when they are in full leaf. When less thinning is carried out freely on old and stunted trees, it is sometimes followed by the production of a number of strong shoots, and will certainly be so if the heads are freely shortened back with the aid of the saw. These resulting shoots should be very freely thinned out during the following winter, and those reserved being left to their full length will soon arrive at a productive state. I need hardly add that young lateral growths ought not to be reserved on espalier trained and cordon trees, as these would at once spoil their character. In many instances they are quite worthless owing to over-luxuriance, or else because they are too densely furnished with side shoots to be productive of good fruit. It may seem a rather drastic remedy to saw off the side branches of horizontally-trained trees near to the main stems and to cut cordons down to near where they were grafted, but this treatment would be followed by the production of numerous young shoots, and if the strongest and best placed of these are reserved and laid in, the rest being spurred hard back, the walls or fences will not be long before they are clothed with fruiting wood of a greatly improved character. Should the varieties be of an inferior description, then ought such trees to be headed back now to within 6 inches of the main branches or stock, as the case may be, preparatory to re-grafting with better sorts next spring. Not a few wall trees, notably Pears, fail to cover their allotted space owing to the ends of the branches becoming stunted. In this case sawing off the ends may lead to the production of the required vigorous young shoots, though a surer way of attaining this end is to head back lightly and to re-graft with a healthy young growth, the best placed break from the latter being laid in. This may be the means of extending the main branches several feet further either upwards or horizontally.

Young growth is very frequently much needed on Apricot and Plum trees, yet it is recklessly cut away in far too many instances. Strong shoots are often pushed out from near the bottoms of the trees, and if a few of these were duly laid in either between or over the old and, it may be, almost naked branches, they might soon take the place of the latter, the productiveness of the trees being thereby increased tenfold. These trees also respond well to the pruning saw. Thus if old branches clothed with long stunted spurs are sawn out, plenty of strong young growths suitable for laying in will be formed next season. Every opportunity should be taken of laying in young wood all over old Apricot and Plum trees, old spurs being sawn off wherever they are in the way, as it is very certain the latter never produce such fine fruit nor fruit of any kind so surely as do the younger branches. Some varieties of Plums grown as standards and never pruned soon develop dense heads of growth, which are of little real service unless freely thinned out so as to bring a few young shoots into play. Young growths are being constantly laid in on Peaches, Nectarines, and Morello Cherries, and that is one reason why they vary so little in either productiveness or quality of their fruit. This may appear a strong assertion, but if the two former do vary much, it is more the fault of the season than the trees, while Morellos never fail.

I. M. H.

The Vine weevil (*W. M. S.*).—I am sorry to say that you are quite right, and that your

Vines are attacked by the grubs of the black Vine weevil (*Otiorrhynchus sulcatus*). This is a most tiresome pest. As regards destroying the grubs, no insecticides are of any use; those which would kill the grubs would be equally deadly to the plants. The Vines should be repotted and a careful search made for the grubs; they are probably not more than 4 inches or 5 inches from the surface, so that searching down to that depth would be sufficient. The grubs will become chrysalides in the early spring and the beetles will emerge a few weeks afterwards. The weevils only feed at night, hiding under stones, little lumps of earth, or wherever they can shelter themselves from observation. They may be trapped by laying pieces of slate, board, or little balls of hay about the soil in the pots, or in hay tied round the stems, or they may be caught at night by previously laying white sheets under the plants, and then suddenly introducing a bright light, which will cause them to fall; if it does not, shake the Vines well over the sheets, secure the weevils before they can get away (they do not move very quickly), and put them into boiling water.—G. S. S.

FERMENTING MATERIAL FOR OUTSIDE VINE BORDERS.

AT one time fermenting material was more largely used than it now is for covering the outside borders in which early forced Vines were grown. Not that its discontinuance has improved the quality of early Grapes, as with all our boasted advancement in fruit culture, early Grapes are not grown any better, or so good as twenty years ago; in fact, really good Grapes at the earliest shows are far more of a rarity than they used to be. The variety principally relied upon for forcing (at least for early work) is the Black Hamburgh, that will put up with almost any abuse and yet come out passable in the end. There is, however, a mit to its enduring powers, and the production of really good early Grapes of this variety is something to be proud of. Often, however, they are poor in colour, and instead of the bunches being compact, with the berries of a nice black colour, also carrying a good bloom, they are the very opposite and also marred by shanking. This latter is an evil much on the increase in early forced Vines, especially in the variety above noted. There is nothing in the cultivation of Vines more annoying than to see the bunches decrease in size. Generally this is the result of defective root-action. It has become very much the practice to allow the borders to remain uncovered until forcing commences, the belief being that when the borders are covered the Vines do not receive that thorough rest they should have. To a certain extent this is not borne out by facts. To cover the border up so that frost cannot reach the surface may be an evil, but not so protection from wet or snow, which may easily be secured by using shutters or sheets of corrugated zinc. I use both, and also spare lights. Borders covered with fermenting material when forcing commences are just in the condition to derive marked benefit. It is those borders which are covered with a layer of manure early in the season without further sheltering that are in danger of being spoilt by mistaken kindness. The heavy falls of snow recently experienced will have penetrated deeply, and the soil about the roots will be cold and damp; consequently, if fermenting material is now applied, these borders cannot be expected to derive such marked benefit as those which have been covered with a few dry leaves and boards.

Covering Vine borders with fermenting material without using boards is not the best means of treating them. In the first place, a

greater depth of material is needed, and even with this addition it does not retain the heat so long as a much less bulk if this be covered. For covering outside Vine borders I have great faith in the bulk being tree leaves, Oak or Beech for preference, as being of a hard nature they heat the more readily, and also retain the warmth for a lengthened period. I use Beech leaves, and they maintain the heat well. Last year early in January I covered the border of a large Hamburg house with quite three parts leaves to one of litter, putting it on to the depth of 2 feet near the front wall, and the heat was retained well on to the end of April. But the above would not have been the case had 'not the border been further covered with proper Vine-border boards. In the above case the roots worked well, and the Vines ripened off a fine crop of early Grapes, the berries and bunches being of a large size, as they always are on the Vines in this house, although they must be quite fifty years old. I firmly believe that a gentle hotbed is of great assistance for covering the roots of early forced Vines, that is when the border is partially inside and out. With this assistance I think Vines also break more strongly and evenly. The reason no doubt why the system is not practised so much as its merits deserve is the labour attending it. By using the greater part of good leaves with a portion of stable litter, sufficient heat will be maintained quite long enough for the Vines to benefit by it. Y. A. H.

LATE APPLES.

It is not to be by any means supposed that the splendid collection of Apples which Mr. Bunyard exhibited at the Drill Hall on the 17th represented late-keeping Apples solely. When it is understood that there were comprised in the collection scores of varieties that are at their best in October and November, it will readily be understood that the real late keepers formed only a moderate part of the whole. That is not to be regarded as any reflection on the collection; very far from that. Really it was remarkable how varieties that are at their best long before Christmas were presented in such apparent excellent condition. They had been wonderfully well preserved. No doubt it would have been found had there been a general tasting of the whole lot that very many of the least pretentious-looking samples were the freshest, best, or especially best flavoured. Amongst the dishes was Egremont Russet, a delicately flavoured Apple. It is a good cropping kind, keeps well till May, and is perhaps the very best of all the handsome russet section. Brownlee's Russet is another of the too little known and grown late dessert Apples. This is probably even a later keeper than is the preceding; the fruits are of fair size, and in colour brown, green, and red. It is all the same a fine-flavoured variety. With these should be allied that delicious and free-bearing variety Cockle Pippin, one of our very best late table Apples, and having a flavour all its own. Those who taste seedling Apples for quality after the opening of the new year should always have Cockle Pippin at hand as a test fruit for flavour. There were at the meeting several dishes of Cornish Aromatic, a variety that seems to comprise all the best qualities of Margil and the good russets. A very abundant bearing tree at Claremont, it was found, was of this fine old variety, and it certainly is one of the best late dessert Apples we have. It has an equal mixture of the red and the russet, is of good form, medium size, and generally is a heavy cropper. How is it that when select lists of late dessert Apples are published, we hear so little comparatively of these excellent varieties? If to these named we add Sturmer Pippin and Adams' Pearmain, we get half-a-dozen sorts that should be grown in every garden where quality or flavour is esteemed more than colour or appearance. Unfortunately, it hap-

pens that of our additions to Apple lists three-fourths of the new ones are at their best in the early winter instead of in the late winter. A most instructive competition would be a class for, say, half-a-dozen dishes of sorts to be tested for flavour in April. That is, on the whole, late enough for English fruits, as later we can have the pick of the Australian fruits, and it is hardly to be expected that any fruits gathered at home in October can compete either in quality or appearance with antipodean fruits gathered in March. With respect to late cooking or kitchen varieties, Winter Peach, though not large, is a handsome fruit, not unlike samples of Wellington, keeps well quite late, and fruits freely where Wellington will not thrive. Annie Elizabeth also is a handsome late-keeping Apple; it is good if cared for till May. This does well equally on sand in Surrey and on clay in Berks, and is highly spoken of by growers. What a splendid solid late Apple is Bramley's Seedling, a hardy, robust variety that is admirably adapted for orchard culture. It should be found in our markets in great abundance at this time of the year did we but grow it in plenty. Lane's Prince Albert is another Apple that needs now no commendation, and the fine Bismarck, if not too highly coloured and grown on established trees, gives fruits that will keep longer and firmer than do many of the big fruited sorts. Mr. Bunyard had very fine dishes of Waltham Abbey Seedling which is both a heavy cropper and a good keeper; and yet another capital late kitchen Apple is Sandringham, of which there were some capital samples shown. It is thus seen, though only a few out of the many have been mentioned, that we are not without plenty of fine late Apples if sought for and grown. Would also that those who do so often send what are called seedlings for judgment had a better knowledge of the varieties now in cultivation. If they had, they would burn myriads of trees, or else behead them and regraft with really fine varieties, rather than attempt to add to our already too abundant Apple lists. A. D.

COLD STORAGE OF FRUIT.

SOME interesting further experiments with regard to the best modes of preserving fruits over considerable periods of time have been made in New South Wales, which throw considerable light on the successful introduction of various kinds from the colonies to the British and other European markets. It appears that a growing opinion is in existence that, if the exact range of temperature can be obtained, there should be no difficulty in keeping and transporting Apples, Pears, Peaches, Oranges, and other fruit over considerable distances both in time and space. Following previous experiments, and the experience gained from them, a committee formed to conduct these trials fixed the mean temperature as at about 40° F., the two cold chambers being one in the building of a dairy company, which was lent for the purpose, and the other under a public market. The time during which the fruit was thus kept was from May 23 last until July 21 following, or nearly two months. There appears to have been some difficulty in obtaining an even temperature, but at no time was it lower than 35° nor higher than 46°, the average of the whole period being 41.56°. The results were most favourable.

The fruit treated and the system followed were as follows: There were two cases (ordinary wine cases) of Winter Pearmain Apples and two cases of cooking (Beurré Rance) Pears in the cold chamber of the County Milk Company, Woolloomooloo. The Apples were picked, immediately wrapped in paper, and packed in the cases. Corresponding cases were kept in the ordinary air, at the offices of the Department of Agriculture, Sydney, so as to show the difference of Apples kept at 40° temperature. Other fruit consisted of two cases of common Oranges, one case Navel Oranges, and one case of thorny Mandarins. Three of these cases were of the ordinary shipment pattern. In each case half the fruit was wrapped

in tissue paper, and the remainder without packing. The Oranges had been placed in a single layer in an open granary for ten days after being picked, so that they might get dry before being sorted and packed. They formed part of a large consignment sent to London. On opening the fruit at the end of two months, which was the estimated time for it to have reached the London markets had it been sent, the results were that the cases of Apples and Pears kept without cold storage were in very bad condition, 75 per cent. being rotten, and about 50 per cent. of the Oranges equally bad in condition. On opening the cases from the cold rooms, the fruit in each was in splendid condition, only 1 to 2 per cent. of the Oranges, and none of the Pears or Apples, being rotten. The Apples had improved in condition, having coloured up during storage. The fruit was then repacked and returned to the cold rooms, to see how long it could be kept in saleable condition.

These experiments, added to former experience, tend to show that fruit may be kept without deterioration for any reasonable period at a temperature of about 40°, that it pays better to wrap each fruit in tissue paper, and that Apples will mature at a lower temperature than will Pears. There is one point, however, of which we ought to hear more—viz., whether the fruit soon decays or not after being removed from the cold storage. The batch of Oranges from which the sample was selected was sent to London "between decks" of a mail steamer, and not in a cold chamber. The consignment arrived here in poor order, and realised a low price, the thorny Mandarins being a total loss; whereas those in the cool chamber, for the experiment, were in perfect order, though from the same trees. It is found that Oranges must be allowed to remain on the trees to mature thoroughly before being shipped, so as to secure their full flavour in the market.

The importance of carefully selecting fruit, and afterwards of properly packing and conveying it, is exemplified in a case reported by a large shipper of fruit to London from New South Wales. It refers to a shipment of 32,000 cases of Apples, which turned out a lamentable failure. Another instance of a shipment of 1000 cases is given, where it was all prime fruit, but only realised from 5s. to 1s. 9d. per case. These had cost the shipper before landing in London about 7s. 9d. per case, his loss being no less than £300 on the 1000 cases. These facts will give some indication of the value of the cold chamber on board ship.—C., in *Field*.

Peaches for profit.—It is quite refreshing to a market grower to read that there is still something left to make a profit from, as "Y. A. H." (see page 18) says "that Peaches and Nectarines fetch as good prices now as ever they did. He says: 'I have often surprised people by the prices I get for good open-air Peaches. Even last year good fruits of Dymond, Sea Eagle, and Walburton Admirable fetched 10s. to 15s. per dozen.' I must freely admit that I, too, am surprised. In this locality the Peach and Nectarine succeed well, and there is a demand at the sea-coast towns during the late summer months for good fruit, but I have never heard of anything like the price 'Y. A. H.' mentions. Foreign Peaches, beautiful to look at, if not equal in flavour, neatly packed in pretty boxes so as to catch the eye, are marked up here in fruiterers' windows at a quarter of the price mentioned. I fully agree with all 'Y. A. H.' says as to careful packing and to grading the fruit, and I am sure that many of our local market growers would be only too glad to know where 10s. to 15s. per dozen can be obtained for late Peaches. I am well aware it can be exceeded for extra early fruits that have been forced far in advance of the ordinary season of Peaches, especially while the London season is at its height.—J. GROOM, Gosport.

The English Flower Garden.—Design, Views and Plants. Third edition, revised, with many new illustrations. London: J. Murray, and through all booksellers.

THE PHILOSOPHY OF CLIPPING TREES IN AND NEAR THE FLOWER GARDEN.

An unerring perception told the Greeks that the beautiful must also be the true, and recalled them back into the way. As in conduct they insisted on an energy which was rational, so in art and in literature they required of beauty that it, too, should be before all things rational.—PROFESSOR BUTCHER, in "Some Aspects of the Greek Genius."

There are a few wise words above and a few unwise ones at the foot of this page, both of which are worth reading in considering this question.

Now we cut Grass when we want hay, or

sand hills—from British Columbia, through North America and Europe to the Atlas Mountains, and not one of them has yet proved to be so beautiful as our native Yew when it grows unclipped root or branch. But in gardens the quest for the exotic is so active, that few give a fair chance to the Yew as a tree, while in graveyards, where it is so often seen in a very old state, the cutting of the roots hurts the growth, though there are Yews in graveyards that have seen a thousand winters.

I do not clip my Yew trees, because clipping destroys the shape of one of the finest in form of all trees. It is not my own idea only that I urge here, but that of all who have ever thought of the forms of trees, foremost among whom we must place artists who have

ing is a mere "survival" of the day when we had very few trees, and it passed as clever to clip them to fit certain situations after the architect's notion of "garden design." This is not design at all from any landscape or artistic point of view; and though the elements which go to form beautiful landscape, whether home landscape or the often higher landscape beauty of the open country, are often subtle, and though they are infinitely varied, they are none the less real. The fact that men when we had few trees made them into walls to make them serve their ways of "design" is not a good reason why we, rich in the trees of all the hills of the north, should go on mutilating some of their finest forms!



Gardener's cottage at Great Tew, with protecting fence of clipped Yew.

soft turf to play on, but disfiguring a noble tree is not a necessary part of our work either for our profit or pleasure. I clip Yews when I want to make a hedge of them, but then I am clipping a hedge, and not a tree. The Yew in its natural form is the most beautiful evergreen of our western world—finer than the Cedar in its feathery branching, and more beautiful than any Cedar in the colour of its stem. In our own day we see trees of the same great order as the Yew gathered from a thou-

the happiness of always drawing natural forms. Let anyone stand near the Cedar-like Yews by the Pilgrim's Way on the North Downs, and, comparing them with trees cut into fantastic or ridiculous shapes, consider what the difference means to the artist who seeks beauty of tree form!

What right have we to deform things given us so lovely in form? No cramming of Chinese feet into impossible shoes is half so wicked as the wilful and ignorant distortion of the divinely beautiful forms of trees. The cost of this hideous mutilation alone is one reason against it, as one finds in places where miles of trees cut into walls have to be clipped, as at Versailles and Schönbrunn! This shear-

Thus while it may be right to clip a tree to form a dividing-line or hedge, it is never so to clip trees grown for their own sakes, as by clipping such we only get ugly forms—unnatural, too. In November, 1891, in Hyde Park, I saw a man clipping Hollies at the "Row" end of the Serpentine, and asking him why it was done, learnt that it was to "keep them in shape," though, to do him justice, he added that he thought it would be better to let them alone. Men who trim with shears or knife so handsome a tree as the Holly are dead to beauty of form. To give us such ugly forms is to show oneself callous to the beauty of tree form, and to prove that one cannot even see ugliness.

A clipped Yew tree is as much a part of Nature—that is, subject to natural laws—as a forest Oak. . . . So far as that goes, it is no more unnatural to clip a Yew tree than to cut Grass.—"The Formal Garden."

Consider, too, the clipped Laurels by which many gardens are disfigured. Laurel in its natural shape in the woods, where it is let alone, is often fine in form, though we often have too much of it. But it is planted everywhere without thought of its fitness for each spot. Then it grows apace until the shears are called in, and its fine leaves and shoots are cut into ugly banks and sharp formless masses, spoiling and starving many gardens without need. There is no place in which it is used clipped for which we could not get fitting shrubs that would not need the shears.

It is not only clipped trees that are ugly, but even trees like the Irish Yew, Wellingtonia, and some *Arbor-vitæ* which have ugly or lumpy shapes. These, when planted much, so emphasise ugly forms about the house, that often there is no beauty left in the home landscape. Many of such ugly trees have been planted within the last generation, to the injury of the garden landscape, and are spoiling what might be the foreground of many a fine view.

In the old gardens, where, from other motives, trees were clipped when people had very few Evergreens, or where they wanted an object of a certain height, they had to clip. It is well to preserve such gardens, but never to imitate them. If we want shelter, we can get it in various delightful ways without clipping, and, while getting it, we can enjoy the natural forms of the Evergreens. Hedges and wall-like lines of green living things are useful, and even may be artistically used; they are sometimes, however, used where a wall would be better, walls having the great advantage of not robbing the ground near them. A wall is easily made into a garden with so many lovely things, too, from great scrambling yellow Roses to alpine flowers.

The consideration of how far the clipping of evergreen trees into various fantastic shapes is desirable is suggested by the engraving of some pretty and old archways in Yew sent by Lady Headfort from Ireland. Occasionally we find such arches and bowers are pretty in gardens, and, when very old, are always interesting and worth keeping. Besides, there is a marked difference between green archways or bowers, hedges and shelters, and the really fantastic clipping of living trees into the shapes of bird, or animal, or coffee-pot. It is well to keep any interesting specimens of the art when we find them, but clipping is better not carried out with our lovely evergreens on a large scale, as many have seen it done at Elvaston. It is happily rarely attempted in our own time, and I have seen no examples in France, though I have in New England, where an attempt to clip most of the evergreens in a garden near Boston was most unfortunate.

Now and then we see attempts on the part of those having more knowledge of some half mechanical grade of "design" (wall paper, tiles, or so-called decorative work of some kind) to galvanize the corpse of the topiary art.

Such an idea would not occur to anyone knowing the many beautiful things now within our reach, or by anyone like a landscape painter who studies beautiful forms of earth or trees or flowers, or by any lover of Nature in tree or flower. It is generally the thought of some cobbler who will not "stick to his last." Sometimes these puerilities are set into book form, as in the case of Mr. J. D. Sedding's "Garden Craft." For this author there is no art in gardening, but cutting a tree into the shape of a cocked hat is "art," according to Mr. Sedding!

On p. 180 he says:—

I have no more scruple in using the scissors upon tree or shrub, where trimness is desirable, than I have in mowing the turf of the lawn that once represented a virgin world . . . and in the formal part of the garden my Yews should take the shape of pyramids, or peacocks, or cocked hats, or ramping lions in Lincoln green, or any other conceit I had a mind to, which vegetable sculpture can take.

After reading this I thought of some of the true "vegetable sculpture" that I had been happy in seeing; Reed and Lily, a model for ever in stem, leaf and bloom; the grey Willows of Britain, lovely against our British skies, as Olives in the south; many-columned Oak groves set in seas of Primroses, Cuckoo flowers and Violets; Silver Birch woods of Northern Europe beyond all grace possible in stone; the eternal garland of beauty that one kind of Palm waves for hundreds of miles throughout the land of Egypt—a vein of summer in a lifeless world; the noble Pine woods of California and Oregon, like fleets of colossal masts on mountain waves—saw these again in the mind's eye and many other lovely forms in garden and wood, and then wondered that anyone could be so blind to the beauty of natural forms of plants and trees as to write as Mr. Sedding does here.

From the days of the Greeks to our own time, the delight of all great artists has been to get as near this divine beauty as what they work in permits. But this deplorable "vegetable sculptor's" delight is in distorting beautiful forms; and this in the one art in which we have the happiness of possessing the living things themselves, and not merely representations of them.

The old people from whom he takes his ideas were not so foolish, as when the Yew was used as a hedge or was put at a garden gate, it was necessary to clip it to keep it in bounds. But here is a man delighting for its own sake in what he calls with such delicate feeling "vegetable sculpture," in "cocked hats" and "ramping lions"! Such men as these I quote may not be without use even in our beautiful garden art, by showing people who love gardens to what lengths foolish ideas will go in degrading the true garden art to the level of the pastrycook's notions of design. They should stick to whatever work heaven or need has set out for them, go on with their tiles or wall paper, build the cruet-stand house, or design the carpet or the coal-scuttle, but leave our fair gardens alone. We have ab-

surdities enough of our own to strive against without letting the mere designer of conventionalities loose on our gardens or landscapes.

I say this without disrespect to members of any of the crafts above-named. I think the best men in such ways are busy enough with their own work not to seek that which they do not understand. But some of those who seek to force their help upon us are so foolish as to tell us that garden design and garden knowledge may be divorced, and also with great modesty that they only have all the "garden design," and that it has nothing to do with gardening! W. R.

Summer use of Seakale pots.—I can fully confirm all "J. C. F." says as to Seakale pots answering well for Tomatoes either under glass or in the open air. I use a good many of them. In fact I get better crops this way than where the plants are planted out, as the more confined root space induces extra fruitfulness, and one can keep the roots more under control as regards moisture as well as space. Although Seakale pots are nearly obsolete now as regards the use for which they were made, they are largely used in market gardens, for as soon as they are done with for Tomatoes in autumn they are utilised for late Chrysanthemums, each pot if turned bottom upwards holding a large clump or several small ones of kinds that flower at Christmas. They are also utilised during the cold winds of March, April, and May for sheltering any rather tender vegetable crops, such as Cauliflower plants, Vegetable Marrows, ridge Cucumbers, &c., or for protecting and blanching Endive and Lettuce they may be used in the same way that they are for Seakale; in fact they are very seldom idle. I usually cover Dahlias when first planted out with Seakale pots.—J. G., *Hants.*

FLOWER GARDEN.

THE PHLOX.

ONE of the most beautiful flowers for the adornment of the herbaceous border in autumn is the Phlox. There are two distinct sections, the early and the late-flowering, which are sufficiently distinct from each other to be distinguished by the growth of the plants even when they are not in bloom. The early flowering varieties succeed much better in Scotland than they do in the south of England. That the two sections have a distinct parentage there cannot be much doubt, but it is doubtful if we can trace them to the original specific forms from which they have been improved to their present high standard of excellence. They are certainly old-fashioned garden flowers, and a very good garden variety is figured in the first volume of the *Botanical Register*, plate 68, for the year 1815, under the name of *Phlox suffruticosa*. This plant is stated to be a native of North Carolina, and to be nearly akin to *P. caroliniana*, which is figured in *Botanical Magazine*, t. 1344, for the year 1811. These are to all appearance identical in leaf and stem with the early-flowering garden varieties. *P. carnea*, figured in *Botanical Magazine* in 1820, t. 2155, is merely another variety of this early-flowering section, and it is interesting from the fact that the corolla is striped or flaked of two shades of colour—pale rose, striped deep red, and the flowers are said to be sweet scented. This is true of both sections; they have a delightful fragrance, which adds much to their value as garden flowers. *P. decussata* may be the parent of the late-flowering section; it is also an old garden plant, and had shown some variety of form and colour more than sixty years ago, for it is figured in Sweet's "Flower Garden," 233, under the name of *P. pyramidalis*. The original species, *P. paniculata*, may also be traced in the late-flowering gar-

den Phloxes. No one would care to grow the original specific forms, and they are probably not now in cultivation, but it is interesting to trace the gradual improvement of these and other beautiful garden flowers through half a century or more. I have tried the improvement of a goodly number of garden flowers, and amongst them the Phlox, from seeds. I found it was easy enough to raise plants, and also to flower them the same season the seeds were sown, but amongst hundreds of seedlings few or none were improvements on the parents. I remember remarking to the late Mr. Parker, of Tooting, that I was raising garden Phloxes from seeds, and he remarked that it was astonishing what a very large number it was necessary to raise before any improved forms could be obtained. Still, it is an interesting occupation, and a fine bloom can be obtained the same season by sowing the seeds in heat in February. Prick the plants out into boxes and plant them out a foot apart in May in rich deep soil, and the wealth of blossoms obtained will amply compensate for all the trouble taken with them.

The Phlox is one of the hardiest of flowers, and some people take advantage of this and do not trouble to grow it well. A plant will in three years form a very large tuft or clump, and the way some growers increase the stock is to dig one or more of these clumps up and chop them in pieces with a spade. In this way spikes of the best quality will never be obtained. They must be raised from cuttings, and although these will strike freely enough in the open garden, by far the best results are obtained by planting them in flower-pots as soon as the shoots have grown an inch in the early spring months. It is best to keep a plant of each variety through the winter in flower-pots. These may be plunged deeply in cocoa fibre refuse in a cold frame. Cuttings may be obtained from these at least three weeks sooner than they can be had from plants growing out in the open borders. I must confess to taking greater pains with the cuttings than many gardeners would think necessary. I plant each one singly in a 2½-inch pot or what is termed long tom. Get the cuttings off with a heel attached, and they will speedily form roots in the gentle bottom-heat of a hotbed. When rooted they are hardened off in ordinary garden frames, from whence they may be planted out into well-prepared garden soil. I grow a few of them in 5-inch or 6-inch flower-pots. The plants are placed out of doors until the flowers begin to open, when they come in very useful for the greenhouse and conservatory. As soon as they pass out of bloom plant them out of doors in soil which can scarcely be too deep and rich. The plants ought to be 2 feet apart if they are planted in beds, and this is certainly the best way to manage them if the spikes are intended for exhibition. An immense mass of roots is formed by each of these plants, which soon exhausts the soil. As soon as dry weather sets in, some decayed manure should be placed around the roots, and the plants should have a good watering at least twice a week.

A plant will throw up a very large number of spikes, but they should be thinned out to three or four. The flower-stems must be supported in the early stages of their growth by a neat stick placed to each, or by one in the centre of the plant to which each stem should be secured. The flower-spikes snap over close to the ground readily in a high wind; in fact, I have known them to be broken off by the swaying motion of the spikes, even after they have been tied up, when one stick only has been used. It is much better to place a stick to each, which will hold them firmly in their places. The stock will speedily deteriorate unless a fresh lot of plants is propagated annually from cuttings. I never allow the plants to remain longer than two years in the beds, as the quality of the spikes falls off very much after the second year of blooming.

When I was a gardener in Scotland I had charge of Phloxes that were grown to produce spikes for exhibition, and the early flowering section at that time, nearly forty years ago, was the more beautiful and better adapted for the purpose. When I

came to London I found it was altogether different; the same varieties which grew well and flowered freely in Scotland and the north of England were almost a failure in the warmer, drier climate of the south, the leaves suffered from a kind of spot, and the spikes were poor in quality; whereas, the late flowering varieties I found did much better in the south of England. In fact, I do not recommend the culture of the Carolina varieties in the south at all. The *P. decussata* section has almost elbowed them out of the gardens. The colours are now so rich and varied, that few garden flowers can vie with them in this respect. There are pure white and blush, pale lilac and deep lilac-purple, carmine, reddish crimson, rose, and rosy red, and in some instances the colours are blended into each other. I can observe also a very great improvement in the form of the spikes as well as in the form of the flowers, which are so admirable, that it seems they cannot be further improved in this respect.

J. DOUGLAS.

CHRISTMAS ROSES IN TUBS.

It is disappointing to find, after three or four years of careful cultivation, that plants growing in tubs or large pots invariably begin to decline in vigour. This is the more perplexing because at first they show a wonderful amount of growth. The first symptoms of weakness are shown in the leaves, which gradually get smaller, and, as a consequence, the number and size of the blossoms are reduced. What is equally as disappointing is that liquid stimulants, however freely given with a view to restore the lost vigour, have no effect. The roots are evidently incapable of utilising the stimulant to any advantage. This will not surprise anyone who has an opportunity of examining the roots of such out-of-condition plants, as many of them will be found to be in a partially decayed condition. This does not occur in the case of plants that have an unlimited root-run in a deep and suitable soil. It is the centre of such plants that decays, and new roots and fresh crowns are formed in an outward direction. I do not think, however, that if the plants had larger tubs they would continue to do so after the first three or four years. To me the plants appear to be tired of the soil in which they are growing, and then they get into bad health. I am fully persuaded that in the majority of cases three years is as long as the plants will remain in a vigorous condition when grown in tubs or large pots. Besides my own plants I have had under observation those of other cultivators, and, from their behaviour, I have come to the conclusion that the proper course to pursue is to anticipate the decline of vigour in the stock, to take them out of the tubs in August, give them fresh soil, and if necessary divide a large plant into two. I have mentioned the month of August as the best time to disturb the roots of these plants because I have found they bear moving better than at any other time of year. There is another reason, I think, why the plants do not remain a longer time in a healthy condition when they are cultivated in tubs or boxes, and that is, the tubs are not deep enough. It is not everyone who is prepared to admit the necessity of providing Christmas Roses with a deep root-run, but I do so from actual observation, as when provided with a fairly light soil I have found the numerous roots 2 feet below the surface, and it is such plants that give the largest number of fine flowers. If there is one thing in the behaviour of these plants that has interested me more than any other it is their capacity to thrive when fully exposed to all the sun as when quite in the shade. At the same time I have found that if they are to succeed in a sunny position they require an extra depth of good soil and the roots supplied with plenty of water in dry weather the first year after planting. It is also a mistake to divide a large plant into many pieces. The safest way to reduce the size is to cut a large plant into two.

J. C. CLARKE.

TUBEROUS BEGONIAS IN DISTINCT BEDS.

EACH year the tuberous Begonia advances in favour, and it is a common practice to have distinct beds of the plants one colour, or shades of one colour, to each bed. This is commendable, as new effect is gained. Of course, one does not require too many beds of this character, otherwise the aspect of the garden will be garish and uninteresting. We noticed last year in the London parks and also some of the parks in the north of England that the tuberous Begonia was planted in this way, in one instance the bed being composed of a pure white variety, set off by an edging of *Dactylis glomerata variegata*, a very charming, because graceful, plant to associate with the Begonia. This plan is rendered easier now that seed of tuberous Begonias in selected colours can be raised true to those colours, and last summer in the Forest Hill Nursery of Messrs. J. Laing and Sons one could judge of the beauty and richness of the flowers by rows of great length of several varieties, each raised from seed and perfectly true to colour, save in very few instances, when a "rogue" appeared at long intervals. During the past few years the tuberous Begonia has undergone a great change, and its usefulness for bedding out increases each year. The plant is now of dwarf compact habit, the leaves almost resting on the soil, sturdy, and without the scraggy aspect of the older types, whilst in the form and colours of the flowers we can see the same advance, the flowers being broad and very pale in the case of the double kinds, the colours ranging from purest white to intense shades of orange. The tuberous Begonia is finer for bedding than the fibrous-rooted types, but we may mention that Princess Beatrice is a gem for edging, the small pink and white flowers appearing in profusion and almost hiding the leafage from view. This is the season for raising tuberous Begonias from seed, and in all gardens where effective colouring is desired in the summer months, good use should be made of this flower. Get a good strain of seed, in which the colours are decided, the form and size of the flowers all that can be desired, also the habit of the plant. They succeed better in cool, moist seasons than when the weather remains hot for weeks, as in the year 1887, but it is not often that they fail absolutely, which is more than can be said for the zonal Pelargonium. A moderately light soil, inclined to peaty, is the best, and during the summer give the beds liberal waterings if the soil is dry. At Halton, Lord Rothschild's residence, the tuberous Begonia is used by the thousand, and produces rich pictures of strong colour, not so garish and formal as in the case of the Pelargonium or carpet plants.

NOTES ON HARDY PLANTS.

Geum coccineum pl.—As regards getting the very double and dark-coloured variety from seed, it is quite possible, but you may have to try repeatedly before you get a form equal to the best that has been grown for some considerable time, but which of late has become comparatively scarce. Once you get the best variety, the older plants should be divided in summer, when the divisions may be set where intended to flower. Either young or strong plants but indifferently established when cold weather sets in are not likely to pull through the winter, and old clumps in many gardens die off suddenly as if exhausted. I am not speaking of the semi-double varieties or the lighter scarlet ones, for these are much more vigorous and longer lived, and they, too, may be had in all grades from ordinary trade seed. The good properties of the genuine big and double sort are its durability (cut or uncut) and long succession. The uniform deep rich scarlet or red colour, compared with the washy or mixed shades of seedlings, is one that can be relied upon for a bold, rich and pronounced effect. The readiest and surest way, then, is to procure stock known to be of the true sort, and, if needed, to work up a quantity for the purpose desired. In any case, some of the stronger roots should be split up every summer and set in new soil; so treated, the

young plants in the following season are remarkably free. It is certainly one of the best deep red flowers we have.

Linaria vulgaris Peloria.—This is a valuable plant for the garden in every way; it is true that its roots run, but not to the same extent as those of the typical plant. The roots, being peculiar, require a little special care in lifting and planting. They are thin, brittle and stringy. The best time to move them is when new growth has fairly begun, or even when the tender sprouts are just appearing on the surface. If set in rather light soil they will grow away. Roots transplanted just before winter often die. Left alone in light rich land, I have proved it here capable of taking care of itself for a period of fifteen years at least. The flowers are both singular and beautiful—they are of two shades of yellow, canary and orange, which render a handful, cut 18 inches long, a striking object for the exhibition table. This Toadflax, like its wild parent on the dry railway embankments, does best in a sunny situation.

Dicentra spectabilis.—So far as my experience goes, the imported or dry roots may be kept out of the ground until rather late to some advantage. What I mean by rather late is, say, until any time in the first month of the year that the unfrozen state of the ground will permit of their being set. The advantage is this, that they do not then start into growth so early; indeed not until quite late, when one may then see this beautiful plant in all its beauty. Left alone in the ground to start in its own way and time, it makes considerable growth in mild winters, only to be blackened or cut to the ground by late frosts. This is just what we might expect of a Siberian plant, and in the case of a species with all the graceful beauty of this, the common failures are all the more notable.

Arnebia echioides is not what we can term a showy plant, even when we take into account its habit in the case of strong specimens of flowering three times from early summer to autumn, but it is undoubtedly a species that may be said to have special claims from those who regard plants from other points of interest, and it can certainly be reckoned upon as sufficiently hardy for this country. As to soil, it is in no way particular. For preference, however, I would plant it in a deep and friable rich loam and sunny situation, as under these conditions it soon grows into a strong clump, when all through the season it may be seen with some portion of its soft yellow and dark brown spotted flowers side by side with other flowers without the spots that have the peculiar habit of disappearing when a day old. As a Boragewort it is one of the more showy. Plants set in the spring-time will be likely to flower in the ensuing autumn, provided they are fairly strong. I find seedlings yield a few blooms the second year.

Woodville, Kirkstall.

J. WOOD.

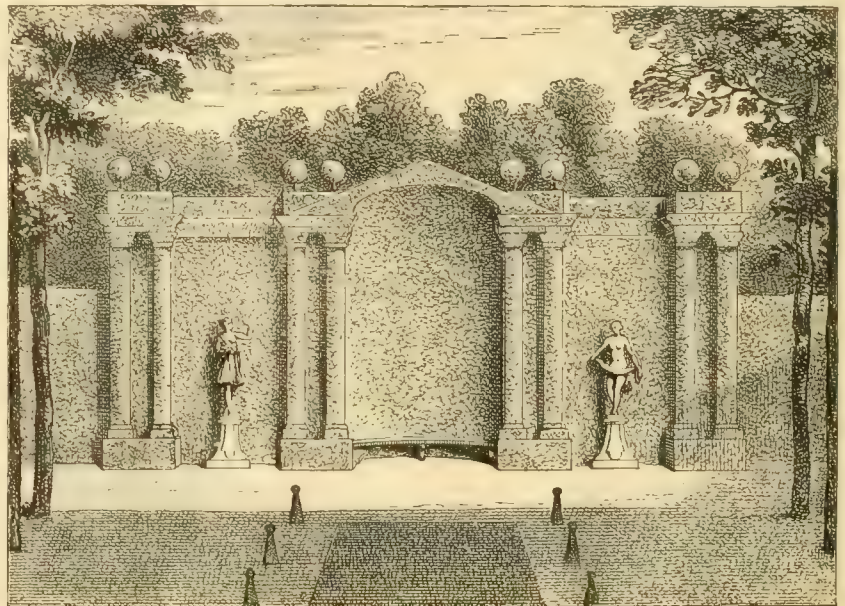
SAXIFRAGES.

WHICH are the best half-dozen? All depends on the purposes for which a half-dozen are intended. For almost a score purposes you might select as many half-dozens as the best, so varied and so numerous is the genus. For almost all kinds of soil and climate, for sunny slopes with stony soil, rock fissures, or even the bare rocks themselves; for a shady wood or shrubbery, an ordinary garden border or a swamp, and for almost any out-of-the-way corner or conditions, you may go to this genus for fitting subjects, and even a group of them if need be. I have seen many rock and alpine gardens, but never yet have I seen this class of plants dealt with as I would employ them had I the means. To give the crudest word-picture of my ideal: In the lower and moister parts of the rock garden formed of big boulder-like stones, with a very narrow and almost imperceptibly moving body of water, I would plant the almost despised group of mossy Saxifrages to get in some measure the effect of natural Moss-covered stones in moist dells. I would, even there, in a fashion have them planted in groups, for when the mossy Saxifrages are well grown or

matured, they are seen to have distinct traits, some keeping flat, others in cushion form, and the stronger forming hillocks of a diameter of 2 feet vertical. The larger forms or species of the Aizoon or rosette section should run in wild lines along the fissures of big rocks made firm with loam. The rigid and symmetrical evergreen foliage of this group is always pleasing, and the comparatively tall panicles of white flowers that appear in early summer in such profusion have in the aggregate a very alpine effect. Then there are the more silvery and encrusted species and varieties, embracing the smaller of the Aizoon type, as minima, marginata, cristata, notata, &c., with such as cæsia, tyrolensis, valdensis, squarrosa, aretioides, diapsenoides, &c., very few of which rise but the merest trifle above the surface. These, grown in irregular little batches on a sloping surface, and yet well up in relation to the eye, and with surroundings not too coarse or abruptly strong as regards other plants or shrubs, produce a fine effect, and with taste could perhaps be made to represent gardening out of doors in its highest form and most interesting aspect. Then there is the section of tufted or prickly spe-

as Geum, aspera, infundibula, ceratophylla, cuscutaformis, umbrosa, &c. It may be truly said that a pleasant garden for the year round could be had with Saxifrages alone, especially where plenty of stony surface, natural or otherwise, was available. The Saxifrages, with very few exceptions, are notable for their robustness; they have indeed but very few special requirements. If they (as a genus) have one dislike that can at all be said to be well marked, it is against manure or decaying organic matter, as we usually know and employ it for gardens. As I have already said, I have never seen a Saxifrage garden strictly on the lines here indicated, but so far as the capabilities of all the plants referred to are concerned, it is certain that this ideal, or even a more elaborate one, is quite practicable. With our resources of material and experience we have too long placed plants in the soil in haphazard fashion. We should none the less be enabled to enjoy the individuality of our plants were we to so arrange them as to harmonise with some design. J. Wood.

A note on Petunias.—As this is the season for ordering and sowing seeds, a note may be made



Walls and pillars formed of clipped trees. Those who have to keep the above in or let will discover the time and trouble necessary. (See p. 61.)

cies, as represented by Barseriana, juniperina, sancta, Malyi, &c., mostly very early bloomers; these might be accommodated in a snug corner at the foot of a vertical rock to protect them from the north and east. Another set could be made to represent another botanical class in a natural way by promiscuous groups—I mean the purple-flowered set, such as oppositifolia, with its four or six varieties, pyrenaica and vars., and the lovely retusa. These are all suited for earthy joints in rugged steps, or even moist ledges with scarcely any soil, if there are only moisture and some grit to wash down over them occasionally. Speaking of ledges, what can look richer or more natural than long pendent masses or tongues of *S. Wallacei* hanging down from broadly shelving rocks? These can be had to droop quite 3 feet or 4 feet, and the same qualities apply to others of the mossy class, though this one is not exactly a mossy variety; besides, there are few whose flowers last for six weeks as these do, and they are Hawthorn-scented withal. How noble, too, the effect got by broad patches of *S. peltata* and *pennsylvanica*, the former with leaves 12 inches to 18 inches across. For those who would like to plant in the more mixed or single specimen style there is ample margin left in this great genus. There are as well other strong sections, as implied by such types

concerning the big-flowered Petunias that some seem to think, judging by their frequency in gardens, effective and beautiful. But a bed of these monstrous-flowered types we saw in a garden last summer was the reverse of beautiful, and the owner confessed disappointment, as he had been led to expect greater brilliancy of colour from this strain of big flowers. The varieties for size of bloom were certainly unique, of great width, but flabby, utterly without substance, the colours, if varied, being dead or dingy, as purples, dull crimson and allied shades. It is unfortunate that the craze for mere size in flowers should be extended to even the Petunia, which is bright and pleasant to look at when the flowers are of medium size and produced in profusion. One kind in which the flowers were white, crimson at the edge, was in particular remarkably fine, and was made good use of as a margin to a narrow border, almost every leaf being hidden by the wealth of bloom. It was this type of Petunia that behaved so well in the intensely hot summer of 1887, when almost everything was dried up in gardens except the Petunia, that amongst a very few other things behaved remarkably well. A bed of medium-sized varieties as regards size, the colours also decided, not dingy purple or magenta, is very effective, or the plants may be used as an edging—a purpose for

which they are well fitted. Heavy rains and winds play sad havoc with the big flowers, but the other types seem little affected.

Mule Pinks.—Of all the mule Pinks, I think the finest and most useful is Napoleon III. The flowers are of a rich scarlet-crimson colour. It is largely grown by Mr. Jennings at Ascott, Leighton Buzzard, the residence of Mr. Leopold de Rothschild. Mr. Jennings grows it both in pots and in beds, and finds it supplies him with cut blooms of a bright hue when most useful. The stock is increased by means of cuttings made of the shoots thrown up from the base of the plants, and they strike in pots of light sandy soil pined under bell or hand-glasses when stood in a cold frame. When rooted they are potted off, grown through the winter, and in spring either shifted into larger pots to bloom indoors or planted in the open. Plants in pots are found very useful for decoration. Other varieties are Marie Paré, white; multiflorus, flesh coloured; Highclere, pink; Ro-

hardy climbers. It is very hardy and runs about gracefully among Azaleas and the choicer garden shrubs, without ever attaining such vigour as to injure them. We saw a very pretty white variety in France in the autumn, which we have planted in such places. The red or maroon form is also very handsome. Taking advantage of its habit, we have scattered it in some quantity through an orchard hedgerow, situated on a bank of good soil, where we believe the plant will run gracefully through Sweet Brier, Holly, Sloe, and other plants.—*Field.*

THE ROCK GARDEN.

IN nine cases out of ten the rock garden is merely a heap of soil studded with stones standing upright at more or less regular intervals. Choice alpine plants if tried on such a structure must of necessity soon perish in a position so unsuitable to their requirements, and the whole might

planted with shrubs and fast-growing climbers for the sake of immediate effect. The result is that in a very few years' time the stones are completely hidden from view, and the whole so overcrowded and entangled, that it can only be called a desolate wilderness. For the last twenty years I have during each year constructed several rock gardens, and must plead guilty to having in my earlier attempts yielded frequently to the temptation of considering more the immediate effect than looking ten years or so ahead. I have planted rock gardens with shrubs, Ferns, and other plants which appeared not only suitable, but were decidedly picturesque in effect; but two or three years after that effect had vanished, and the plants were overcrowding and killing each other. How different has been the result with such portions of this rock garden as had been specially constructed for, and were entirely devoted



Levens Hall, Westmoreland. Example of true and old topiary work with fine old house behind. Interesting as this is, this emphasising of ugly forms is the worst possible thing in such a position. (See p. 61.)

setta, rose; and striatiflorus, striped. In some parts of the country I have seen the old multiflorus doing remarkably well in the open borders, making large tufts, though at a time of severe frost, especially when it follows rain, the plants suffer severely, if they are not entirely destroyed. The best heads of bloom come on plants raised from cuttings and grown on strongly. Good cultivation is amply repaid by a luxuriant growth and attractive heads of bloom.—R. D.

Clematis Viticella.—We have always thought that the graceful charms of the more delicate Clematis were more deserving of a place than many of the very showy hybrid varieties raised of late years in England, some of which are very hard and metallic in form, and in colour not very pretty. The old-fashioned Clematis called Viticella is one of the many species which claim a place among

fittingly be described as a graveyard for plants unless the artist had introduced a few coarse and fast-growing creepers, which mercifully hide the hideous work. Such rock gardens as these, unfortunately, still exist in abundance, which is the more deplorable, as the British Isles enjoy such exceptional advantages for growing choice rock plants.

Another kind of rocks is the elaborate and costly structures composed of large stones and cement, in a manner somewhat resembling the horizontal strata of natural rocks. It cannot be denied that many rock gardens constructed on this plan have at first a pleasing and almost natural effect, but inasmuch as they are unfit for the cultivation of alpine plants other than the coarse-growing kinds, they are in most cases

to, the exquisite gems of mountain plants from the higher altitudes. The first year, it is true, the effect was rather stony. Small alpine plants cannot be called objects of great beauty. Even the second year they produced flowers in abundance, and became more beautiful year by year. These plants have now occupied the same position for nearly a dozen years without overcrowding each other.

From the above the inference may be drawn that for the permanent decoration of rock gardens, whether large or small, no more pleasing or more satisfactory results can be obtained than by using the dwarf kinds of mountain plants, especially those from high levels near the snow-line. I am far from wishing to advance the theory that rock gardens without ex-

ception should be planted with alpine exclusively, but the latter should certainly predominate if the situation is favourable, and as the successful cultivation of these little mountain gems requires in most cases special care in the preparation of the place intended for their home, I propose to give in the following chapters a series of original essays (based on years of study combined with practical experience) on the construction of rock gardens specially for alpine plants.

THE ADVANTAGES OF A ROCK GARDEN.

Having in my previous notes pointed out the satisfactory results to be obtained by the cultivation of alpine plants in rock gardens, I may here venture the assertion that the first and foremost object of our rock gardens should be to provide a home for as many of these hardy mountain plants as possible, thus making our gardens bright and cheerful often at a season when most other plants are at their worst. What can be more delightful than the sheets of showy blossoms of the early spring-flowering alpine, long before the rest of Flora's children have awakened from their wintry sleep? But even during the autumn and winter months a rock garden might be made very attractive. Although devoted chiefly to alpine, it should be constructed in such a manner (especially if on a large scale) as to allow also the use of late-flowering perennials, Ferns and handsome Evergreens either as isolated specimens or grouped in the background, but always in such a way as to enable them to fully develop their natural beauty without in any way endangering the welfare of the little treasures, to which the choicest and most accessible parts of the rock garden have been assigned. The rocks themselves, though artificially composed of stones of various sizes, should be perfectly natural in appearance, and not mar, but add to the beauty of the garden. It is not at all necessary that the rock garden should be on a large scale, but it should be true to Nature, and hence an object of beauty. A small bed, a few feet across, in which the stones emerge from the ground as if they were natural rock, will be at all times more pleasing to the eye than the most elaborate structure which does not furnish these conditions and is therefore unnatural in appearance. Not only will a well-constructed rock garden never fail to be a source of pleasure to its owner, but it may often be found the most economical way of transforming a naturally ugly piece of ground into an object of beauty at a comparatively trifling cost.

In laying out new grounds, the owner is often puzzled what to do with rough, irregular parts of the land, containing, perhaps, deep pits or undulating mounds of stony rubbish. In many cases large sums of money are spent in levelling such spots in accordance with the more general ideas of orthodox regularity seen in most gardens. These very spots, however, could often easily be transformed into a most picturesque rock garden, and with a little taste might be fittingly amalgamated with the immediate surroundings, as well as the other parts of the pleasure ground, and all at little expense, because the natural irregularity of the ground makes extensive excavations and other preparatory work for the rock garden unnecessary. If such irregular depressions or mounds are quite in the open, i.e., far away from trees or other objects which might overshadow them, so much the better. They will then form a suitable site for an excellent alpine garden. But even if an irregular dell occurs in a part shaded by trees, it can be turned to good account and form the

basis of a delightful rock garden devoted to Ferns, Cyclamens and other shade-loving plants. The rocks in such situations should not be continuous, but emerge only here and there from the ground in a natural manner, leaving between the groups of rock spaces for Daffodils, Dog's-tooth Violets, Ferns of various kinds and bold-looking fine-foliaged plants. In all cases, therefore, we should, if possible, make the most of such irregularities, adapting our ideas to the natural advantages offered by the ground.

I may here mention another advantage of the rock garden, viz., the facility which it often affords for dealing with an abrupt slope, which otherwise would require to be supported by a wall. A case in point is the rock garden at Greenway, on the river Dart (the property of Mr. T. B. Bolitho, M.P.), which has been recently illustrated in *THE GARDEN* of Nov. 19, 1892, p. 445. The natural soil on this steep slope was so shallow, that even Grass could not grow, and under the action of frost and rain the bank continually crumbled away until it was permanently secured by a rock garden, which has thus proved both useful and ornamental. A still further use may often be made of the rock garden for hiding from view undesirable objects in a landscape. If the height of the required block is such that this cannot be effected by the rock garden itself, then it might be so arranged as to have scattered groups of rocks and alpine flowers in the foreground and a background of suitable trees and shrubs, which, however, must be sufficiently far away from the parts allotted to alpine plants proper.

Exeter.

F. W. MEYER.

(To be continued.)

SUMMER FLOWERS FROM SEED.

THE propagation of plants from seed to assist in brightening the flower garden at different seasons of the year is now so general, that a summary of things required for various purposes through the summer months is an essential feature before the despatch of the seed order. I mention for "various purposes," because plants raised from seed adapt themselves to many requirements—for climbers and trailers, as Cobæas and Maurandias; for sub-tropical work, as Acacias, Tobaccos, Wigandias and Solanums; as substitutes for other bedding plants, as Asters, Marigolds, dwarf Calendulas, Lobelias and Phlox Drummondii; for summer and autumn cutting, as Sweet Peas, annual Sunflowers, Chrysanthemums and Dahlias; and for bold massing in outlying shrubberies, as Candytuft, Mignonette, Cornflowers and Clarkias. The subjoined list is necessarily somewhat curtailed, but I think it will be found fairly comprehensive, and all plants enumerated therein are of easy culture. Not many decided novelties are to the fore this season. Probably one of the most striking is the Butterfly Pea (*Centrosema grandiflora*). It should prove useful for covering trellis-work of every description, and if also a good trailer, will be grand for the fronts of boxes and the edges of raised beds. Nearly the same remarks apply to the variegated Japanese Hop; this will prove a decided acquisition if sufficiently pronounced in colour. The new forms of Iceland Poppies (both single and double) will be valuable for cutting, so also will the two white flowers—Godetia White Pearl and the white Margaritha Carnation. Many novelties are announced in Sweet Peas, but an investment in collections of new varieties is rather an expensive luxury, and really good things are obtainable from mixed packets. Of rather older sorts, Mrs. Sankey and Princess Beatrice are two lovely flowers. Many other things may be found catalogued as novelties, of which some few doubtless deserve the name, whilst others, although in a certain sense new, often represent only a really good strain of things already in commerce.

Turning briefly to the general collection, it will be found that among the best bedding annuals are dwarf Marigolds, Asters and the newer forms of Calendula, Phlox Drummondii in various colours, double Zinnias, Petunias and East Lothian Stocks. All the larger seeded things can be sown on a prepared bed in a slight warmth; very fine seeds as Petunia and Lobelia are best in boxes. The Stocks should be sown in August, transferred to pots or boxes, wintered in cold frames, and planted out as soon as the weather gets a bit settled in spring; they make a grand bed, and are also valuable in a cut state. All the above are useful for filling beds previously occupied with spring flowering stuff, and have, with the exception of the Asters, a lengthy flowering season, a feature which renders them much more useful for this particular purpose than annuals of equal beauty, but which are comparatively short lived. In choosing seeds for summer and autumn cutting, Sweet Peas would claim almost the first place. They should be sown early in deeply dug and prepared ground, be protected from the attacks of birds till well up, and during the flowering season all seed-pods must be promptly and thoroughly removed. Poppies are now in great request, and are special favourites in a cut state all through the summer months. I should place Gaillardias and the annual single Chrysanthemums (*carinatum*) very high on the list for cutting. They are of easy culture and stand well in water. The new race of Comet Asters is also useful, and a batch of seedling Carnations is indispensable. Of stronger and taller plants, the miniature single Sunflower, and *Helianthus citrinus*, are very useful, although gardens that boast of grand clumps of the perennial types may hardly require them. Dahlias, both single and *Cartus*, are now largely treated as annuals, and the flowers are useful for tall vases. Besides those things enumerated earlier in these notes as valuable for sowing in quantity on shrubby borders and more secluded parts of the flower garden may be included *Eschscholtzias*, *Linum*, *Whitlavia*, *Nasturtiums*, and plenty of *Mignonette*. Into the question of plants for sub-tropical gardening it is hardly necessary to enter at length; they are used but sparingly in the majority of gardens. *Eucalyptus globulus* and *E. citriodorus*, *Acacia lophantha*, *Nicotiana collosa*, one or two *Solanums* and *Wigandias*, and *Ferula gigantea* are a few good things easily grown. Plenty of *Nicotiana affinis* must be provided; this is about the most valuable acquisition we have had in the last ten years. Two fine-foliaged plants of dwarf habit obtainable from seed and that are always useful are Dell's Crimson Beet and *Centaurea ragusina*.

E. BURRELL.

Claremont.

A note on Christmas Roses.—It is only in soil of a suitable character that it is safe to lift these plants every two years and then divide them afterwards. Anyone with a soil that is naturally heavy, cold and unsuitable to the quick growth of these plants will find a difficulty in managing them in this way unless a large stock of plants is available. I treated them in the way named by "A." (p. 4) some years since, but I found my stock diminishing too fast to be able to keep up a supply, so I adopted the plan of making a plantation of the best roots on an east border of a size suitable for covering with an ordinary two-light frame. I took out the subsoil to a depth of 18 inches, retaining that on the surface, while the bottom was thoroughly broken up to allow of the water running away. Loam, peat and leaf-soil were added in about equal portions. The clumps were planted in the spring after flowering, and now they give a wealth of bloom every year at Christmas, with but a tithe of the trouble experienced in lifting and dividing the roots afterwards. When the last flowers are cut from the plants in February, or sometimes it may be in March, the frame is taken away if the weather is at all suitable. The old flower-stems not used when fresh are cut away, and a mulching of horse manure is given to the plants. When growing abundance of water is given if the weather be hot and dry, and occasional doses of

liquid manure are supplied, inducing good growth, which is all in favour of a full crop of flowers the next year. It is surprising how soon Hellebores suffer from drought. The lights are put on in the middle of October, abundance of air being admitted at all times, except in the case of cold weather, when the flowers are pushing up and it is thought they will not be expanded by any particular date.—E.

PURPLE IN FLOWERS.

TO THE EDITOR OF THE GARDEN.

SIR,—I have no intention of moving from what I said to you the other day, and I shall make no reply to Mr. Engleheart's remarks of December 31 last, though they were provocative of a good deal; but I still can ask you to print two or three statements which have come into my hands, and which I think very clearly show where "the confusion of thought and language" has really been in this matter of purple in flowers. The first is from the pen of a Fellow of the Royal Society, the second from an old friend whose opinion carries great weight wherever garden literature is concerned. The name of the third is like a household word wherever flowers are grown. It would be very easy to add to them, but I think your columns have been already loaded enough with this barren controversy. The Fellow of the Royal Society writes as follows:—

It is quite clear to anyone reading Mr. Ewbank's first letter that he is chiefly speaking of flowers when he mentions the use of purple forty or fifty years ago in a generic sense; the whole context shows this, and that we have progressed in descriptions of flowers to a more specialised way of speaking he also shows by quoting such a work as Mr. Nicholson's "Dictionary." It is also clear that when Mr. Ewbank says the colour of *Solanum Torreyi* is not purple at all, he means in the specific sense and not in the generic. Mr. Engleheart's letter of October 22 simply contains the opinion that the generic use is the only right one. The rest of his letter and his statements about Miss Jekyll, &c., are only variations of this same statement apparently put in to make his letter appear more complete as a criticism. If this contention be true, it is clearly better for the botanist to abandon purple altogether because of its lack of precision, and in this sense it is only correct to call the *Solanum* purple as it is to call it coloured; indeed, Mr. Engleheart's concluding words, that "purple need not be violet, yet violet was and always will be purple," is sufficient objection to the use of purple as descriptive of a flower. Mr. Engleheart in his second letter, November 19, quotes the opinion of an academician to prove that purple is always used generically. He does not seem to see that this very opinion only serves to show again that purple is altogether inappropriate as a description of the *Solanum*. For the academician says: "I doubt, however, whether in a shop with any pretensions to colour-knowledge a lady could be served at all if she simply asked for purple. An educated shopman would surely ask her what kind of purple she desired." If purple then be inappropriate because it is insufficiently precise as descriptive of a ribbon, how much more inappropriate it must be for a flower.

In the same letter Mr. Engleheart repudiates any intention to imply that violet is not more accurately descriptive than purple, and yet the whole spirit of his first letter would convey an opposite opinion to the reader. The reason why Mr. Engleheart talks of contradiction is because he fails to see that the same word may be, as often is, used both generically and specifically. This is extremely common in the classification of plants and animals, where the name of the family is frequently used again for one of the genera included in it, and there is no objection to this. Mr. Engleheart denies that this is the case

with purple, "because neither in the spoken nor in the written language do I encounter any such use of the words." This seems to me the most unfortunate sentence in the whole correspondence, for Mr. Ewbank had previously shown and Mr. Engleheart must know that Nicholson constantly uses the term purple specifically, and not generically, as descriptive of flowers in passages the interpretation of which cannot be open to doubt. It would appear the love of controversy led Mr. Engleheart to attack a letter which was perfectly clear, but which was never intended to open a controversy, and the same motive must explain why, in order to secure an apparent advantage, he has made this inaccurate statement. He must know that Nicholson distinguishes in this very genus *Solanum* between *S. runcinatum* as "bright purple" and *S. Torreyi* as "violet." Nicholson's well-known work is sufficient evidence that purple is used specifically in descriptions of flowers, just as the academician's letter shows that it is also used generically.

The second statement to which I have referred comes from Canon Ellacombe, who permits me to say that he is quite of my opinion that purple has a specific as well as a generic value in flowers. The third statement is more laconic, and runs thus:—

I do not agree with Engleheart's fads about purple.
HENRY EWBANK, January 14.

LILIUM AURATUM.

THERE is nothing in the way of bulbs with which I have had to deal that has disappointed me more than *Lilium auratum*. I grew it first in pots, and on the whole this system has given the greatest satisfaction, as the bulbs have lived longer than when planted in the open. I think they would have lasted still longer if I had used greater care in preventing bright sun from reaching the foliage when it was quite young. The leaves may perhaps bear the full force of the sun when they are growing in the open air, but it is very different when it reaches them through the glass, and they are at the same time surrounded with a hot and dry atmosphere. It has been after passing through such an ordeal that I have found the leaves more or less scorched, and ultimately turn black. This last condition would make them susceptible to attacks of insects or fungoid growth, to which some people fancy they can trace the cause of failure, but I think the presence of insects or fungoid growth on the injured leaves is the effect and not the cause. The longest time I have kept a bulb of this Lily in a satisfactory condition was six years. This was one that was very promising the first year. It sent up a strong stem, which was well studded with leaves and showed seven flower-buds. These I reduced to one as soon as the buds could be seen. The reduction of the number of flowers had a greater effect on the character of the growth than I anticipated, as this plant was conspicuous amongst the others for its stately stem and large and handsome leaves; but, strange to say, the one flower left came deformed. The next and three following years the bulb so treated was in every way far more satisfactory than the others.

It is about ten years since I planted the first lot of bulbs in a bed amongst *Rhododendrons*, but they all disappeared in about four years, and the same thing occurred with others planted in a well-prepared soil in a mixed flower border. Five years ago, when I made a new garden, I started growing this Lily again in the open air, this time with English-grown bulbs, which came to hand apparently full of life and vigour. They, too, have disappeared, and that in a garden where everything else thrives in the most satisfactory manner I think now I will give up, for I certainly hoped for better things when I grew bulbs in a maiden soil. J. C. C.

Tritonia Templemanni.—This is one of the handsomest of the thirty species of *Tritonia* known. It was discovered by Mr. Robert Templeman, of

Cape Town, in 1887, and named by Mr. Baker, who describes it as having linear, rigid, erect leaves, 2 feet long, and a tall, branched scape of bright red funnel-shaped flowers, over an inch long, with spreading segments. Corms of this plant have lately been sent to Kew by Mr. Templeman. The leaves are similar in texture and form to those of *Sparaxis pulcherrima*, now called *Dierama*. The corms are remarkable in being persistent—that is, the old corm, instead of shrivelling and dying away, as in *Gladioli*, remains quite firm and healthy, and as a new one is formed every year, the root-stock consists of a number, in some cases more than a dozen, of corms, all packed closely, one on top of the other. The lowermost corms must be a dozen years old.—W. WATSON, in *Garden and Forest*.

STOVE AND GREENHOUSE.

CAMELLIAS CASTING THEIR BUDS.

It is by no means uncommon for Camellias to cast a considerable portion of their buds during the winter months. The bud that remains on the plant until the end of January is practically safe, and seldom fails to expand. It is in the dark months of December and January that bud-dropping is most likely to cause annoyance. Bud-dropping in Camellias may be traced to various causes. A weakness of constitution induced by deficient root-action is the most prolific source of bud-casting. Curiously enough, weakly specimens frequently set a quantity of buds, and if all of them are allowed to remain, the probabilities are that nearly or quite all will fall during the dull months. Better far to thin the buds as soon as they are set, leaving just as many as the plants can deal with, than lose them all later on. The eye of the grower will be able to judge within a little the number of blooms that a plant is capable of bringing to perfection. If the collection were gone over in this way early in the autumn, not only would bud-dropping be in a great measure lessened, but the individual blooms would come finer. From November till the end of January it is not safe to maintain a higher night temperature than 45° with a rise of 5° in the daytime. Especially during periods of hard frost with little or no sunshine must artificial heat be carefully applied. If the atmosphere of the house gets very dry many of the buds will certainly fall. I have seen them lie on the soil as thick as hail merely through the house being somewhat over-heated on frosty nights. Far better let the temperature drop within several degrees of freezing point in a time of hard protracted frost, such as we have passed through, than run the risk of seriously diminishing the crop of bloom. Camellias are naturally so hardy, that one need never fear the thermometer marking freezing point towards the morning. Naturally, when other things of more tender character are grown with them, such a low temperature would not do, but Camellias should never be wintered with plants that demand much warmth. Camellias will remain for years in good condition, retaining their foliage and blooming with regularity and freedom without change. When, however, they come into such a root-bound state, they require, even during the winter season, a considerable amount of moisture at the roots. The mass of roots gradually pushes up the soil until there is very much less space between it and the rim of the pot than when the plant was put into it. The consequence is that the ball of soil is apt to be deficient in moisture, and the buds are thus imperfectly nourished. The ill effects of this will generally not be apparent until the pipes have been made hot to keep out frost, and then strong specimens, to all appearance in the finest condition, will cast their buds wholesale. The better budded a plant, the worse will its case be under such circumstances. Plants with heads disproportionate to the size of the pots should every now and then get an extra allowance of water. Not infrequently the source of injury might be traced further

back to that period when the plants are taking their annual outing in the open air. Rainy weather is apt to be deceptive as regards the amount of moisture plants in pots get. For days together rain may fall that will keep the foliage and surface soil quite wet, and yet not be heavy enough to penetrate the dense foliage in sufficient quantity to thoroughly moisten the compost. If this occurs, as is frequently the case in September when the buds are swelled up, they will be sure to sustain a check, which often will not be perceived until winter is far advanced. With plants in pots of considerable dimensions, it is well to tap them smartly with the knuckles now and then. If they give out the slightest ringing sound, they must at once be thoroughly soaked, even though the surface soil be quite wet. When bud-dropping is caused through defective root-action, this must in some way be restored. Fresh drainage and a clean pot will frequently do all that is necessary, but if the soil looks close and the roots are much discoloured, something more than this will have to be done. When the compost consists mainly of peat, it is not often that it gets close; but if loam is the principal ingredient, a too liberal use of the water-can will soon bring it into a sour condition. If this be the case, as much of the old soil as possible must be removed, the plant replaced in a clean pot of the same size, employing fine sandy peat in place of the soil that was taken away.

J. C. B.

Callas.—Whilst there seem to be differences of opinion as to whether it is wisest to plant out Callas in the spring for the making of good summer growth, or to retain the plants in pots, I find very many growers adopt the plan of keeping all their stoutest ones in pots, only turning them out at the proper season, removing side shoots, rubbing down the balls of soil, and repotting in so small ones as well can be at the first, keeping them in the pots all the summer, and pushing them along by housing early for the production of early flowers. In many cases a further shift into rather larger pots becomes needful during the summer. The market growers regard this as the best course where Callas have to be forced. That the weaker or smaller stems or offshoots when planted out into highly manured ground do relatively make the strongest growth there can be no doubt, but as these, even if the stems and leafage have become ever so stout, still being newly potted in the autumn are less fitted to stand early forcing than are those which have been kept in the pots all the season. It is very important, however, especially that Callas are of a semi-aquatic nature, that very ample waterings be given, especially to pot plants, and also that the pots stand on a bed of ashes or cocoa fibre refuse. Liquid manures are of more service to pot plants where the roots are densely crowded than to plants outdoors, where because of ample manure and root room the chief want in hot weather is plenty of moisture. It seems absolutely improbable, come yellow or any other colour, that the cultivation of the white variety will ever be materially lessened.—A. D.

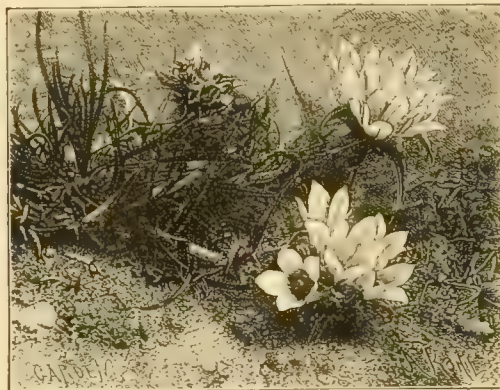
Indian Azaleas for early flowering.—Of these, the early-flowering character of Deutsche Perle is fully maintained upon plants several years imported. In my own case the plants of this variety will have had nearly all the flowers cut from them before any are open upon indica alba, which, though still an excellent variety, will not compare with Deutsche Perle either for earliness or quality, the purity of colour in the last named being superior, whilst the flowers are much finer and thus better adapted for many purposes. It is also very free flowering and of good habit, this latter advantage being perhaps more a point of management than anything else. As an assistance to this end no strong shoots should be allowed to take the lead; if these be stopped it will be much better. Judgment is also required in cutting the flowers, so as to regulate the growth also. Unless every bloom is needed, it is not advisable to cut too hard, those being left where the wood is not so convenient

for cutting of a good length. The flowers of Deutsche Perle are rather susceptible to bruising when they are packed too lightly together.—A.

CLIMBERS FOR A GREENHOUSE WALL.

I HAVE a lean-to greenhouse 15 feet long with a back wall 9 feet high, and wish to cover it with a flowering creeper, or rather with creepers, as I have thought of planting *Asparagus plumosus* on a part of it. There is a stage 2 feet wide, 6 inches deep and 2 feet 8 inches high. The stage has 6 inches of spar on it at the present time. This I intend moving, and think of making some brick pits, so as to plant the climbers out. The house is occupied with Begonias in the summer, Primulas and such like in the winter. Would some reader of THE GARDEN recommend a climber or climbers that would do for cutting? I prefer something sweet-smelling.—HIGH PEAK.

*** In reply to the above, I would advise the following selection for the purpose, not all, of course, but such as may be deemed the most suitable as to the time of the year when most needed in flower. Of sweet-scented plants either a dark or a light variety of *Heliotrope* would soon fill up a good amount of space and be found very useful, bearing any amount of cutting. *Rhynchospermum jasmoides* would be another serviceable plant, very sweetly scented, flowering from May to July; being



Wahlenbergia (Edraianthus) dalmatica.

an evergreen, the wall would be at all times covered with foliage. *Jasminum grandiflorum* is a very free winter-flowering variety; it is well worthy of more extended culture. For the first year or two after being planted out it does not make much growth, but when once well established, it grows freely enough. *Swainsonia Osborni* and *S. galegafolia* are two very free-growing and profuse flowering climbers, making a fine snow whilst in bloom; the former has purple blossoms, the latter red, there being also a white form called alba. Another sweetly-scented climber is *Mandevilla suaveolens*, which flowers in the summer, the blossoms being somewhat similar to those of an *Ipomæa*. Both *Lapageria rosea* and *L. alba* can be strongly recommended, but the flowers are not scented; still, they rank amongst the very finest of all cool house climbers. *Chorozema Chandleri* and other varieties of this genus are beautiful climbing plants, but they lack perfume. *Luculia gratissima* is not, strictly speaking, a climber, but it may be trained to a wall; its flowers are deliciously scented. Another very suitable wall plant is *Daphne indica rubra*, which is not met with very often in a flourishing condition in a pot, but when planted out in a peaty soil it will thrive very well indeed. This being another sweet-smelling flower, it can be confidently recommended; the plant is of rather slow growth, however. There are also *Acacias* suited to the purpose, viz., *A. armata*, *A. Riceana*, and *A. Drummondii*, all making a fine display with their yellow blossoms in the spring months. *Choisya ternata* as a comparatively hardy plant should be

noted, its foliage being evergreen being also in its favour. *Habrothamnus elegans* is a very free climber, but it would possibly be of too robust a growth, and the same may be said of the *Begonias*. Attention might very well be directed to *Bougainvillea spectabilis* (see coloured plate January 7, 1893) note well there respecting its culture. *Solanum jasminoides* is an exceedingly free-growing climber, and one that yields a wealth of blossom. The *Passifloras* and *Tacsonias* would neither of them do so well against a wall as upon a roof. Whatever climber is chosen from this list look well to the drainage and use the best soil that can be had; this may consist of equal parts of loam and peat unless where otherwise specified. Another point to observe is to secure plants that are perfectly free from such insect pests as mealy bug and white scale, both of which will give no end of trouble later on.—GROWER.

GARDEN FLORA.

PLATE 894.

TUFTED HAIRBELLS.

(WITH A COLOURED PLATE OF WAHLENBERGIA (EDRAIANTHUS) PUMILIORUM.)*

THIS is a charming and extremely useful little group of alpine, closely allied to the Hairbells, and mostly inhabiting the mountains of Dalmatia and Asia Minor. Taking it as a whole, the genus *Wahlenbergia* numbers over eighty species, but the section of which our coloured plate is an illustration is best known in gardens under the name of *Edraianthus*, and numbers not more than half a dozen good species, while two or three of those are so closely allied as to warrant us doubting there being as many as six. They are, however, useful free-flowering alpine, and are well described as tufted Hairbells. They are all perfectly hardy, forming tufts from which spring the longish decumbent flower-stems, from each of which are produced large heads of pretty bell-shaped flowers, upright, and of various shades of purple. The chief elements in their culture are full exposure, plenty of sunshine, a free gritty soil, and raising the plants above the surrounding level, so that there is no possibility of stagnant moisture remaining near them.

W. PUMILIORUM, the subject of our coloured plate, is perhaps the rarest of the species, and although little different from *W. Pumilio*, it gives us a different shade of colour, smaller and narrower leaves, a more straggling habit, and longer-tubed flowers. We find it an excellent hardy plant for the rock garden, where on raised mounds of free gritty soil it grows and flowers vigorously.

W. KITABELI is a sturdy tufted species, with large purplish blue flowers and crowded narrow, slightly toothed leaves.

W. TENUIFOLIA is a dwarf compact growing species, with hairy stems and short slender leaves. The smallish flowers, six to ten in a head, are violet-blue or whitish purple, whitish at the base.

W. GRAMINIFOLIA is the commonest and perhaps the easiest to manage. It forms tufts of long grass-like leaves, from which are produced bunches of large purple flowers, beautiful and very attractive on account of the way in which they are set round the tuft. This species ripens seed freely, and that scattered about on the rockery usually germinates readily.

W. SERPYLLIFOLIA, with its small and Thyme-like leaves and abundance of purple-blue flowers, is exceedingly effective on ledges.

* Drawn for THE GARDEN in the Royal Gardens, Kew, by Champion Jones, July 20, 1892. Lithographed and printed by Guillaume Severeys.



W. DALMATICA, the best of them all, is a fine robust species, forming large tufts of somewhat broadish linear leaves and numerous bunches of deep purple flowers.

All the species are true perennials, easily cultivated, vigorous, and free-flowerers, and well adapted for sunny open spots in the rock garden. They are difficult to increase by division on account of the long roots they make, but they ripen seed freely, which if sown directly it is gathered rarely fails to germinate.

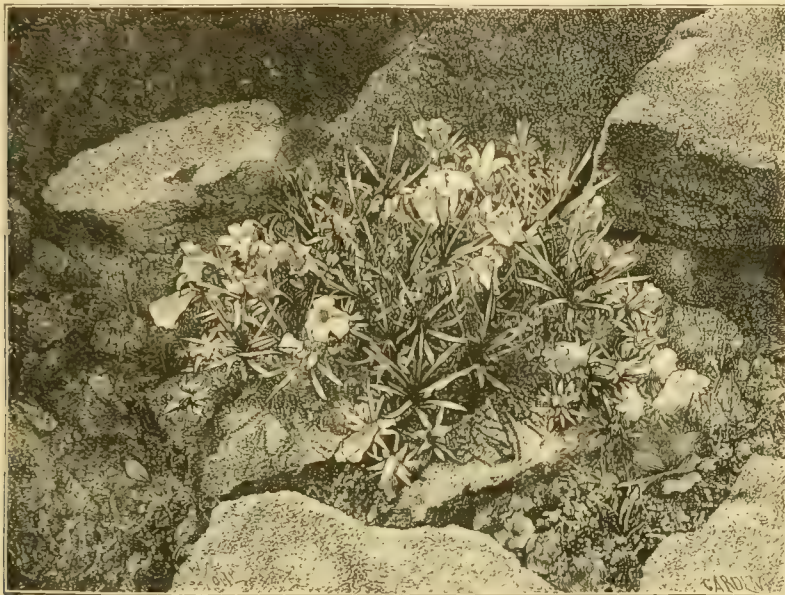
D. K.

THE WEEK'S WORK.

ORCHIDS.

THE time has now arrived when the Orchids will demand our most careful attention, not only to preserve the flowers which are developed, but to encourage the opening of others and the steady growth of the plants. The *Cattleyas* are very

species has pure white fragrant flowers freely produced; the plants are growing freely in the warmest house. Who would be without the queer-looking *Masdevallias*, such as *Chimæra*, *Wallisi*, *bella*, *Backhousiana*, and *nycterina*, which have to be wintered in the cool house? They are basket plants, like the *Burlingtonias*, and require a good deal of moisture both at the roots and in the atmosphere. A rather dry atmosphere, which might suit, and indeed is necessary for *Cattleyas* and *Dendrobiums* in flower, causes the leaves of these plants to become infested with red spider. Thrips, too, will not be long absent under such conditions. If it is necessary to re-basket or divide these *chimæroid Masdevallias*, it may now be done, and *M. tovarensis*, which has now passed out of bloom, should also be attended to. The last-named requires repotting annually. *Bolleas*, *Batemannias*, *Pescatoreas*, and plants of this class will now be starting into growth. They can be grown either in baskets or flower-pots, and should be repotted or placed in new baskets if this is deemed necessary. They require an ample supply of good drainage and to be grown in the *Cattleya* house, especially in winter, but the treatment



Wahlenbergia (Edraianthus) Pumilio.

beautiful and showy at this season; so also are the *Dendrobiums*. There are other curious, interesting, and even lovely Orchids that should be grown in every collection. The *Rodriguezias* or *Burlingtonias* have, I think, not only pretty flowers, but most are delightfully fragrant. Some great Orchid authorities, amongst others Mr. H. N. Ridley, F.L.S., in his botanical report of the Orchid conference, says of them, "Few are showy enough to be deemed worthy of cultivation." It is this rush after the showy Orchids that has allowed many interesting and pretty things to be so much neglected. *B. venusta* and *B. fragrans* are now pushing up their spikes, and should have a warm light position in the house; they are grown in teak baskets well drained, and with a liberal proportion of good freshly-gathered chopped-up *Sphagnum* amongst the fibrous peat. When these plants are doing well the roots push freely through the sides and bottoms of the baskets. The plants do not always succeed, but I fancy the cause of ill-health is allowing the plants to become too dry at the roots. Let them have good peat and *Sphagnum* to grow in—more of the latter than the former. Mix with them clean potsherds and charcoal liberally, water freely when the plants are growing—in fact they may be syringed in summer—and keep them suspended from the roof glass. *B. pubescens* is useful, as it flowers in October or November. This

Cattleyas luxuriate in would soon destroy the *Bolleas*. The atmosphere should be well charged with moisture, and I would prefer a clay floor to anything else. They need to be kept moist at the roots all the year round, the ample drainage preventing stagnation, and although the plants do best near the roof glass, sunshine would soon kill them. A northern aspect is best. *Epidendrum Parkinsonianum* is a singular species, with fleshy pendulous leaves, and can usually be bought at a cheap rate. The leaves hang downward because of their weight, and the plants when attached to a block and suspended from the roof glass will sometimes do well in the *Cattleya* house. The flowers are conspicuous by a distinct white labellum and by the perfume emitted at night. Two sturdy growing Orchids which should be in every collection are *Zygopetalum Mackayi* and *Peristeria elata*. The former may now be repotted. It forms thick fleshy roots, and succeeds better in good fibrous yellow loam than in peat. I have tried it in a mixture of loam and peat, but I find it does better if the compost is made up of the best yellow loam full of tough fibre; plenty of clean broken potsherds, some coarse white sand and chopped-up *Sphagnum* Moss should be mixed with it. Fill the pots one-third with drainage and two-thirds with the potting stuff, pressing it in firmly. Any plants that have grown to a very large size should be

divided. This is easily done, but it is better not to part them out too much; a large plant ought to be made into two or three pieces only. The *Peristeria* flowers in July or August, and will now be in its resting period. It is better to keep it rather dry at the roots until the spikes begin to appear.

The *Calanthes* still make a brave show in the *Cattleya* house, and as the plants pass out of bloom they are laid aside under the stage until it is time to repot them again. I have often alluded to the value of these as winter-blooming plants. *Calanthe gigas*, exhibited by Messrs. Veitch, of Chelsea, the other day, is a magnificent garden variety. The spike of flowers is immense, and the large white blooms, with a lovely rose-tinted lip, are very beautiful. It is a grand addition to the deciduous winter flowering varieties. The pseudo-bulbs are of immense size. *Cypripedium Penelaus* would be an excellent addition to any collection of these Orchids; it is also of Veitchian origin. I find *Cypripediums* are excellent as cut flowers, they last so long in good condition. I cut the other day fresh flowers of *C. villosum* and its variety *Boxalli* with flowers of *C. insignis*. They were cut with long stalks, and, with fronds of *Pteris cretica* intermixed, the effect was excellent. Such flowers will last a month in a cut state. It is too early yet to increase the temperature of any of the houses, and the minimum should not vary a great deal from 45° cool house, 55° *Cattleya* house, and 65° in the warmest house. J. DOUGLAS.

THE KITCHEN GARDEN.

EARLY PEAS.—Cultivators will now have to be on the alert to get their earliest Peas on the move. Not that it is advisable to be in too great a hurry, at least where sowings are intended to be made direct into the open ground, as the condition of the soil must be taken into account. This season it is not at all unlikely that it will be the middle of February before the seed can be sown. But with the aid of glass protection, cultivators will be enabled to make a commencement, leaving the sowing in the open for the first opportunity that offers after the soil is in a fit state. In making preparations for sowing under glass, the evil must not be made of hurrying the Peas on under the influence of heat, or very likely they will be much too forward. Peas badly pot-bound never succeed well. For sowing in pots, the dwarfs, such as *William Hurst*, *Chelsea Gem*, *English Wonder*, and such like are suitable, and should be more relied upon than the early rounds.

SOWING PEAS IN THE OPEN.—Here, as I have previously said, we are at the mercy of the weather as to sow when the soil is in a wet and sticky state is only to court failure. Where there is a narrow and warm south border at command, this is just the place for sowing such varieties as those enumerated above, as on account of their quality they are a decided acquisition. Where it is decided to grow taller varieties the rows must be set wider apart, the intermediate space being reserved for a few rows of Potatoes. These taller varieties may be sown more in the open, but for this early crop select an open spot so as to be well exposed to the sun. In sowing the seed, draw flat-bottomed drills, and if the soil should be lumpy some finer soil should be sprinkled along first, also taking the precaution to dress the seed before sowing with either red lead or petroleum, that is if mice are likely to be troublesome. The soil in any case must be in a fertile and pulverised state, a free use of good manure, burnt refuse, and a little steamed bone flour being just what is needed to impart a healthy growth, and such as will withstand a spell of dry weather when the pods are filling.

LONGPOD BEANS.—Longpod Beans are more often sown in November or early in December than Peas, but in all probability the greater bulk is sown at the turn of the day. In many districts there are fancy dates for sowing, but the condition of the soil from now onwards is the guide to go by. Valuable south borders should not be given up to this crop, but select an open and sunny spot where

the soil is in a free working state, as, unlike later crops, these must not be trusted to rough ground. Beck's Dwarf Green Gem is a good quality Bean, but along with this should be sown a good selection of the Improved Longpod section. Beck's Green Gem should have the rows about 30 inches apart. The seeds may also be sown in pots in cold frames. This plan should be resorted to if the weather should delay sowing in the open too long. Place the seeds two in a $\frac{1}{2}$ -inch pot, or singly in a smaller one. Beck's may have three or four seeds in place of two.

EARLY LETTUCE.—To follow on the autumn-planted Lettuce, but which, no doubt, have been cut very hard by the recent severe weather, it is time a sowing was made both of an approved strain of Cos and also one or more of the Cabbage forms. If there is likely to be a break in the supply this can be easily rectified by forcing, as some of the Cabbage forms force most readily. The seeds if sown thinly in a box of light soil and placed in a fairly warm temperature will soon germinate. As soon as germinated, either the Cos or Cabbage forms, if intended to be eventually planted in the open, must be brought on gently on a shelf near the glass in a cooler structure, but not subjected to cold draughts. Eventually these will also have to be pricked out into a low frame to prepare them for planting out. If for forcing, keep them going steadily in a fairly warm structure.

A. YOUNG.

PLANT HOUSES.

SEED-SOWING.—**AMARYLLIS.**—Those who did not sow any seed in the autumn to keep up a successional stock will do well to lose no more time in the case of this handsome class of plants. Late sowing will mean a correspondingly smaller plant by the autumn following. The seed had better be inserted singly where the supply is limited, each one being placed on its edge to ensure greater success in vegetation. The seeds being of such a flat character, with so much covering to the vital part, yet of a perishable nature, are disposed to suffer if kept at all on the wet side before they are well above the soil. I have sown them on the usually adopted plan of scattering the seeds upon the surface and also by taking the greater pains as now recommended, finding the result all in favour of the latter mode of keeping the seeds edgewise. It makes all the difference between a successful germination and only a moderate one when dealing with the fine hybrid strains now grown. The warmth of an ordinary stove will suffice, bottom-heat not being essential; but a pane of glass should be placed on the top of the pan or pot as a safeguard against mice or other vermin, as well as to avoid watering as much as possible. A shallow soil is best, as it prevents the roots from striking too deeply; hence, when separated, there is risk of injury to them.

GLOXINIAS AND TUBEROUS BEGONIAS, &c.—For an early batch to succeed old bulbs, a pinch of the former should be sown, whilst in any case it is not advisable to defer sowing any longer seed of the latter. A brisk heat will suit in both cases, such, for instance, as where early Melons or Cucumbers are being grown, quick germination in the case of such fine seeds being much better than a prolonged one; but as soon as the seedlings are well above the soil, it is not advisable to hasten them in either instance to an excessive degree, more particularly the Begonias. A finely-sifted soil will be the best upon which to sow the seed. This may very well consist of about one-third silver sand, the rest being well decomposed leaf-mould or a little cocoa fibre with some light loam. If the soil be well watered before sowing, no after-watering should be given if it can be avoided until the seed is seen to be on the move. Covering the pans with panes of glass should always be the rule towards this end. In the case of the Amaryllis, sandy loam and leaf-soil will answer best. Of other seeds an early sowing of *Torenia Fournieri* might be found useful; whilst of subjects not so often raised from seed, note should be made of *Aphelandra aurantiaca* Roezli and *Clerodendron fallax*, both of

which can thus be had in quantity if the seed has been well looked after in the ripening. Those who have none of the beautiful hybrid *Streptocarpus* should also sow at once, but where there is a good stock the sowing can very well be deferred a few weeks longer.

SEASONABLE NOTES.—**INSECTS.**—After such a prolonged period of frosty weather, there will be the possibility of an increase in such insects as thrips and green-fly amongst *Cinerarias*, *Calceolarias*, and *Pelargoniums*. For these a close watch should be kept at such times, as the warmth of the pipes, even if the house or pit be only about the normal temperature, always seems to facilitate their increase. Moderately strong fumigations, repeated two or three times, will be found better than an extra strong one. Do not defer fumigating simply because only a few insects are to be seen; it is better to kill the few than the many. In the stove there may be some green-fly upon *Gardenias* and other plants with the least disposition to grow, whilst the thrips must still be looked after sharply. Red spider also must not escape notice; it will attack several of the Palms, the *Alocasias*, and other plants. For this, sponging should answer, using the syringe more freely where such is possible.

TEMPERATURES.—For the present it is not advisable to make any marked increase; a degree or two more will not do any harm (if the severe weather does not return) in stoves and temperate houses. We may yet have some very cold weather, whilst those gardeners who come within the radius of fog and smoke, instead of the so frequent gleams of sunshine in the country, know full well what such attacks mean upon early growth. Any early forcing should, as far as possible, be confined to close limits when under the influence of fog; what is done may very well be in conjunction with early fruit forcing, that even being a risky process. When the temperature is very low early in the morning it should be raised as soon as possible, but guard against a high standard at nightfall.

SUCCESSIONAL FLOWERS.—This should be looked after to the extent of keeping up the requisite supply, but any excess should be avoided. A few at the time of early bulbs and forced shrubs is far more satisfactory than a larger number. To have to depend for a while upon flowers somewhat stale is at any time bad enough, but when these are forced flowers the case is further aggravated. Any of the early potted *Hyacinths* which exhibit the most prominence should be selected for forcing, the same of *Tulips* and *Narcissi*. Nearly all kinds of these may now be brought on, but the too frequent error of hard forcing should be avoided. It is a good plan to have one batch coming on in a moderate heat whilst another introduced earlier is in an increased temperature. All of these bulbs should be kept as close up to the glass as possible, so as to avoid unduly long stems and foliage which only mean weakened flowers. As the flowers commence to open a slightly lower temperature will be better, more particularly when the plants have to be taken to a conservatory that is kept cool. Too sudden a change is felt by plants as well as by human beings.

J. HUDSON.

FRUIT HOUSES.

HOTBEDS ON VINE BORDERS.—If Vines with their roots principally or solely in outside borders are forced, then ought some attempt to be made to hasten root-action; otherwise if this is not done the chances are that top growth will be so far in advance of root movement, that a serious check will be felt by the Vines just at a most critical stage. A gentle hotbed of leaves and a little stable manure formed on the outside border would warm this up considerably, and have the effect of starting the roots almost as soon as the Vines break. This may perhaps lead to a slightly weaker break, some of the liquified sap being diverted towards the formation of root fibres instead of being wholly concentrated on the top-growth; but there will be

ample compensation for this later on, sap being sent up by the active roots very much earlier than usual. A close watch must be kept on the hotbed, as should it become violently hot in mild weather—as hotbeds are very liable to do—this would quickly injure the roots in the border. These hotbeds also have the effect of attracting roots to the surface, and may well be formed on some Vine borders for that purpose alone. Hotbeds are more often formed inside newly-started vineries than outside. It is found that the vapour and ammonia given off by the fermenting materials soften the bud scales and greatly favour a strong early break. To be effective a portion of the bed ought to be turned every day, fresh heating material being added occasionally in order to keep up the fermentation. After the Vines have broken, less moisture is needed, and it is possible to damage the tender leaves by subjecting them to an excess of ammonia in the atmosphere. It may be still desirable to retain the hotbeds for some weeks longer, and they will do no harm if no fresh material is added, turning also ceasing. The first week in February is with many a favourite time for starting Muscats, and a mild hotbed is of marked assistance in effecting a good even break. First, however, see that the inside border is in a thoroughly moist state, a soaking of warm liquid manure not being wasted on it, and be careful to guard against injury to the roots from over-heating.

PROTECTING EXPOSED VINE STEMS.—All the while the sap is in a solid state it is not often that any injury accrues to the exposed part of the stems of Vines planted in outside borders. Directly, however, the sap liquifies, that is to say, commences an upward movement, there is a great risk to be run if no protection is afforded the stems, a severe frost being liable to completely rupture the sap vessels. If, therefore, there is a considerable length of stem exposed, this should be closely bound round with dry hay-bands and further enclosed by sacking, the latter being necessary for the purpose of keeping the hay dry and non-conductive. Short lengths would be best enclosed by narrow boards nailed together, so as to fit up to the stems, the latter being then well surrounded by dry sawdust. Very short lengths of stem may be simply protected by a mound of leaves kept in their place by a covering of strawy litter. Where the hot-water pipes or flues are close up to the front walls of vineries and the outside borders are raised up to rather higher than their level, this has the effect of warming the outside border considerably. In order to make the most of this heat, in addition to protecting the stems, also cover the border to a distance of 4 feet from the wall with about 18 inches of leaves, with either litter, boards, or strips of galvanised iron on the top to keep the wind from blowing them about.

RAISING VINES.—Ripened canes are most often planted, but newly-raised Vines succeed nearly or quite as well, that is if given the benefit of a start in a warm inside border. Thus if eyes were put in now it would be possible to have strong young Vines ready for turning out of 6-inch or slightly larger pots in May. It is also by no means a difficult achievement to raise Vines from eyes and to grow them to a fruiting size in pots the same season. Either short lengths of wood or eyes are suitable, the latter being most generally preferred. Eyes are simply single buds with about half an inch of wood left on each side of them, this being cut in a slanting direction on the under side. If good fibrous loam or turf is available this may be cut into 5-inch squares, the Grass side being placed downwards, and a small hole made in the centre of the soil large enough to bury the eye in sand. If set on a gentle hotbed, the top heat not exceeding 65°, top and root-growth soon commences, and the young Vines may eventually be planted straight into a border or placed direct into fruiting pots. The older plan of placing the eyes singly into 3-inch pots filled with gritty loam, plunging these in a fairly brisk hotbed, answers nearly or quite as well, the young Vines being shifted into 6-inch pots, and from these either to fruiting pots or borders—in each instance before they become much root-bound.

CUT-BACK VINES.—When Vines are raised and not grown to a serviceable size in one season, these may be cut hard back at once prior to either planting them out or shifting into fresh pots. Dress the wounds with painters' knotting or styptic as a precaution against bleeding, and soon after start in gentle heat. When the buds are bursting, shake the roots clear of the old soil, and either plant in inside borders or else repot, using pots large enough to hold the roots without unduly cramping them and a fairly rich loamy compost, making this firm. Vines thus treated and kept growing in a brisk heat will be well ahead of any raised this season from eyes, and are certainly the best for growing into strong canes for fruiting in pots next season. Not only can the stoutest canes be grown from these "cut-backs," but they will also start into growth more quickly when forced than will the one-year-old canes.

PRACTICAL.

ROSE GARDEN.

NATIONAL ROSE SOCIETY.

NORTHERN GROWERS AND GROWERS ON LATE
LAND & SOUTHERN GROWERS.

TO THE EDITOR OF THE GARDEN.

SIR,—I have carefully read Mr. Grahame's article on p. 16 of your last issue, and also that one published on December 10 (*i.e.*, just three days before the last annual general meeting of N.R.S.). After reading the latter-mentioned one I could scarcely expect to find the writer converted by any remarks from an individual such as myself, because he expressed himself so strongly opposed to the later dates for our metropolitan shows. But I must turn to Mr. Grahame's article published in your issue of the 14th inst. In using the expression northern growers and members (in mine published in your issue of 7th inst.) I really intended to include growers on late land, for I was contrasting those two classes of growers with southern ones and growers on early land. I believe I have seen it somewhere stated (whether correctly or not I do not know) that these two classes of later growers do represent about 30 per cent. of the roll of subscribers to the N.R.S. If those whom I had intended to include only represent 20 per cent. numerically, then they must endeavour to feel 10 per cent. smaller in their own estimation and the more insignificant in the same ratio. I apologise for stating that which was not, strictly speaking, a fact. I am much grieved to find the N.R.S. is only credited with ninety northern members, but I do not expect to see that number increase till a date is fixed for the Crystal Palace show upon which northerners and southerners have more equal chances of exhibiting in an average season in something like representative form. Mr. Grahame says he could not follow my reasoning when I stated that I had "only budded a few of the early varieties (plenty of each), &c." This expression may sound what is sometimes called "Irish," but you will understand me, and so will Mr. Grahame, when I tell you I ought to have written "a few of the early varieties (plenty of plants of each)." I should like to know the names of "many varieties" of first-rate exhibition Roses, particularly Hybrid Perpetuals, that would be of any assistance to me as maiden plants during the first week of July. I prefer cut-backs of such varieties as Viscountess Folkestone at any date, but if I wish to compete in the leading amateur classes (the only ones open to me on account of the number of plants of exhibition varieties I grow) on July 1, 1893, I shall probably have to look to my cut-back plants alone to

supply the necessary blooms (*i.e.*, if there are enough plants in bloom to make them worth looking at). I grow a good stock of all the best Teas and hybrids that do well here, and if my hybrids are not in bloom I cannot exhibit forty-eight distinct varieties that would bear comparison with such Roses as are exhibited by the leading amateurs now-a-days. It will have to be one of those exceptionally early seasons, so seldom experienced, if even my H.P. cut-backs get fairly in bloom by July 1, 1893. I regret that by a slip of the pen I named July 2 instead of July 1 as the date of the next Crystal Palace show, but at the time of writing I was deeply engaged in thought about the last show in 1892. We certainly have some "facilities and advantages" offered to us by N.R.S. as exhibitors, and we have a provincial show! I do not think there would be even ninety northern members if we had not. I am glad such a show will be held so near my abode on July 13 next, but I wish to inform Mr. Grahame that the committee of the Work-sop Rose and Horticultural Society (over which I have the honour to preside) decided unanimously to invite the N.R.S. to hold this provincial show in their town without the aid of any expression of opinion from me beforehand. I sincerely trust that the parent society will never regret having accepted the invitation. I did not know till two days after the annual general meeting upon what day this show would be held. Our Rose and Horticultural Society's show is usually held on, or about July 20, but I am well pleased for the sake of the Rose show that the N.R.S. has fixed upon the date it has. I expect to see growers from north, south, east and west all competing at Worksop in strong force. I expect to see some of those exhibitors who are in favour of an early metropolitan show exhibiting from their maiden plants as well, if not better than northerners (weather permitting). Local thunderstorms, or even tropical heat lasting four or five days, very quickly reverse the expectations and chances of exhibitors. I believe that the latter kind of weather often materially hastens on the blooming season more than some imagine. I will say more: it often affects the chances of growers on light land more than those of growers on heavy clay or loam. Let us hope that the weather will be kind, not only before the show day, but actually on the day itself, and then we may hope to see all Rose districts fairly well represented, not only English counties, but Welsh, Scotch, and last, but not least, Irish. July will not be half over then. The 16th was not too late for some of our best early exhibitors in 1892; why should the 13th be in 1893? Who could fix a better date for a provincial show, so as to enable members from all districts to exhibit (or as many as possible), north and south alike?

Mr. Grahame refers to a grower of Roses in Essex on heavy land, and to his having exhibited Roses as early as June 20; but my Roses are not in bloom so early as those in Essex. I know that the Essex grower exhibited well at Leicester early in August, and I may say that I cut the best twelve Roses (distinct) from my maiden plants that I have ever seen here on the 27th of that very month. Of course, we can prolong the Rose-blooming season to a certain extent by growing maidens, using different stocks and planting in different aspects, on different soils, and so on; but this "lasting power" has nothing to do with our ability or inability to exhibit at the Crystal Palace. What we require is starting power, and if we northerners and growers on late land cannot get our Roses into bloom early enough

for the first Saturday in July, except in very early seasons, such as we seldom have, then I contend that the chances of northerners and growers on late land of showing in anything like representative form are exceptional. We may grow Roses in the north and midlands on the Manetti stock on light land, and we may have plenty of plants of the best varieties, but what is the use of these when Roses will not bloom early enough, in spite of all our efforts? I have light as well as heavy land, and south walls, too, and I have done all in my power to get Roses in bloom for the Crystal Palace shows, but have only been able to do so in exceptionally early seasons. In 1891 I budded 5000 Manetti stocks (besides others) on light land, but was only able to cut from them blooms of two varieties of Roses before July 16, 1892. Your readers must see now that the date of the Crystal Palace exhibition is of grave importance to the later growers, like myself. Neither the Drill Hall nor the Crystal Palace exhibitions can be said to be suitable to northerners as a rule, and although I confess that the later growers find the provincial exhibition more suitable than the other two, still it cannot be compared with the Crystal Palace one. Surely northerners as well as southerners would prefer to show in "good form" at Sydenham rather than at provincial towns, particularly when the classes and prizes are so much more numerous and so much better than at the latter exhibitions. There is no doubt but that the metropolitan dates, as at present, best suit the majority of members of the N.R.S., but it is a question whether or not it would be advisable for the majority to meet the minority half way in a national spirit for the future benefit of the society as a national one.

I am convinced that northerners and growers on late land do not wish to suit "themselves alone"; nor do they wish to discuss what they have done or not done for the society; nor do they claim more consideration than metropolitan members. On the contrary, they ask a favour from the majority that rules them to a certain extent, and that favour is, "Meet us half way when next you fix a date for the N.R.S. Crystal Palace exhibition."

I feel sure that we have some good supporters of the N.R.S. in the north whose names are on our roll of members, and surely there are many enthusiastic Rose growers north of the Trent even whose names we should do well to enlist on the roll of the N.R.S. if only they would join. So long as the later growers are usually excluded from the Crystal Palace show by the earliness of the date we shall never get many of them on the list. I am confident that the northerners do not wish to have two N.R.S. exhibitions to suit them alone to the destruction, or even probability of damage to the later growers' chances of exhibiting in a representative form equal to that of their northern brethren. I wonder whether Mr. Grahame has analysed from the official return the results of the winning exhibits of the N.R.S. provincial show of 1892? If so, I beg to remind your readers that my good friend Mr. B. R. Cant (I believe one in favour of the early metropolitan show date) won the nurserymen's Jubilee trophy, and Dr. Budd, of Bath, won the amateur one, probably with Roses cut from maiden plants. Mr. Grahame mentions the county of Nottingham as being represented by a winning stand at the Crystal Palace in 1892. But how represented? Why, by a neighbour of mine winning actually third prize for "Garden Roses." I think I am right in stating that this was the only winning stand from this county, but if I am not, will

some kind friend correct me? Now as garden Roses are in bloom before all others (here, at any rate), I do not see how a winning stand of the same can suggest to the public mind that Roses, generally speaking, were in bloom in this county. If it could, I wonder why our leading trade grower, Mr. H. Merryweather, of Southwell, was not exhibiting. I will not admit that the Roses of this county of Notts were sufficiently in bloom, generally speaking, on July 2, 1892, to enable an exhibitor of H.P.'s and Teas to set up stands in anything like representative form.

Mr. Grahame writes:—

I cannot see that N.R.S. northern members have any fair ground for complaint, &c. They are in a very decided minority, and the southern members are undoubtedly entitled to a date which suits them.

My reply is, that northerners are not the only members opposed to the early Crystal Palace show date, and that as members as far south as Essex find it too early, it is only natural that those in the midlands and north should find it still more early in proportion, as their Roses are later than those of the Essex growers. Surely the date of the Drill Hall exhibition is suitable to those in favour of the early dates, if suitable to anyone (*i.e.*, if they grow Teas), as well as the Crystal Palace show, and such early growers as Mr. B. R. Cant, &c., could not be said to have been "deprived of their chances of exhibiting in proper form" at Chester as late as July 16, 1892.

Mr. Grahame says:—

The northerners have a provincial show specially arranged for them, and with good prizes given by the N.R.S.

Certainly the date of the above meeting does suit northerners better than the dates of the two first meetings. Good prizes are offered, but, as I have said before, "far better ones at the Crystal Palace."

Mr. Grahame writes:—

The northern members have done nothing for our society which entitles them to more consideration than the metropolitan members.

We do not ask for more consideration, but surely we deserve an equal share with others as members of a national society. If northern members of the committee attended all the meetings of the N.R.S. at Westminster, it would cost them a sum equal to a very handsome subscription to the society.

Mr. Grahame writes:—

They have shown no reason whatever that they should have two Rose exhibitions at dates to suit them alone, to the destruction, or even possibility of damage to southern growers' chances of exhibiting in proper form.

Surely the Roses of the majority of exhibiting members will not be much, if at all, past their best on the Saturday nearest July 6. As a rule the provincial meeting cannot always be called a northern meeting in every sense of the word; for instance in the sense of position when held at Hereford (I do not complain; I should like to see it held in Ireland if possible). Again, it is not northern in the sense of time, at any rate not so much so as to exclude some growers in favour of the early date for Crystal Palace show from exhibiting successfully, owing to the lateness of the date of the fixture. If southerners grew Tea Roses and budded H.P.'s, they might be able to show at all three N.R.S. shows, but not so with the northerner.

We in the north and midlands look upon the Crystal Palace show as the meat in the sandwich, and who can blame us when we ask

to share that meat with our southern brethren? I wish well to the National Rose Society, and I sincerely trust that no remarks of mine will lead anyone to believe that I do not, but I want the society to be as popular in the north as in the south. I have written enough and I hope all will be received in good part. I will stand down and patiently read the evidence of witnesses from all parts of the nation on this important subject pro. and con.

HENRY V. MACHIN.

Gateford Hill, near Worksop.

THE GROWTH OF TEA ROSES.

SOILS, situations, and local peculiarities determine a great deal, and in some degree account for the varied experiences of different Rose growers. Reading the remarks of another rosarian and comparing them with one's own experience frequently reveal some decided differences so great as to be almost unaccountable. Observations, however, of the different growth of self-same kinds upon heavy soil in the south and in lighter soil in the eastern counties lead me to suppose that we err in trying to grow all the kinds under uniform conditions, more especially as regards soil. Now that ardent growers, not of Roses alone, but of other plants as well, do so much towards preparing for them a site and soil as congenial as it is possible to be made, I think it is quite an open question whether a bed of lighter soil than that usually sought after and considered the essential for Rose growing might not be the remedy for so-called delicate kinds and the means of inducing greater vigour. There would certainly be increased ability to withstand low temperatures, because hardiness is very much proportionate to the capacity the soil has for retaining water—at least such is my idea. There is, of course, nothing like uniformity as regards habit of growth, but there is a marked difference between the behaviour of Niphotos as recorded by Mr. Grahame on p. 15 and as it has grown and flowered with me. In my previous notes I have alluded to the fact that, being so largely grown under glass, it came to be regarded as a decidedly tender, if not absolutely worthless, kind for open-air culture, and that this was very far from being the truth. In consequence of the pendulous disposition of the flowers, I made a group in a raised border, and a very pretty one it became. The bushes grew strongly and flowered most freely. The second lot of flowers came finer than the first, and some of them were borne quite erect on strong shoots. I used to think they had much more substance than the comparatively flimsy blooms I had seen under glass, but at any rate, especially towards autumn, in the cooler days the flowers were more lasting. The plants never showed any extra susceptibilities to cold, and they have endured the rigours of all the winters that have passed since they were planted entirely unprotected and without suffering. In a less favoured garden I have seen Niphotos at the foot of a wall growing vigorously and producing fine flowers. Mr. D. T. Fish used to praise Niphotos grown in this way, and I think the majority of rosarians will hardly go so far as to discard it for delicacy or poor growth. Souvenir de Paul Neyron has been mentioned in *THE GARDEN* as a tender, uncertain Rose, but I have always found it the very opposite of this, and, growing in its own way undisturbed, no kind could give a greater proportion of fine flowers than this has always done. My first experience of Innocente Pirola was in heavy soil, where it was most unhappy, but elsewhere it proved one of the very best Tea Roses, and the bushes grew quite a yard high. I am not sure of Cleopatra, but Ernest Metz last year proved that it possessed robustness. There is a danger of a fine Rose such as this being over-propagated at first, and it is a matter of two or three years before it reveals its true character. Ethel Brownlow is held in high estimation by the exhibitors, and I must confess to being astonished with some blooms I saw cut from standard plants in one of the large

Rose nurseries last year. With me, growing as a dwarf, its shoots have always been of a thin wiry character, and the flowers, though well formed, were small, with the lilac tinge rather too pronounced. A. H.

MARECHAL NIEL ROSE.

No doubt this will always be more or less erratic in its behaviour out of doors. A few other Roses are somewhat so, but none to the extent that characterises Maréchal Niel. Good free-growing, constant-blooming plants may occasionally be met with, but generally its behaviour is indifferent, and it does not always readily respond to our endeavours to induce healthy, vigorous growth. Although I have not actually proved the cutting-down plan in the open air after flowering, as mentioned by Mr. J. C. Clarke in *THE GARDEN* of Jan. 14 (p. 15), I tried an experiment in this way, and which perhaps was even more likely to lead to the same result that he sought. It seemed so in my calculations, but I failed to realise expectations. In my case six dwarf plants on the seedling Brier stock were planted in a very favourable position against a warm wall with a south aspect. They were rather close together, and as all made a vigorous growth, there was not room to train all the shoots properly. The idea then occurred to me that perhaps by laying in almost full length the shoots of three plants and cutting the others down to near the ground I might have them in succession, assuming that the cut-back plants would, as the result of their hard pruning, make a vigorous growth to lay in for flowering the following spring. Those that were unpruned flowered well and finely, but the cut-backs only made a weak, puny growth, and therefore quite defeated my object. A variety of circumstances has to be reckoned with out of doors that do not interfere with or influence culture under glass. With so many really reliable first-rate Roses it seems almost a waste of time and space to attempt the growth of Maréchal Niel at all extensively. I have had no experience as to whether it is long-lived as a standard, but it certainly grows very well in this way. A number of standard and half-standard plants that I have seen in Mr. Frank Cant's nursery on several occasions always surprised me with their health and vigour, and they reward him with hundreds of perfect flowers. Nothing like hard pruning is resorted to in spring, but the long strong shoots are brought down more or less horizontally and tied to stakes. So treated they flower almost their entire length. A. H.

FORCING ROSES.

AMONG the many things that are forced into flower annually, very few, I think, require stricter attention to detail than the early forcing of Hybrid Perpetual Roses. The weather during the last week of 1892 and the first week of 1893 has been sufficient to test the ability of any who may have any such Roses under their charge. The very earliest batches, such as were intended to begin flowering at the end of the present month or early in February, would, of course, be just about showing their buds when the recent severe spell of weather began; consequently they were in the most critical stage of their existence. The change also was sudden, particularly in its severity.

In the early forcing of Roses, endeavour to maintain a temperature of 45° to 50°; then all will be well; but do not be alarmed if, with the appearance of the sun for a few moments, the temperature rises to 55° or even more. This will be of benefit to the plants, but on no account admit air. If the sun be more than usually strong at this season, the fire may be steadied for awhile, but be careful this is not too long-continued, as the water cools quickly in such weather and the temperature of the house will rapidly decline when the sun has again disappeared. One very important item

in the forcing of Roses early is obtaining the fullest amount of light, and to ensure this, the glass will have to be washed occasionally to clear off the soot which remains after a dense black fog. Nothing short of hard rubbing will remove this greasy black deposit, which so effectually excludes the light, and nothing is better suited for the purpose than the brushes obtainable from any horticultural sundriesman. These affixed to a handle simplify the washing of glass roofs, having a lad with a coarse syringe to damp the glass in advance, and to return at intervals to rinse what has been washed. During the severe frost it was impossible to do this, as the water froze too quickly; but advantage should be taken of the earliest opportunity, as the plants suffer considerably when light is thus obscured. Fumigation must be done in advance, as it were, to keep insects in check. Once they get the upper hand it is almost impossible to eradicate them without injury to the plants as well. It will be found better, as a rule, to fumigate twice moderately rather than attempt the destruction of the pest at one strong application. A good preventive measure, and one by no means so much in vogue as its effectiveness and simplicity merit, is that of syringing with clear soot water occasionally, making the solution several days before use. Soot is especially valuable in the Carnation house, and young plants I frequently water overhead with it, particularly if red spider exists. Such simple means as these are too frequently overlooked, and those who have not tried the above in the way now suggested should lose no time in doing so. As soon as the buds are well formed and have emerged from the foliage, a little weak stimulant may be given, starting with soot water first, and afterwards about twice weekly, giving some good artificial manure in a weak solution. It will be found advantageous to apply it in a weak state and frequently, rather than in stronger doses at longer intervals. It is also advisable to change the food supplies thus given, and when the buds begin to show colour, stimulants may be discontinued altogether.

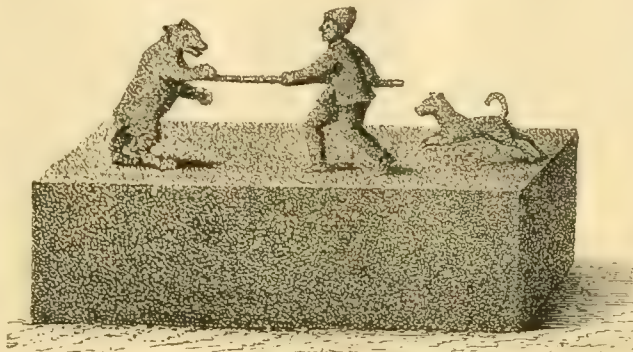
E. J. M.

KITCHEN GARDEN.

FORCING LEEKS.

NOTHING is more natural than the desire to have the best kinds of vegetables available for use at all seasons of the year in addition to those periods at which they are usually produced, and to attain this object, gardeners resort to out-of-season sowings and also to various modes of forcing. But, although it is comparatively easy to force plants of rapid growth, such as Radishes or small Lettuces, it may be readily understood that it is not quite so easy to do this in the case of plants which are slow and tedious in growing, as Leeks are for example, these taking, in the open ground, eight or nine months to arrive at their full development. In consequence of this, Leeks have for a long time been grown to only half their full size, or even smaller, for home consumption or for sending to market, and in the following manner:—

From September 15 to September 20 sowings are made of the short thick Leek, which is named "Poireau chaud," in beds, the seed being scattered very thinly, as no transplanting follows. It is covered in by raking the soil over it, and the bed is then beaten flat with the back of a spade. The market gardeners often sow over the Leek seed a little corn salad



Example of old tiliary work. (See p. 61.)

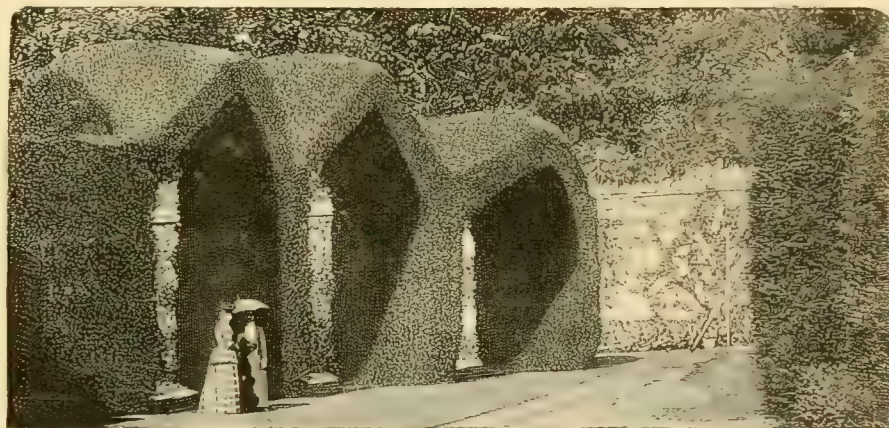
(which comes up and is gathered off during the winter), covering the seed of the corn salad by sifting some fine soil over the beds. When the young Leeks have made some growth they are thinned out, leaving a space of 2 inches from plant to plant, and are watered just sufficiently to keep them progressing in good condition until the month of March, when, after the frosts are gone, they are watered more copiously, the beds at the same time being carefully kept free from weeds.

During the first fortnight in May, the young Leeks which, it must be said, are not very large and have not much white stem, are taken

size. This was grown much in the same way as those already described, but the plants were set more closely together in the beds and were taken up for use earlier. The seed was sown in a hotbed in the latter part of December or during the month of January, and the seedlings were pricked out at the beginning or the middle of March, either in sloping beds in a favourable position or in hotbeds which had just been cleared of other kinds of vegetables, and from which the lights or coverings were removed as soon as the young Leeks had struck root. These were planted about 2 inches apart every way and very deeply in the soil, so as to leave only very little of the white part of the stem overground. These Leeks were fit for sale in June and July. They were not very thick, but having been planted closely together, the crop was quite as heavy as that from an equal area in which the plants, although individually thicker, were set at greater distances apart from one another.

At the present time we can have in the course of the summer white-stemmed Leeks as fine and thick as those which used formerly to be seen only late on in autumn. To obtain these the very large Rouen Leek is employed. This is now more and more grown by the Parisian market gardeners for the very earliest supplies, as it is the quickest variety in forming and more speedily increases in thickness rather than in length of stem. It is cultivated in the following manner:—

The seed is sown rather thickly in a hotbed from the end of December to the middle of January. As soon as the seedlings are up air is admitted more or less liberally, according to the prevailing temperature, in order to prevent the seedlings from becoming drawn, but at the same time taking care to give no check to their growth by exposing them to the effects of very frosty weather. Under all cir-



Clipped arches. Engraved for THE GARDEN from a photograph sent by Lady Headfort. (See p. 61.)

up either for private use or for sending to market. Sometimes this Leek is sown very thinly under frames or cloches, together with the very short red frame Carrot. The seedlings in this case also are not transplanted, but simply thinned out, and after the Carrots have been gathered off, the Leeks are sold just as they are, at the same time as those raised by the first-mentioned method. Leeks raised by this latter mode are called by the market gardeners "Poireaux de semence."

For a long time the variety of Leek named "Poireau long d'hiver de Paris" was forced in hotbeds for sale in market when, like the last-mentioned, it had reached about half its full

cumstances the frame must be covered with mats every evening.

About the end of March or, better, some time in April, the seedling Leeks, although still of no great strength (being seldom more than a quarter of an inch in diameter) are fit for planting out. For this purpose some good strong ground should have been well dug and worked at the close of the winter, and in this beds are laid out, the surface of which is well broken up and covered with a layer of well-rotted compost about 4 inches deep, which is then forked in. Rows 10 inches or 12 inches apart are then drawn in the beds, and in these the Leeks are planted out 6 inches apart. If

possible, a cloudy or even rainy time should be chosen for this planting out. The young Leeks are lifted from the hotbed in handfuls at a time, then, cutting off the ends of the leaves and of the roots, as is always done in planting Leeks, the stems should be buried deeply in the soil, that is, nearly up to that part of the stem where the leaves commence to open out. The bed should then receive a good watering and afterwards, when the Leeks have taken root firmly, the bed should be hoed and watered frequently—in dry weather copiously. Leeks are gross-feeding plants, and if it is desired to have very good specimens of them, their growth should be assisted by frequent waterings of liquid manure made either from rape-cake, dried night-soil, or powdered fowl or pigeon-manure dissolved in water. The best way to apply it is to draw a furrow between every two rows in the bed, and into this pour the liquid manure; any residuum of it that remains on the surface can be covered with soil by drawing the hoe over it.

No one will be surprised at the efforts which are made to obtain fine Leeks for the greatest possible part of the year, for they are certainly amongst the best kinds of vegetables that are grown, serving not only to make the excellent soups which everyone knows and likes, but also forming one of the indispensable ingredients of the "pot-au-feu." Formerly, for a long period, Leeks constituted one of the best winter dishes that one could meet with, at least in country places; I mean Leeks served up *à la sauce blanche*. They cannot, of course, be compared to Asparagus as regards delicacy of flavour, but all through the winter a very savoury and inexpensive dish can be made with them, all the more welcome because other kinds of vegetables are then either very scarce, or, in some cases, not to be obtained at any price.—*Revue Horticole*.

Scarcity of Lettuces in early spring.—After such severe weather as we have just experienced there will be a scarcity of Lettuces during the next two or three months, as even those plants stored or planted out in cold frames when not much frosted have in many instances suffered from damp, as it has been impossible to admit light and air. Those who have a daily supply of green salad to send to table will do well to prepare for fresh supplies by timely sowing in frames, choosing an early quick-growing variety of the Cabbage type. A small quick-bearing kind, such as Veitch's Golden Queen, should be chosen. This forces readily and is of dwarf compact growth. Harbinger is also excellent for sowing in heat in boxes and cutting in a young state. This system is one that could often be made available in cases of a deficiency, sowing the seed in boxes and cutting in the same way as Mustard and Cress. Of course, the produce is small, but for the salad bowl it is equally useful, and in the early part of the year much appreciated. For the supply of single Lettuces a few plants pricked off into boxes or in a frame of the varieties named soon turn in.—G. WYTHES.

Beet Cheltenham Green-top.—At page 14, "I. M. H." finishes his excellent note regarding Beet by saying that Cheltenham Green-top grows too large and does not do well with him. I am very fond of this variety; indeed, I have advised its use in the pages of THE GARDEN, and, like the writer of the above note, I had the same difficulty when I sowed it on good land. I find it best to sow it on rather poor ground. I never sow Beet till the second week in May, and find by so doing I get just the roots desired—neither coarse nor forked. When sown too early or on rich land I do not know of a worse kind for forking and splitting, but treated as advised it is all that can be desired. I consider the flavour superior to that of Dell's Crimson and the colour is very good. The

Cheltenham Green-top I have now grown for twelve years, and find no other kind to equal it for flavour. This kind originated in one of the large market gardens round Cheltenham, where immense quantities are grown for the midland markets.—G. WYTHES.

EARLY BRUSSELS SPROUTS.

THE value of a few rows of early sprouts is great where a variety of choice vegetables is required. I am well aware that some persons object to early sprouts before the frost has mellowed them, as it is termed, but much of this is owing to the method of serving or cooking and to the way they are grown, as though we have not too much praise to bestow upon cooks in general in the way of making the best of the garden products, to a certain extent want of space, insufficient moisture, and feeding are at times the cause of poor vegetables. Early sprouts are at times strongly flavoured often through being boiled too long in one lot of water. If when partially cooked the sprouts are given fresh boiling water the strong flavour will be removed and a better colour imparted to them. Of course it is a little more trouble. Not only sprouts, but many other vegetables need similar attention. By sowing early it is also objected to that the sprouts are too coarse or large. This can be avoided. I do not like large sprouts, though they seem to be much appreciated by the market people. Large sprouts soon fill the basket, but are not so good as a smaller bullet-like growth, hard, and without waste. To get a medium-sized sprout the grower should eschew the sorts recommended for size or length of stem; they are no doubt profitable to the large grower or for exhibition, but for the latter purpose they are now even less grown. When Brussels Sprouts are served at table a miniature Cabbage is not expected, as it is impossible to serve these large kinds to the best advantage, so that in private gardens much of the delicacy is lost when large coarse kinds are grown. There is very little trouble in securing a few early plants if seed is sown at the end of January or early in February. I prefer to sow on a mild heat, that is, a bed made up with fresh leaves early in the year and allowed to settle down before sowing the seed. Others may not have similar accommodation, and may only require a small number of plants. In such cases a single box of seed may be sufficient, but with the latter greater care is required, as often the smaller quantity if placed in excessive heat is brought on too rapidly, with the result that the plants are weakly from the first and cannot give a fair return. When sown in cold frames the plants are sturdy, and better able to withstand our cold winds in the spring. I have previously advised a dwarf variety, and for years have grown Paris Market, a dwarf early, small, solid sprout of good flavour, but no doubt there are others equally suitable. Another important point is sowing thinly, as there are more plants ruined by thick sowing than anything else. Early transplanting is also necessary, lifting with as much care as possible. In exposed positions much can be done in the way of shelter by drawing deep drills before planting out, in all cases using a trowel to preserve all the roots possible. Another equally important point is deeply-dug ground with plenty of decayed manure. During the early autumn months in case of drought, a good soaking of water or liquid manure occasionally will do much to remove the strong flavour often objected to. I would also advise ample space at planting; a yard between the rows is none too much, and 18 inches or even 2 feet between the plants. G. WYTHES.

Asparagus forced by tan.—At the meeting of the R.H.S. last week there was an interesting exhibit by Mr. Balderson of Asparagus forced by tan without any other heating agency. Of course, the forcing by tan or spent bark is well known, but it rarely occurs that such results are secured as to get choice vegetables so early by using tan as the heating medium. Mr. Balderson covers the tan with enough soil to counteract the great heat and

moisture before putting on the Asparagus roots. Quantities of roots could be forced annually where tan is procurable, as it costs little and is of great value, and retains the heat for a long time. In all cases if a great body of tan is used there should be sufficient depth of soil put over the tan before the roots are placed in their forcing quarters and another layer over the crowns of the plants forced. If this is done there is little danger. On the other hand, if left exposed on the surface the growth is weak indeed, often much injured by the heat arising from the tan.—S. H. B.

A good garden Potato.—Raised by some village cultivator at Fontenay-sous-Bois, this variety was first sent out by MM. Forgeot under the well-deserved name of Belle de Fontenay, and subsequently, when its merits were recognised by MM. Vilmorin, it was admitted by them into their catalogue. It is a productive and early kind, coming in at the same time as the Royale or even the Marjolin, handsome in appearance, being long and well proportioned in shape, with a smooth, yellow skin. The flesh (like that of all true French varieties) is of a pure butter-yellow colour, and the quality is first-rate. The tubers, when lifted, keep firm and good for a long time in winter and are slow in germinating; they can, consequently, either be planted for the earliest crop, or later on as a main crop for autumn and winter use.—*Revue Horticole*.

THE CULTIVATION OF VEGETABLES.

A GENTLEMAN who is intimately connected with the culture of vegetables recently remarked, "I observe that of the numerous papers to be read before the Fellows of the Royal Horticultural Society during the ensuing year only one is devoted to vegetables." He might have added, and only two specifically to fruit. In regard to vegetables, it is very doubtful whether in these days young men in gardens have anything like the needful opportunities offered them to become expert cultivators. Nearly all their time is expended in houses, in the flower garden, or in the domestic decorative department, and thousands of these youths who are looking forward to become some day head gardeners have the most imperfect knowledge with respect to vegetables through no fault of their own, but because they have so few opportunities. Fruit culture is perhaps better understood because so much of it now is performed under glass, but outdoor culture still remains to many an unexplored field. Perhaps next to vegetables there is no department in which young men have opportunities to learn so little as of the hardy flower garden, for very few indeed can undertake the sole charge of hardy flower gardens, rock gardens, &c., and be fully familiar with hardy plants, their names, requirements, &c. So far as relates to vegetables, there are few head gardeners who have not found it of the highest importance that a good supply of these should be furnished all the year round. Even in the dead of the winter, when the ground is locked in frost and snow, it is held imperative that an abundance of vegetables be furnished, and what cannot be supplied naturally must be furnished artificially. It is easy enough just now to have plenty of Asparagus or Seakale, provided during the spring and summer ordinary courses were adopted in the one case to maintain a succession of roots, and in the other of root stems. But there is far more ability needed to furnish these root or stem stocks than is required for the successful forcing of them. It is easy to go to the store and obtain ample supplies of Potatoes in the winter when there, but it requires some knowledge to grow a large and healthy crop of good tubers and to properly store them. We find it easy enough in

winter to cut heads of Savoy Cabbages, Broccoli, Kales, or to gather Brussels Sprouts; but there would have been none to gather now had not judgment been properly exercised in the sowing of the seed in the spring, the proper putting out and culture of the plants. The same may be said with respect to all kinds of garden roots. Too many persons are apt to think that anyone, however ignorant, can grow vegetables. That is not, I am sure, the opinion of our leading gardeners who do grow them well, and who know not only how much of skill and experience is required, but also how very important to them in their places is that knowledge. Even in connection with our exhibitions, too often any encouragement found in connection with vegetable classes has been furnished in the shape of prizes offered by seedsmen, and although no one doubts but that these prizes are given for trade purposes, yet have they in the past done wonders in promoting better-class vegetable culture, better selection of sorts and higher appreciation of what constitutes quality and beauty in vegetables than formerly existed. It is to their credit that our rural cottage garden exhibitions do far more for vegetables than do many of the pretentious or high-class societies. A.

Autumn Mammoth Cauliflower.—When recently in Hampshire one of the best vegetable growers in the county told me that he had never before seen such superb white and perfect Cauliflowers as were the heads of Sutton's Autumn Mammoth shown at Winchester in November by Mr. Best, of the Vine Gardens, Basingstoke. I am not surprised that such encomiums should be uttered, as when I saw the variety growing at Reading last autumn I could not but notice how very fine a strain this was, and how perfectly white were the heads. The yellowish tinge so often found in the old Autumn Giant was lacking, whilst the heads of the former from plants raised from seed sown at the same time and subject to the same treatment were much larger and more evenly so. That may not be a recommendation in all cases, but then the large-headed sort may be cut earlier than smaller ones, and that is much in favour of the Autumn Mammoth.—A. D.

Dwarf Gem Brussels Sprouts.—I saw this variety growing in a garden recently in company with some of the taller exhibition and Matchless varieties. In common with these sorts, the sprouts were somewhat loose and open, because grown in such very deep rich holding soil. That is far from being the best condition for the successful production of good sprouts. I prefer hard soil, which causes the stems to grow more slowly and be harder also, in that way producing very hard medium-sized knobs or sprouts on them. But the Dwarf Gem form, which is some 6 inches to 8 inches shorter than are the tall growers, is specially suited for small gardens, where it may be planted out more closely together than can tall ones. Under proper culture on hard firm soil and got out early, the stems reach about 18 inches in height, and are clothed from bottom to top with close-set solid sprouts that are not so strongly flavoured as are larger ones. Any good breadth will give sprouts from October till the end of March.—A. D.

The longest Cucumber.—I note the query by "W. A. P." as to a Cucumber attaining the length of 6 feet 2 inches. This would not be a Cucumber in the general acceptance of the term. More than likely it would have been a specimen of the Snake Gourd, which will reach that length when well grown. I very well remember to have seen a remarkably long specimen of this latter member of the Cucurbitaceæ family some years ago in a large group of Gourds, &c., shown at South Kensington. Even if it were a Cucumber there would be no advantage in the length, but a decided disadvantage, unless we are to cut off as much as may be re-

quired for each day's consumption, a plan not likely to be adopted by any practical gardeners. Long Cucumbers are not of any use for the supply of a gentleman's table; two at least of moderate size may be grown where one long one is produced. A Cucumber of from 15 inches to 18 inches in length is infinitely better than one of from 24 inches to 30 inches. Large Melons are really fine ornaments to the dessert, but long Cucumbers are no advantage whatever, and where a constant supply is kept up they will rarely be found. It is true that large Melons may not be of such fine flavour as those of medium size, but they serve a useful purpose; whereas the long Cucumber does not, and the less we see of the latter in private establishments the better in every respect. Cucumbers are frequently allowed to hang too long before they are cut; they are much better in flavour whilst the seed is still in the embryo state; when cut in this condition the plants will continue to bear much longer.—GROWER.

SHORT NOTES.—KITCHEN.

Pea Wordsley Wonder.—Like "W. I." I am surprised that Wordsley Wonder has not become more popular. It is with me an excellent second early, growing and bearing freely, Peas being just the right size when cooked. Its long narrow pods are crammed with Peas to almost bursting point.—A. Y.

Pea Telephone.—"W. I." in his article at p. 23 says that the above Peas are yet indispensable. True, it is a good grower and bears freely, the pods being of large size, although the size would lead one to expect that more would be inside than there is. My reason for calling attention to it is with regard to its edible qualities when cooked, as I have heard more complaints of this than any other, it being far too sweet.—A. Y.

ORCHIDS.

ERIOPSIS RUTIDOBULBON.

THIS plant has long been known to be a native of Colombia, where it is said to be found growing on the stems of Palms in the province of Antioquia. I have received a small plant of it from Hermann Haak for a name. He says his friend found it growing in the full sunshine, and thinks it must be new, as he has never seen such a curious warty pseudo-bulb. I have known the plant about forty years. It was first discovered by Purdie, well known as a collector for the Royal Botanic Gardens at Kew, and is stated to grow at between 4000 feet and 5000 feet altitude, so that it would not appear to require great heat. This *Eriopsis* I have found to revel in strong sunshine, and I think if it were to be subjected to a brighter light, it would be more easily grown than it appears to be, for it has always been a difficult plant to manage. When seen in flower it is really a beautiful plant, and I trust H. Haak will be successful with the plants he has, and that we shall have the pleasure of seeing the plant more often than we have hitherto done. The only example that I have seen of late years is in the collection of Sir Trevor Lawrence at Burford Lodge, Dorking, where I saw it flowering. The flowers, which are borne in a dense raceme, which is erect and arching, springing from the side of the pseudo-bulb at its base, are each nearly 2 inches across, sepals and petals nearly equal, orange-yellow in the centre, the outer part being of a reddish brown. The side lobes of the lip are large, erect, dark reddish brown, the middle lobe white, spotted with blackish purple. These flowers are very conspicuous and they last a considerable time in full perfection if properly cared for. I have seen it treated as a pot plant, but I fancy it does better in a basket. The pot or basket must be well drained,

using good brown peat fibre from which all the fine soil has been beaten, mixing with it some clean chopped Sphagnum Moss. This plant during its period of growth appears to enjoy a liberal amount of moisture both to its roots and overhead. I like to hang it up near the glass and to let it have the full sun, saving just through the hottest period of the day, at which time the thinnest shade is sufficient. During such weather as we have been recently getting I like to take it down to the level of the stage, for I think it is a plant easily affected by too low a temperature, and in the winter I think 55° is quite low enough for it, whilst in the summer it may be kept in a good heat with plenty of moisture. WM. HUGH GOWER.

White Lælia anceps.—A magnificent form of this plant now lies before me from the collection of Mr. J. T. Gabriel, Palace Road, Streatham Hill. It is apparently between the varieties *Stella* and *Williamsi*, the sepals and petals being round and full, of good substance and pure white, the lip also being white, the side lobes on the inside lined with crimson-purple. It has not the radiating streaks of purple on the front lobe.—W. H. G.

Megaclinium purpuratum.—"H. B." sends a specimen of a plant from Western Africa which I take to be this species. The fact is the genus is but imperfectly known, and it is difficult to decide. The scape is flattened, green, speckled with brownish purple, bearing the flowers on either side down the middle. The flowers are small; in fact, I could make nothing of them with the naked eye; but upon using a powerful glass, I see they are yellowish white, freckled with reddish purple. It is an exceedingly curious plant, nearly allied to the West African *Bolbophyllum*, and as it does not require much space, it deserves to find a home in your collection, which you say is not confined to showy plants.—G.

Cypripedium insigne Amesianum (H. W.).—This is a beautiful flower, with somewhat of the shape of *C. Maulei*, the dorsal sepal having the whole upper portion pure white, the lower part green shaded with brown, the lower sepals large, similarly coloured. The petals, too, are more deflexed than in the ordinary forms and beautifully undulated on the margins, the lip yellowish. This is one of the varieties imported by Messrs. Pitcher and Manda, of New York.—H.

Odontoglossum crispum (fine variety).—I have received from Mr. S. Kerslake, who has charge of the Rev. E. Handley's collection at Bath, one of the most beautiful flowers of this species I have seen. It has very broad sepals and petals, both much undulated, the latter being dentate and of the purest white saving a few spots of chestnut on the sepals; these, too, on the outside are faintly tinged with rose. The lip is white with a large blotch of chestnut in front and a few smaller ones beside the yellow crest. I am told there are nine flowers on the raceme. The flower sent measures just upon 4 inches across.—W. H.

Cypripedium Constableanum.—This is a new hybrid raised between *C. Fairrieianum* crossed with *C. Dayanum*, and it approaches nearer to *Fairrieianum* than do any of the hybrids raised from it. Leaves short, pale green, faintly tessellated; flower at present small; dorsal sepal incurved, whitish, flushed and veined with apple-green, lower sepal small, green; petals white flushed with pale green and marked with lines and dots of purple, the ends reflexed and lined with hair on both upper and lower edge; lip green flushed with brown. This beautiful hybrid has been raised by Messrs. Pitcher and Manda, of Short Hills, New Jersey, U.S.A., and is named by them in honour of F. A. Constable, of New York City.—W. H. G.

Lælia alba varieties.—I have received from "T. O." several forms of this beautiful old plant, which has now been grown in our gardens for about sixty years. It is astonishing what a quantity of this species has been imported from Mexico,

for it never has been, and it is not now a plant that is retained long under cultivation. Four of the flowers sent represent good forms of the typical plant, which is always charming. No. 1 is the variety *bella*, which has the sepals and petals of a soft rose, becoming deeper at the tips, the lip wholly deep rose. No. 6 is the variety *sulphurea*, the flowers being pale yellow. This species, although so well known and so long cultivated, does not last above three or four years in our collections, so that the finer varieties are soon lost.—W.

SHORT NOTES.—ORCHIDS.

Lælia superbiens (dark var.) (D. M.).—This is a very good form of this plant, but inferior to the fine form called *Quesneliana*, grown in the collection of Mr. Gaskell, of Liverpool. Yours is a very dark form of the typical plant and is flowering very early. The flowers, too, last a considerable time in full beauty.—G.

Aeranthus grandiflorus.—This plant is nicely in flower with Mr. Seeger at Dulwich, and it proves to be a much better plant than I had given it credit for, producing a succession of blooms, which are very sweet and creamy white. This genus comes very near to *Angraecum*. If the flowers of this plant had a tawny colour, they would have many admirers. It is a native of Madagascar.—W. H. G.

Dendrobium Cassiope.—This fine hybrid appears to be flowering very freely with Mr. Cypher, of the Queen's Road Nursery, Cheltenham, judging by the quantities of blooms sent me. It is one of the most beautiful kinds that I know. It is a cross between *D. japonicum* and *D. nobile albiflorum*, the blooms, which are of good size, being pure white, saving the dark maroon blotch at the base of the lip.—W.

Phalænopsis Schilleriana splendens (J. H.).—This is a grand variety of this beautiful species. You say there are a dozen blooms on the spike, but I think I have seen this same variety carrying more flowers when Mr. R. Warner had his fine lot of plants at Broomfield Lodge some twenty-two or twenty-three years ago. I am very glad you have taken the Moth Orchids in hand, and shall be glad to hear from you occasionally respecting them.—W. H. G.

FERNS.

FERN NOTES.

OLD PLANTS *versus* YOUNG ONES.—When one compares the small or decorative stamp of plants as grown by the trade with those of a similar character to be usually seen in private establishments, there is a great disparity in the two as it relates to the freshness of the growth, speaking in a general way. This failing, methinks, results from two distinct causes. One of these may very fairly be designated the "avoidable," whilst the other, in contradistinction, can be suitably termed the "unavoidable." I will deal with the avoidable first. Gardeners in private places are at times given to the mistake of retaining their plants too long. I mean by this that, instead of casting aside a plant when it has either become exhausted or is too large for its purposes, it is retained, to manifest disadvantage. If the plant from any cause has lost vigour and is so weakened as to need considerable nursing to bring it round, then I say it is better not to waste time over it, but to look to a younger stock to supply its place. Instead of doing this, however, the old plant is, even if ever so shabby, still kept on with hopes of complete recovery in due time. The room now-a-days in nearly all cases is far too valuable to countenance this mode of procedure. Shabby or half-starved plants are no ornament, whilst they occupy space and time also. Thus, for instance, to grow on a young stock of the decorative species of the *Pterises*, the

Davallias, and the *Aspleniums* is much better than retaining the same number when they have attained to the limit of size in any given case. Healthy and growing plants are much to be preferred to starved and stunted ones. Then, too, there is the matter of room, the larger plants occupying valuable space, yet oftentimes not so useful or so ornamental as smaller ones. The overcrowding in itself being injurious to all soon makes a bad matter a worse one. The moral of this is to always have a few plants of a kind coming on to supply the places of those that are losing their attractiveness. In doing this one need not fear if an old plant or two is killed at times through hard usage in a cooler house or in unsuitable positions. There is to my mind a deal more pleasure to be had in plant culture by growing on a young stock than there is in retaining such in a healthy state when the limits as to size are reached. When there only happens to be one or a few at the least of

tial; whilst on the other, quite the opposite is the case. This difficulty is furthermore added to by the construction of the houses in which the plants are grown. In this the trade grower has the decided advantage as houses are now built, the contrast between the average run of plant houses in private establishments and those devoted to trade purposes being so palpable as to convince all that have any practical knowledge of their construction. In private gardens where the houses are old ones, their construction is oftentimes such as to render the cultivation of small or medium-sized plants almost an impossibility. It must not, then, in such cases be wondered at if gardeners cannot produce such satisfactory results as their more fortunate brethren in the trade. For instance, the beautifully compact, neat and useful plants of the *Pteris* family, as grown in nurseries, could hardly be got with twice the ingenuity devoted to their cul-



Italian garden at Mr. H. H. Hunnewell's, Wellesley, Mass., U.S. America. An example of modern and ugly clipping of trees of naturally good form. (See p. 61.)

any given kind, each one has, of course, to be kept for further increase. In most cases of Fern propagation, speaking of kinds best known and most useful, the increase by means of spores, by division or offsets is comparatively easy; as it relates, however, to the increase by means of spores, sufficient advantage is not at all times taken by gardeners to keep up a stock of young plants to succeed others.

In dealing with the other aspect of the question, "the unavoidable," it must be borne in mind that plant culture of any description is rendered very much easier where such large numbers of any one given kind are grown as to lay claim to a house exclusively to one species, or to such collectively as thrive well under the same conditions. This it is hardly ever possible to do in a private garden, hence the large trade grower has always in this matter a clear advantage. One's difficulties are considerably increased in growing in one house several plants whose special needs are widely divergent. Moisture and shade on the one hand may be essen-

ture in a private garden. The growth in the latter would be in most cases more attenuated, giving the idea that the fault lay in the treatment alone. What refers to the *Pteris* does also to many of the *Adiantums* and to the *Gymnogrammas*; it is next to impossible to get the same results in one case as in the other. In private gardens it will oftentimes pay to grow small Ferns in heated pits where they can be got close to the glass rather than keep them at that stage amongst other and larger plants. This I have seen done with good results in more than one case; shelves also, where possible, might be made use of to the same ends. In the case of those who grow largely to supply the market, the object is to have the plants as good as they can possibly be got in small pots. To effect this some growers feed the plants to such a degree, that when they do change hands there must soon follow a decline in the healthy look of the plants. Rather than buy the most vigorous-looking plants, I would prefer those which

have a hardy look about them, even if they be not of such a deep green shade or with such large fronds. The more natural the treatment has been, the better will be the results afterwards. DOODIA.

NOTES OF THE WEEK.

Narcissus monophyllus is a lovely plant, and when in vigorous health one of the most charming of early spring bulbs. To get it thus early, all you want is the protection of a cold frame and the bulbs potted up early in August. It requires no forcing whatever.

The Caucasian Snowdrop (*G. caucasicus*), which Baker in his "Amaryllideæ" makes a subspecies of *G. nivalis*, was lately noticed in bloom in the Royal Gardens, Kew. *G. caucasicus* may be described as a large *G. nivalis* with broad glaucous leaves and in its best forms somewhat larger flowers. A plant well worth growing on account of its earliness.

The winter Windflower (*Anemone blanda*), which has for some time been showing buds on the surface, has at last broken through, and we have now this species fully open. What a delightful spring flower, and so early as to make it almost indispensable for the rock garden. It will continue more or less in bloom from now until its near ally (*A. apennina*) appears.

Anemone fulgens has not escaped the late severe frosts, although no harm may be done so far. The mild weather late in the year started them growing, and now all the leaves have been so severely cut by the sharp frosts last week, that the plants will have to push up new ones to take their place. Many plants have been damaged in this way, and we fear some few are past recovery.—D.

Cyclamen coum, kept in pots in a cold frame during winter, is delightful in early spring. In the open it would not be in flower for a month or more yet, but potted up and protected, we not only have it early, but we have the leaves and flowers clean. Grown in pots or pans, with from six to a dozen corms in each, it forms one sheet of bloom, the bright reddish purple flowers amongst the dark green kidney-shaped foliage being very pleasing.

Hybrid Brier Roses.—I shall be glad to know if the hybrid Brier Roses which you figured in last week's issue are in the trade.—H. N. ELLACOMBE, *Bicton*.

—We observe with much pleasure your handsome plate of hybrid Sweet Briars in last week's GARDEN. It may interest your readers to know that we purchased a set of twelve of the best of these novelties from Lord Penzance last summer, including the varieties illustrated.—KEYNES, WILLIAMS & Co., *Salisbury*.

Mistletoe.—IN THE GARDEN of January 14 a writer on the above subject wants to know how many other kinds of trees bear this parasite. In the Prater it is also found on *Populus alba*, *P. nigra*, *P. fastigiata*, *Acer campestre*, *A. pseudo-Platanus*, *Robinia Pseudacacia*, and on *Salix*. We have very hard weather here, with snowstorms followed by clear nights with about 13° below zero (Fahr.).—LOUIS KROPATSCH, *Jan. 20*.

Erica codonodes.—What a pretty shrub this is for winter-flowering out of doors. The branch sent you herewith is, as you will see, covered with flowers. It was cut in the Exminster Nurseries of Messrs. Robert Veitch, of Exeter, where in spite of full exposure and 15°, 18°, and even 23° of frost it is now in full bloom. It cannot be too highly recommended on account of its hardiness.—F. W. M.

*** It is a charming shrub, but we find it gets killed in the home counties except in favourable positions. Some of our readers may perhaps tell us how it fares generally in our climate.—ED.

Fremontia californica.—It may interest W. Wickham (page 38) to know that *Fremontia californica* has flowered well for many years near here. It is trained on the south side of my sister's house, and has had no protection in winter.—GEORGE F. WILSON, *Heatherbank, Weybridge*.

—I have just read Mr. W. Wickham's note on this fine plant in THE GARDEN of Jan. 21 (page

38), and as it is supposed to be difficult to grow, allow me to say that from my experience I could not have judged it to be so. Some years ago there was, on the west side of the wall of the herbaceous ground at Kew, a fine specimen, which used to grow and flower freely, its large, saucer-like, yellow flowers being very ornamental. It had grown to the top of the wall in a few years, but was killed during a severe winter. Let those who can get this plant take heart therefore, remembering its somewhat tender character. Seeds I have always found bad, but seedlings have been raised. It is a plant I should much like to have, and I should be glad to make an exchange for it.—R. IRWIN LYNCH, *Botanic Gardens, Cambridge*.

—Mr. Wickham, in referring to this handsome shrub in your last issue (page 38), says that he knows only two places in England where it succeeds well—one in the Isle of Wight, the other in Cheshire, both near the sea. I may here state that also in Cornwall and Devonshire good plants may be seen. There is a large plant in the gardens at Scorrier House, Cornwall, and at the Royal Nurseries, Exeter (10 miles from the sea), Messrs. R. Veitch and Son have a plant growing in a half-shady position against a wall with a westerly aspect. This has now been planted out four or five years and is making good growth, although it has not yet flowered. Attempts at propagating it by layers are being made, which will probably prove successful. Perhaps the finest plant in the British Isles is in the garden of the Rev. H. Ewbank, Ryde, I.W. It was my good fortune to see this in bloom last summer. The plant, spreading 20 feet or more against a wall, was covered with its large yellow blossoms, and presented a beautiful picture.—VISITOR.

The Wych Hazel (*Hamamelis arborea*) is one of the most interesting shrubs in bloom in the Royal Gardens, Kew. Each of the branches is covered with the golden-yellow flowers, made richer by contrast with the crimson calyces. Visitors to the Royal Gardens will find several young specimens planted in a bed of *Gaultheria procumbens* near the rock garden. This bed was such a pleasant picture of colour, that, although we have before made note of the Tree Wych Hazel, we have done so again to draw attention to its beauty in midwinter. The best position for it is one that is sunny, and where the soil is light without being in any way poor. *H. arborea* is quite the best of its family. Those who have large gardens should thus plant it freely, and take a lesson from the way it is used at Kew.

Foster's Snowdrop (*Galanthus Fosteri*).—A new species of recent introduction from Amasia, Asia Minor, where in favoured spots the bulbs are said to be as large as Daffodils. Under cultivation for only two years the bulbs are increasing in size wonderfully quick. It is a really charming spring bulb, amongst the earliest to bloom, its large green leaves and globular outlined pure white flowers being especially attractive, and at the same time marking it as a really distinct Snowdrop. Imported bulbs, however, appear to be extremely variable, and we will have to weed out carefully before we can expect to get the best strain in our gardens. The flowers of *G. Fosteri* may be compared to the largest blooms of *G. Elwesii*, the leaves broad, strap shaped and bright green, not glaucous, as in that species. Max Leichtlin says this is the king of Snowdrops, and with this we quite agree.

The late severe weather.—During the last few days I have closely inspected the green crops in the kitchen garden. It is only too evident that many of these have suffered very much. It is too early to say what are killed outright. Old Cabbage stumps are all dead, many Broccoli are much injured, all the big leaves of Spinach are destroyed, but the plants look well enough, and if we get milder weather will start away again. Early kinds of Broccoli, such as Penzance, where protected by dry Sweet Pea haulm are not killed. Cabbage and other Lettuces are all dead where in the open. Couve Tronchuda, although reputedly tender, has stood better than Brussels Sprouts. Parsley, again, is all destroyed where not protected.

It is astonishing what a little protection does for this crop. Having a row under a west wall, I covered it with a little rough Grass, and now this is as fresh as if there had been no frost. Turnips of the white kinds are much damaged; White Chirk Castle is as fresh as ever. Chou de Burghley has come through safely so far. It is clear after having had about 30° of frost we should begin to look forward, by sowing the seeds of many vegetables under glass, to have plants ready to put out when the weather changes.—DORSET.

Apples from Cornwall.—Herewith I send you samples of several sorts of Apples, not for their size or grand appearance, because I could send much larger fruits of most sorts, especially of the Blenheim, but for you to test and give your verdict upon their eating and keeping qualities as compared with imported Apples. I have many other sorts, all keeping as well as those sent, and if you think a few particulars as to my mode of gathering and storing, which is somewhat different to what is generally practised, of any interest, I shall be very pleased to supply them.—WM. SANGWIN, *Trelissick, Truro*.

*** If Apples as handsome as those Mr. Sangwin sends were plentiful in our markets, there would not be much hope for American fruit. The Blenheims are pictures, and we doubt very much if any Apple in the world is so good for stewing, roasting and eating as the Blenheim when well grown. The Sturmer is admirably grown. Nothing can beat these Apples for flavour; the only curious thing is that the southern parts of this country, which are so fit for them, as Mr. Sangwin by his fine fruit shows, are not used for the purpose. A great deal of very poor fruit is imported annually. It has the advantage of being carefully sorted and barrelled and comes to the market with its best face. Mr. Sangwin would oblige us by telling how he preserves them, because we are sure some of our best kinds are spoiled by the common way of preserving them in fruit rooms which are far too hot and dry.—ED.

Early flowers.—A few days of mild weather and genial sunshine have had a marked effect upon the hardy flowers. *Galanthus Imperati*, *G. Elwesii*, and other early kinds are in bloom; so also are *Crocus Imperati*, *Iris alata*, and the pretty little *I. cyanea*, a small form of *I. reticulata*. *Crocus Olivieri* is also very bright, and odd flowers of *C. Sieberi* are also fully expanded. The winter Aconite (*Eranthis*) is later than usual, only just opening its golden buds. The earliest *Narcissus* of the year so far is represented by nearly open flower buds of *N. maximus*, from roots collected between Dax and Bayonne. The scapes were a foot high when the frost (17°) came, but it does not seem to have harmed them, although they lay frozen and placid on the hard ground for days under the snow. The winter flowering yellow Jasmine (*J. nudiflorum*) never better than this season was cut off and the tassels of the *Garrya* are not so fine as usual, nor are the *Hellebores* generally so fine. *Daphne Mezereum* is opening its early buds, both purple and white, but the most distinct of all flowering shrubs is *Hamamelis japonica*, the dull brown leafless branches of which are thickly set with golden wiry-petalled blossoms quite unlike those of any other shrub known to me. So far it is evident that there will be some fatalities, *Cordylina australis* and *Phormium tenax* having in some cases been cut to the ground. The cause would seem to be the dull and wet autumnal weather rather than the actual intensity of the frost. Growths were unripe and watery, hence more readily affected by the cold than after a hot and dry season of growth.—F. W. B., *Dublin*.

—After a spell of cold, how quickly the growth of the earlier flowering plants proceeds. Scarcely a fortnight has elapsed since the hard frost began to break up, and already many things are in full beauty. First of all comes *Iris histrioides* a spreading patch of several dozen, producing an effect which would be delightful at any season, but doubly so in January; this is one of the very best *Irises* ever introduced. *I. alata* has been giving occasional flowers since November; the leaves of

this are an added charm. *I. reticulata* major has one or two open flowers, but will not be in full beauty for several days yet. How much superior this is to the typical *reticulata*. *Galanthus Elwesii* is in full flower, and is the earliest spring species. Several kind of *Crocus* are fully out, but *C. Imperati* makes the bravest show; in the Grass, about the borders, amongst stones or sloping banks, anywhere, everywhere it asserts itself, not alone by its quiet colouring, but by its delightful perfume also. The golden *Aconites* light up shady corners, and the deeper golden yellow of *Colchicum luteum* attracts everyone by its intense colour, while the distinct and beautiful pure white *Colchicum arenarium* seems to be a plant which no visitor has previously seen. *Hamamelis arborea* and *H. Zuccariniana* are highly attractive. The young leaves of *Rosa acicularis* are quite 1 inch long, while the flower-buds of *Nuttallia cerasiformis* are showing.—T. SMITH, *Newry*.

THE LATE MR. JAMES SHEPPARD, OF WOOLVERSTONE.

A CORRESPONDENT sends us the following notes regarding this well-known gardener, whose death we briefly noticed in our last issue:—

He was for the last 36 years in charge of the gardens at Woolverstone Park, Ipswich. The estate has recently passed into the hands of Mr. C. H. Berners, who succeeded his father, the late Captain Hugh Berners, R.N., and is one of the largest and most beautiful in Suffolk, as it extends for several miles along the banks of the river Orwell. During the period that Mr. Sheppard was gardener he carried out many important alterations and improvements, and the whole place is characteristic of the state of perfection to which the art of modern gardening can be brought by a skilled man. Mr. Sheppard had an abhorrence of anything artificial in the planning of pleasure grounds or gardens, and that he was clever at landscape gardening is indicated in many directions. The heating arrangements of the houses are the work of his hands, as also the water supply to the garden and village, forced up by rams a mile or so distant. Mr. Sheppard was a frequent contributor to the columns of the horticultural press, served on the fruit committee of the Royal Horticultural Society, and yearly acted as a judge at the leading metropolitan and local shows. He was also well known as an exhibitor, especially in classes for fruit. He was last winter selected by the technical instruction committee of the East Suffolk County Council to lecture on horticulture, but was stricken down with his fatal illness—cancer of the stomach—before being able to quite complete this season's course of instruction. He was always anxious to do all in his power for the advancement or good of those under him. Kind-hearted and genial, considerate and thoughtful for others, he endeared himself to every one with whom he came into contact. He was held in the highest esteem by his employers both past and present, from whom he received many marks of approbation.

The funeral took place on Friday amidst every sign of widespread sympathy and regret, and the church was filled with mourners, many of whom had come long distances to pay their last tribute of respect. The shell and coffin, the latter of polished Oak, with handsome brass plates and mounts, were made on the estate by the express wish of Mr. and Mrs. Berners, who had shown the sufferer the utmost kindness during his painful illness. The coffin was covered with beautiful wreaths and crosses, and the sides of the grave were lined with branches of Yew, Fern, and white flowers.

The Gardeners' Orphan Fund.—The committee met at the Horticultural Club on the 20th inst., Mr. William Marshall in the chair, when the following special donations were announced: H.R.H. the Princess of Wales, £10 10s.; the Scottish Horticultural Association, £5; Mr. H. Herbst, who is a perennial donor, £1 1s.; Ware Horticultural and Mutual Improvement Society, £1 11s. 6d.; and Mr. W. Whittaker, Stocklands, Bridgewater, 10s. Collecting boxes: Mr. G. Fennell, Fairlawn, Tonbridge, 10s. 6d.; Mr. H. J. Jones, Ryecroft, Lewisham, £2 10s. 6d. A letter was read from Col. Stanley Clarke, private secretary to the Princess of Wales. This was in reply to one sent to the Princess by Mr. John Wills, in which H.R.H. was pleased to signify her willingness to become the

patroness of the fund. The following resolution was unanimously passed, "That the best thanks of the committee be given to Mr. John Wills for the invaluable services he has rendered to the Gardeners' Orphan Fund in securing the influential support of H.R.H. the Princess of Wales as patroness of the fund." Mr. Wills, who was present, acknowledged the vote, and suggested that a special circular, announcing the fact of the Princess of Wales having become the patroness of the fund, should be sent to a number of the nobility and gentry, soliciting their support for the same. This was concurred in, and a sub-committee appointed to prepare and issue the circular. An application was made on behalf of a child, who having reached the maximum age ceases to be a charge upon the fund, for a grant from the committee towards completing his education. As this was outside the scope of action allowed the committee by the rules, the application was refused. Application was also made to know if the child of a subscriber of seven or eight years could be placed upon the fund without election. The secretary was instructed to reply that all applicants must stand for election in the ordinary way. A donation of £5 from Mr. G. Cooke was announced. A draft report and balance-sheet were considered and adopted for presentation at the annual general meeting on February 3.

OBITUARY.

REV. FREDERICK TYMONS.

IT is with much regret that we have to record the death of the above well-known amateur gardener, which took place a week or two ago at his residence, Baskin Hill, Cloghan, Co. Dublin. His loss is really the breaking of a link between the older school of florists and the new one, for although Mr. Tymons had long ago relinquished the culture of his once favourite flower, the Auricula, he kept up a small collection of choice Tulips to the last. He possessed a delightful old garden, full of interesting plants of many kinds. Of late years hardy herbaceous plants, bulbs, and alpine plants succeeded to his love of florists' flowers, and he was especially proud of his collection of old-fashioned Roses, which included the true Rose de Meaux, Coeleste, and others not often seen. All the Moss Roses did well with him, and over one of the garden doorways a yellow-flowered variety of *Lonicera sempervirens* used to blossom very freely. Snowdrops and Cyclamens grew around the Ash tree boles on the lawn, and in spring the large clumps of Colleen Bawn Daffodils were very beautiful, while later in the year the white Martagon Lily formed groups the like of which are rarely seen. For many years Mr. Tymons was a patron of the Dublin Horticultural Society and a constant exhibitor at its shows, but at all times his greenhouses were gay and effective, for he loved his flowers more than the prizes they might happen to gain for him. A few years ago he made an extensive rock garden, on which many rare alpine plants did well, and which nearly to the last were a source of pleasure to him. He had made some progress in rearing seedling Daffodils, and was especially successful in growing *Disa grandiflora*, *Vallota purpurea*, *Crinum Moorei*, and several white-flowered kinds of *Phyllocacti*.

At one time Mr. Tymons frequently acted as a judge of Auriculas and other florists' flowers at the English exhibitions, but of late years his health failed and he had become more or less an invalid. His death at the comparatively early age of fifty-three will be regretted by the many friends and gardeners who knew him.

Italian oil jars.—In your notice recommending the use of large Italian oil jars you say they had better be moved into a greenhouse in winter. This would be a great practical difficulty. A hole has to be bored in the bottom with great care in order to let out the water. This weakens the pot, which is very heavy of itself, and it then has to be more than half filled with stones for drainage,

and moving the pot twice a year would soon finish it. The better plan is to remove the half-hardy plant in the autumn if it is worth saving, putting in for winter ornament some small hardy shrub like Box, Aucuba, or Euonymus. I plant mine fresh every year generally with Veronicas, as they flower late in the autumn days when flowers are scarce. The oil jars are to be got at any of the good Italian shops in London, and as they are cased in wickerwork to come from Italy, they can be sent anywhere by rail. The boring of the hole is the only real difficulty. The shape of the pot, too, would prevent any plant being healthy for long, as the roots would fill out at the sides and the pot is too much closed round the top to be able to receive the soil, and there is too little air.—M. E.

The weather in West Herts.—The past week was the first mild one that we have had here for five weeks. The ground, however, still remains very cold. Indeed, it was not until Tuesday last that any change whatever took place in the temperature of the soil at 2 feet deep. Previous to this it had remained constantly within 3° of the freezing point for eighteen consecutive days. At the depth of 1 foot, however, the ground is now more than 3° warmer than it was a week ago. The winter Aconite came first into flower in my garden on Tuesday, or one day earlier than last year, and nearly three weeks earlier than in 1891.—E. M., *Berkhamsted*.

Names of plants.—*J. Fisk*.—1, *Adiantum Willesianum*; 2, *Asplenium formosum*; 3, *Blechnum cartilagineum*; 4, *Alsophila procera*.—*P. Hammond*.—1, *Acacia diffusa*; 2, *Utricularia Endresi*; 3, *Scutellaria ventenati*; 4, *Gardenia citriodora*.—*G. C.*—1, very good form of *Dendrobium nobile*; 2, impossible to name with certainty from pieces of growth, send flowers and we will be able to help you.—*J. Streeter*.—1, *Cypripedium Haynaldianum*; 2, *Odontoglossum constrictum*.—*T. Goodman*.—1, *Lælia anceps Stella*; 2, *Odontoglossum asperum*; 3, *O. Coradinei*.—*F. C.*—1, *Cattleya labiata*; 2, *C. labiata Percivaliana*.—*Dartford*.—1, *Odontoglossum Pescatorei*; 2, too much shrivelled; 3, *Odontoglossum Rossi*; 4, *Lælia anceps*.—*C. W., Leeds*.—1, *Odontoglossum Cervantesi decorum*; 2, *O. Alexandræ*, nice spotted variety; 3, *Dendrobium Phalanopsis*; 4, *Cypripedium calurum*.—*G. Arnold*.—*Epidendrum ciliare*, a very fine variety.—*J. B.*—Send when in bloom.—*C. Jesmond*.—1, cannot determine, too dried; appears to be a small-flowered *Epidendrum*; 2, *Oncidium Forbesi*; 3, *Cypripedium venustum*; this I think is the very best form in cultivation; 4, *Calanthe vestita*, yellow-eyed variety; 5, *Odontoglossum constrictum*.—*T. Hubbard*.—1, *Cattleya Percivaliana*; 2, *C. amethystoglossa*; 3, *Oncidium Phalanopsis*; 4, *O. flexuosum*.—*S. Johnston*.—1, *Lælia anceps Hilli*; *L. a. Percivaliana*.—*E. J.*—1, *Odontoglossum blandum*; 2, *Cypripedium sythetense*.—*G. C.*—1, *Odontoglossum pulchellum majus*; 2, *Lælia anceps alba*.—*G. Lott*.—*Lælia autumnalis Fosteri*.—*H. W.*—*Cypripedium insigne Amesianum*.—*T. Gibson*.—*Asarum europæum*.

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No. 1107. SATURDAY, February 4, 1893. Vol. XLIII.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare.*

FLOWER GARDEN.

THE ROCK GARDEN.

CHOOSING THE SITE FOR A ROCK GARDEN.

If asked to name an ideal site for a rock garden on a large scale, I should say without hesitation: Give me an old disused quarry, facing east or west, far away from trees, yet so situated that it might be easily connected with the park or pleasure ground. Such a chance rarely happens, but when it does occur it would be a pity not to take advantage of it. Doubly desirable is such a site if suitable stones for rock building can be obtained on the spot and if the surrounding land is of a fertile nature. In such a case the ugly part can be transformed into an excellent rock garden on a grand scale at but little trouble or expense. Many of the larger stones, too, might even be left in the careless positions into which they fell during the blasting and excavating operations; while for the easy construction of picturesque ravines, caves, and rocky steps, the most enthusiastic rock gardener could desire no better place for showing his ability and artistic taste. It is not at all necessary that a rock garden should be visible from the dwelling-house. A garden which can be seen entirely from the windows of the house must become monotonous sooner than one which reveals new delights or even pleasant surprises on closer inspection. Even a rock garden in a small pleasure ground might suitably be so situated as to be only partly visible from the house. Perhaps the worst of all sites for effect is close to a straight terrace wall. In such a position it is almost impossible to produce a harmonious blending between the straight architectural work and what should be an imitation of Nature's work, unless the terrace slope is not of the usual "railway embankment" character, but undulating. In the latter case a very natural effect may be produced by scattered groups of rock emerging at irregular intervals from the undulating slope. Although in most cases it would be desirable to have the rock garden at a considerable distance from the house, there is an exception to this rule when the house abuts against a steep slope, which, for some reason or other, could not very well be removed, but which does not block the view from the windows of the house. In such a case an alpine garden close to the house might not only be very desirable, but is, perhaps, the most effective way of dealing with the slope in question.

In choosing a site for a rock garden, however, we have not only to consider the most effective position, but also the most practical, viz., one suitable to the plants to be grown thereon. As alpine plants, wherever possible, should enjoy the right of undisputed preference, the site chosen for an alpine garden must above all things be suitable to the requirements of the mountain plants. It must, therefore, have as much light as possible and be far away from trees, which might not only overshadow them, but send their hungry roots into the crevices prepared for alpine. Especially dangerous are large Elm trees. An excavation made perhaps

50 feet or more away from such trees will reveal the fact that the ground is full of roots which could on no account be allowed to encroach on the reserved ground allotted to the treasures of the higher altitudes. Where the conditions are such that it is impossible to make any excavations for a rock garden without coming into contact with the roots of more or less distant trees, a deep narrow trench should be made and filled up with cement concrete, which, when hardened, would be an effectual barrier against the hungry roots. Often it can be so arranged that this concrete wall is at the edge of a path, where it could not in the least interfere with the irregular design of our alpine garden. Many people shrink from the idea of forming a rock garden because their garden is flat and uninteresting. But this is all the more reason why it should be made more irregular. Even if the ground is perfectly level, it is—provided there is plenty of light—nevertheless, suitable for an alpine garden on either a large or a small scale. If the work is to be on a small scale, a rocky bed or two rising from the flat ground in a natural manner will not be at all amiss. But if the work is to be of a more extensive character, the irregularity can be easily produced by excavating in one place and filling up in another. Assuming, for instance, that the chosen site is a perfectly flat lawn, the area might then be sunk say 3 feet or 4 feet, and the greater portion of the soil thus obtained used for filling up another 3 feet or 4 feet, thereby producing a difference of 6 feet or 8 feet between the highest and lowest parts. Sloping ground is, of course, always preferable, not only because it is more adapted for a picturesque display, but also because it affords greater facility for drainage. In most cases we will have to make the best of the ground whether it be sloping north, south, east or west. But where a choice of various aspects occurs, a gentle slope towards east or west would be preferable for choice alpine. Many plants, it is true, like the full sun for at least the greatest part of the day, but if planted against a slope facing due south they are apt to become scorched during very dry weather, although they may succeed remarkably well after having once become established. An abrupt slope facing due north can only be used for shade-loving plants, but if the slope towards the north is very gradual and gentle, it will be found an excellent position for alpine from the highest altitudes requiring a cool and moist position. Much will in every case depend on circumstances, and the laying down of any hard and fast rule for the formation of a rock garden is impossible.

F. W. MEYER.

Exter.

(To be continued.)

Border Auriculas.—It is gratifying to see that the Auricula is grown more largely as a border flower, or as an edging to beds filled with other spring things. In the London parks they are well grown, Battersea Park in particular, and where a good selection is made for the purpose the flowers look well. It is essential, however, to get a satisfactory strain, and when the plants are raised from seed they should be first flowered in a reserve bed, so as to pick out the varieties of strong and decided colours. An edging or bed is spoilt by the quixotic mixtures one sometimes sees, weedy washy-coloured flowers mixed with those that if placed by themselves would make a gay display. The flowers should be large, held well up on a sturdy stem, and the colouring decided. Shades of claret, maroon, and violet predominate, and make up very effective beds to give colour to the garden

in spring. The seed may be sown in February, sowing it in the usual way in pans filled with light soil. When large enough to prick out in the open, prepare a bed in a moderately shady and moist spot, where the plants may be allowed to flower. It is then possible to pick out the most effective varieties, and in this way to maintain a good selection. The border Auricula is so easily grown, and the colours so rich and beautiful when the varieties are good, not forgetting their sweet fragrance, that it is a pity more care is not taken to get together really effective and showy varieties. When care has been taken in this matter, one sees plants crowded with bloom, and as showy almost as a coloured Primrose.

THE BOG GARDEN.

WHERE this has been established for several years the soil need not essentially be considered either worn out or sour, and even if known to be worn out, that would not necessarily imply sourness. Sourness may be easily detected, either by smell or by an examination of the points of the roots of the plants. The more practical question which occurs to my mind is, are the plants at present fairly healthy? If not, have they ever been so since they were planted? If they have and are dwindling in vigour, the possibilities are that the roots have a faulty medium. Whether that be owing to an over-abundant and stagnant moisture or the worn-out condition of the compost may be easily ascertained by digging to the bottom and carefully examining a section so exposed.

I think that we should always in making artificial bogs give a liberal admixture of both powdered and lumpy charcoal, so as to somewhat correct or modify the effects of decomposition, such as must take place in an abnormal way from the simple fact that when an artificial bog is made up or put down the material is of the same degree as regards decomposition from top to bottom, and the gases from the lower portion may be otherwise than beneficial to the roots of some plants, especially if the bed of soil is of considerable depth.

To explain the point another way, a deeply prepared bog bed made chiefly of partly decayed vegetable matter is a totally different thing both mechanically and chemically to a natural bog. In a natural bog we not only find that the humus is added in small proportions year by year, but that the rankness is modified by being on the surface and having the action of sun and air for a whole year, when, in its turn, it is overlapped by a fresh layer, and so the process goes on. The charcoal somewhat helps to counteract the effects of the wholesale decomposition that permeates the whole bed of an artificial bog. I have always found those bog gardens most successful that have been commenced in a somewhat deep excavation where the bottom has had a good layer of free loam, and where for a beginning the humus or peaty soils have not been thicker than 5 inches or 6 inches. This is really, I believe, to the benefit of the plants, and it enables the cultivator to year by year put on a thick layer, say 2 inches of useful mulching in the form of fine peat and chopped Sphagnum mixed with a portion of sand, or even turfy loam. This mulching is at once of value to the plants, and convenient by way of preventing evaporation, and supplying on natural lines a fresh quantity of plant food.

I think it is also too often overlooked that were artificial bogs properly made they would require very little, if any, special provision of water. The low situation and the character of the soil should almost collect and retain the needful amount of wet. Of course, something would here depend on the aspect in relation to sunshine, and also on the water-loving character of the plants grown. But generally speaking, for such things as Bamboos, Cyrtopodiums, Calthas, &c., an artificial bog, properly constructed and with moisture-holding material should not require much in the way of a special supply of water. I believe that this opinion as to water supply will be doubted by many, but I ven-

ture to boldly state it as warranted by some years of experiments. It is a common practice with me now—although my garden faces south and is much too dry for many things—to grow so-called bog plants in ordinary borders by simply surrounding the roots of such plants, or incorporating with the ordinary soil, some rotten Sphagnum and peat of such a character that it remains in the ground like rags of sponge for a year or two. It acts like a sponge, holding a large supply of wet, which is ready in a dry time to be given off by a natural process to the surrounding and drier parts. It is because I have proved so well the usefulness of this plan that I speak with such confidence on the formation of an artificial bog.

J. WOOD.

PLEASURE GROUND NOTES.

FLOWER-GARDEN work has been practically at a standstill since a few days before Christmas, and as there is very little prospect at present (January 18) of making much headway in that department, those are to be congratulated who were able to make a good start during the last months of 1892. It is indeed a safe rule to push on all work, on herbaceous borders for instance, through November and December to fill gaps, to make any alterations necessary owing to mistakes made in the height of different things, and to divide and increase specialities. All work of this kind if left until the frost is well gone may very probably have to stand over for another season. Wall plants will require a little attention and may often receive the same when other work is not practicable. Many wall plants of old gardens are of little merit, nor would they be used now for a similar purpose. We have big old plants of *Benthamia japonica*, of the Judas tree, of *Pittosporum*, and of *Asimina triloba* that are interesting enough in their way, but the flowers are either totally insignificant, as in the *Benthamia*, novel without being attractive, as in the *Asimina*, and comparatively short-lived, as with others named, whilst in no case is the foliage sufficiently attractive to warrant their use from this particular standpoint. The *Wistaria sinensis* for a long stretch of wall, some of the best of the climbing Roses, of the *Ceanothus*, the *Cydonias*, *Forsythias*, *Escallonias*, *Honeysuckles*, and one or two of the *Spiræas* are samples of far more attractive types of wall plants. A variegated Buckthorn or two and an occasional evergreen *Magnolia* can be added to give additional greenery. Among deciduous wall plants one can hardly ignore *Chimonanthus fragrans*, of which we have here two distinct varieties, the flowers of the one nearly double the size of those of the other. No hard and fast rule can be adopted in the annual pruning of all this race of plants; they are sometimes as severely handled as a Peach or Morello Cherry, cut and nailed with mathematical precision, but this is a decided mistake, and it is better to err on the other side, especially with some things really more adapted to bush form, but which are often found on walls. *Weigelas* and *Deutzia crenata* fl.-pl., for instance, may be allowed to grow out wherever practicable until they assume a half pyramidal shape, having the wall as the perpendicular. As a general rule it is safe to follow in pruning for deciduous things removal of thin, weakly growth, keeping always plenty of strong, sturdy young growth with a slight spurring in. For semi-evergreens, as *Ceanothus* and *Honeysuckles*, only so much heading back as is really essential to keep them within bounds is requisite, whilst those things likely to be cut rather freely during the flowering season, or for their foliage, as some of the *Escallonias* and the *Buckthorns*, will get by this means all the pruning necessary.

In outlying parts of the pleasure ground, now that all autumn leaves are cleared away, we shall take the opportunity of throwing one or two quarters of big old *Rhododendron ponticum* to open up fresh peeps through the trees and to increase the density of the undergrowth. This practice of throwing old stuff is not so much followed as it might be, but it is absolutely necessary if the covert has to be lowered and yet the greenery retained. I re-

member a place where the owner wished to head down a lot of *Rhododendrons*, reduce them in fact from 20 feet to between 3 feet and 4 feet, and issued instructions to cut them clean off at the latter height, with the result that when the debris was removed all that met the view was plenty of stumps with a very considerable amount of bare earth. Some years would necessarily elapse before the shoots that broke away from the old cut-backs would by successive layering furnish all the bare ground, and as the latter was voted unsightly, a lot of time and labour was spent in planting the greater part with seedlings. The necessity for this is, as I have said, entirely obviated by cutting the old stems partly through at the required height and bringing them gently to the ground, and if the operation is carefully performed there is seldom any loss. I have gone through several large quarters where the greater part of the stuff was from 15 feet to 20 feet high, and have hadly had occasion the following season to remove a single dead piece. The old stems always break away again below the cut, and young wood thus furnished can be utilised for filling gaps; few of these will be found if the tops are thrown carefully as they are cut. *Rhododendron ponticum* more quickly furnishes in this way than Laurels, although the latter may also be operated on successfully. If, however, there are any rabbits, they will be almost certain to attack the laid Laurel stems, and if the bark is gnawed round, there will be a goodly collection of "dry bones" to gather up after the foliage is all gone. There can be no doubt that *R. ponticum*, where it thrives freely, is the very best covert plant if rabbits are numerous. It springs up by the thousand with us, and the seedlings transported with a small cake of earth grow away at an amazing pace. To furnish any bare space quickly it is advisable to take small seedlings some 8 inches or 9 inches high that will pull up readily and plant them thickly not more than a foot each way. The operation is necessarily a long one if a considerable area has to be planted, but the end justifies the means.

Claremont.

E. BURRELL.

HARDY WHITE FLOWERS FOR CUTTING.

THERE is a great demand in most households for cut flowers, and those of hardy perennials seem to be increasing in popularity, if one may judge from their frequent use in houses of all classes. A few of the more important and useful kinds with white flowers it may be profitable to the readers of THE GARDEN to enumerate, and all the following are easily grown, thriving in ordinary soils and situations. It will be easier to take them alphabetically, and first come the *Achilleas*, of which space may be found for three kinds: the double Sneezewort (*A. ptarmica* fl.-pl.), *A. mongolica*, and The Pearl. All are delightful flowers for cutting, of the purest white and free blooming. The least known is perhaps *A. mongolica*, which grows about 3 feet in height, the pure white flowers produced in dense corymbs, similar in this respect to *A. ptarmica*, but individually the flowers are much larger. If there is only space for one *Achillea* I should select this kind or The Pearl. A good bed of *A. mongolica* would supply plenty of white flowers in early summer. One of the most useful of all hardy plants is *Anemone japonica alba*, which should be grown largely by all who wish for white flowers in abundance. It commences to bloom at a time when there is need of white flowers, and a succession is maintained until the season of frosts. The culture of this beautiful perennial need not be dealt with, as it is well known, but to save groups in the garden from being touched it would be well if in the reserve plot this *Anemone* was planted simply to give cut flowers for the house or other purposes. Very useful is the St. Bruno's Lily (*Anthericum liliastrum majus*), which should be grown in a sandy loamy soil, and a good mulch of manure each year would promote the production of flowers in greater abundance. *Campanula persicifolia alba* and the double variety fl.-pl. may be named, also the white form of *Centaurea montana* named *alba*, whilst

such herbaceous *Chrysanthemums* as *C. maximum* and *C. latifolium* may be named, large clumps and colonies providing a profusion of flowers which can be used in ordinary decorations, although perhaps not sufficiently refined for choice arrangements. The white variety of the common Goat's Rue (*Galega officinalis*) is amongst the best hardy plants for supplying white flowers, very easily grown, and attractive in the garden. We may include here *Gladiolus The Bride*, which, if the position is not too cold, may be planted out in the border with success, although usually grown in pots, but a reserve bed of this for cutting will be found of great use, the flowers pure white, and very useful for wreaths or for the best bouquets. The spot selected should be moderately sheltered and the soil light warm loam, the time to plant the corms being either autumn or spring. If the former season, it is wise to place a little protection over them in the event of severe weather occurring, which is often hurtful. One must not omit the feathery *Gypsophila paniculata*, the small white flowers, arranged on the thread-like shoots, so fine are they, being made great use of in many gardens. It will grow in ordinary soil and likes a sunny spot. During the winter season the Christmas Roses form a useful group, the variety major or the Bath variety being of the greatest value. When the flowers are required simply for cutting, reserve a portion of well-prepared loamy soil for the plants, and as the flower-buds show, place over each clump a hand-glass, which will protect the blooms from rains and fogs. In large gardens, of course, clumps will be lifted, placed in baskets filled with cocoa-nut fibre refuse, and the flowers brought on under glass, where they open remarkably pure and fresh. Thriving clumps will supply plenty of bloom, but they should rest a season before being again forced. *Lupinus polyphyllus albus* is a splendid white-flowered perennial, growing in ordinary garden soil and sending up a profusion of bloom of great value for cutting. It is too well known to need any description, and forms one of the chief things in the present list. The Arabian Star of Bethlehem (*Ornithogalum arabicum*) is a fine border flower, pure white, and should be more commonly seen in gardens. The flowers are large and very handsome when boldly used in the house. The *Pyrethrums* supply a few white-flowered varieties, but perhaps the best of all is the now fairly common *Aphrodite*, which is very full, pure white, and remarkably handsome. One does not want a large selection when cut flowers only are required, and this kind will be as good as any of the white sorts. Far removed from this in aspect is *P. uliginosum*, which gives welcome bloom late in the summer and early autumn, and in the majority of gardens large masses of this are grown. Of the *Spiræas*, mention must be made of *S. astilboides*, *S. filipendula* fl.-pl., and *S. japonica*. Those who grow white-flowered hardy plants for cutting may, perhaps, add to this small list, but it is small, for the reason that all the things mentioned give flowers in quantity and the plants are easily grown. C.

Tufted Pansies.—It is a common practice to put into frames in the autumn cuttings of these thickly, keep them so protected all the winter, and plant out in the spring as early as possible for summer blooming to enable the frames to be otherwise utilised. The plan is an excellent one, as usually by the end of March the cuttings have rooted and become strong plants. But there is often a desire to plant out tufted Pansies unduly early, and the present open weather may tempt to that end. Of course, very much depends upon the nature of the future weather, but, hardy as these Pansies are, yet because so far kept in frames, they are none too well fitted for full exposure to hard weather or bitter cold winds, and we may have these badly enough before the end of March. Thus it is wiser to allow the young plants to remain in the frames a few weeks longer, where they will make sturdy growth and strong roots. They will bloom all the more profusely when put out into their summer quarters later on.—D.

MECONOPSIS.

THE most familiar of this genus is our Welsh species *M. cambrica*, a true perennial, while the others, natives of Northern India, two of which only are found in general cultivation, are only of biennial duration. They are all, we believe, quite hardy, but require considerable attention on account of their biennial duration, as they have to be raised annually from seed, the seedlings requiring great care in handling while in a young stage. They are also difficult to please as regards position, and strong vigorous plants are almost impossible unless in rich, deep, light soil and a partially shady situation, where they can have abundance of moisture without its becoming stagnant. The better way in handling seedlings is to grow them in pots during the first winter, planting out early in spring, when the stronger plants may be expected to show flower in July. The smaller ones will go on growing, forming large rosettes which will make robust specimens the following summer. Unless under the most favourable conditions, a slight protection will be required in wet autumns and winters, this being best effected by squares of glass raised a few inches above the crowns. All the species usually flower the second year, and the grower's aim should be to get as much vigour into them in that time as possible.

M. ACULEATA is usually a small plant in gardens, but capable under proper and liberal treatment of forming bold, massive pyramids of purple flowers. It is a singularly beautiful plant. The leaves are cut up as in *M. Wallichii*, and the flowers are produced much in the same way. It is a biennial also, and a native of the Himalayas.

M. CAMBRICA.—For the truly wild portion of the garden, for the rock garden, or for the flower bed the Welsh Poppy is one of the most charming and useful. On old crumbling walls wherever it can get hold its ample Fern-like foliage and abundance of orange-yellow blossoms are striking and attractive. It will grow almost anywhere. It requires no attention, unless that of thinning out occasionally, as it is a free grower and will overrun almost anything. On the other hand, where it can be allowed space in out-of-the-way corners, stony ground, or even the edges of gravel paths it flowers freely.

M. NEPALENSIS, the commonest Indian species found in gardens, is altogether smaller than *M. Wallichii*, but with a pretty fine-foliated plant, and on this account alone should be much oftener seen in collections of hardy plants. The soft yellow-green leaves form dense rosettes, which are said in a young state to close up or fold over as a protection to the tender crowns. The flower-stems vary from 3 feet to 5 feet high, producing numerous nodding blossoms 2 inches to 3 inches in diameter, and of a soft golden-yellow. It is also biennial, requiring a rich deep soil and partial shade. A native of Nepal.

WALLICH'S GIANT BLUE POPPY (M. Wallichii) is, perhaps, the finest of the Poppy-worts in cultivation. It is a truly handsome herbaceous biennial, remarkable inasmuch as it is one of the few, if not the only truly blue-flowered Poppy in cultivation at the present time. It grows from 4 feet to 7 feet in height, forming a perfect pyramid, extremely beautiful in full flower, the drooping Poppy blooms, of a fine pale blue colour and perfect in shape, being always interesting. The flowers first open at the top or ends of the branches, continuing until those nearest the main stem have opened. Although as a rule not more than about twenty flowers are fully open at one time, there is something fascinating about *M. Wallichii* in full bloom that attracts those not even specially interested in plants. Its curious, deeply-cut leaves, the conspicuous long red bristle-like hairs, its general habit, &c., all tend to mark it out among its fellows for special attention. It was first discovered in Sikkim by Sir J. D. Hooker, and seeds sent home produced plants that bloomed

in the Royal Gardens, Kew, in June, 1852. It forms a rosette of large leaves, 12 inches to 18 inches long, deeply cut, and so brittle, that, although well able to stand our winters, they are apt to be damaged by snowfalls, heavy coverings, &c. The plants naturally like a moist situation in a rich deep peaty soil, and partially shaded from the midday sun. It is biennial, and to keep up a stock, seed should be sown annually, and this as soon as gathered. In strong plants and from the first flowers the seed is invariably good and sound. An interesting and conspicuous rock plant (see accompanying figure). The varie-



Meconopsis Wallichii.

ties *fusco-purpurea* and *purpurea* are not so desirable as the type, and when allowed to grow together, spoil the fine blue of the old form.

D.

Aubrietias.—These pretty creeping plants are wonderfully recuperative if materially injured, and any clumps that have suffered during the hard weather may be cut over so as to get rid of unsightly objects, and very soon new shoots will break up in profusion. These, of course, bloom later than would old growth, but *Aubrietias* are not always able to endure very severe weather, especially on retentive soils. These young shoots offer capital material for the making of cuttings, as a quantity can always be taken from each clump, and if set in under handlights in sandy soil, or put into shallow boxes or pans and stood in a frame, they soon make roots. Then, dibbled out into a

spare piece of ground at 8 inches apart, a fine stock of young plants is secured easily for planting out in the autumn. Some varieties come fairly true from seed, but to ensure perfect correctness it is best to propagate by means of cuttings.—D.

FOUR-SEASON GARDENING.

THE following extract well illustrates the excessive trouble people take with what they call flower-bed furnishing, and shows well the ceaseless pains of the system, which is never a good one, but bad, particularly in its labour for the gardener and its disfigurement of the ground, as we see here four times a year. One of the worst features of this system is that under it there are no means of growing the really noble flowers which will not stand this rooting and disturbance, such as Tea Roses, Lilies, and Carnations, which should be grown in the beds all round the year. The winter aspect of these plants is far more beautiful than that of the specially "furnished" winter beds. We quote the extract, not because our readers want such information, but simply as an example of the ceaseless worry and ugliness of what has hitherto been called flower-gardening:—

The plants which are used in furnishing flower knots or flower beds are generally raised in a nursery bed situated in some favourable part of the garden, and either in the open air or under frames, according to the season and other requirements. It is, therefore, necessary to make up one's mind a good while beforehand as to the number of furnishings that is to be fixed upon for the year, and to make a corresponding selection of plants that will be suitable for the different seasons. In many gardens only one annual furnishing is taken into consideration, that is, for the summer flowers, and in this case plants are selected which will continue in bloom for as long a period as possible; but during the greater part of the year the beds in these gardens are bare or nearly so. In well-kept gardens, however, the owners like to see the flower beds always furnished, even in winter, for it is possible at that season to have them filled with plants which, if they do not flower, have at least evergreen foliage more or less elegant in appearance, and serving at all times to conceal the bareness of the soil.

The plants which are appropriate for the embellishment of flower beds may be classed in four principal groups according to the season at which they bloom; consequently, four furnishings may be made every year in the same bed. When these four groups of plants, however, are to be employed to the best advantage, they should be grown on in a reserve bed and lifted with a ball just when they are coming into flower.

The four seasons may be dated as follows: Spring furnishing, from March to May. Summer furnishing, from June to September. Autumn furnishing, from October to November. Winter furnishing, from December to February.

The periods here mentioned are, however, only approximate, for their date and duration may vary in accordance with the plants em-

ployed, and also with the locality of the garden. I now proceed to give numerous examples of the plants which are suitable for each of these seasons of furnishing:—

SPRING FURNISHING.

This is chiefly the season of the bulbous plants, and amongst these the most important place is held by the Hyacinths, Tulips, Narcissi, Crocuses, Anemones, Ranunculuses, &c. Certain kinds of these, however, come into bloom at a comparatively late date, sometimes even close upon the time when the summer furnishing has to be taken in hand, and in the case of these, taking into consideration the character of the plants which are to succeed them, early-flowering kinds should be employed, such as *Narcissus pseudo-Narcissus*, *N. incomparabilis*, early single and double Tulips, Dutch Hyacinths, &c. If the bulbs of these are not quite ripened when the summer furnishing is commenced they should be left where they are if they are not particularly valuable, or they can be lifted with soil about them and laid in in a trench to finish off their ripening. It would be better, however, at least in the case of some kinds, to plant the bulbs in the first instance at such a depth that they may remain undisturbed in the bed throughout the summer. For the spring furnishing the bulbs are planted in the previous autumn, but if the beds are at that time and also during the winter occupied by other plants, the best plan is to pot the bulbs and plunge them in beds elsewhere from which they can be lifted and planted out in the flower beds as soon as these are freed of their autumn or winter occupants, and in this way no strain is put upon the bulbs. A few annual and perennial kinds of herbaceous plants are very much in vogue for the spring furnishing, such as the numerous varieties of *Silene pendula*, the blue, white, or pink, tall or dwarf alpine *Myosotises*, and some other species, such as *M. dissitiflora* and *M. rupicola*; also the various kinds of Pansies. Some other plants which are not so well known are quite as valuable for this season's furnishing, viz., *Alyssum saxatile*, *Aubrieta deltoidea*, *Arabis alba* and *A. alpina*, *Iberis affinis* (annual) and *I. sempervirens* (perennial), the various perennial dwarf *Phloxes*, such as *Phlox subulata*, single and double yellow Wallflowers, Daisies, garden Primroses, hardy *Sempervivums*, sweet Violets, and *Saxifraga Huetiana*, a pretty miniature plant with a profusion of yellow flowers, excellent for edgings, but requiring protection in frosty weather, or, better still, if it is wintered under a frame. Like some of the bulbous plants, these herbaceous kinds cannot be planted in position in autumn; they should, therefore, be pricked out in a nursery bed, from which they can be carefully lifted with a ball when furnishing the flower beds in the latter end of February.

SUMMER FURNISHING.

Summer is the season of flowers, and the number of kinds of plants which can be employed in the furnishing of flower beds and borders is so great, that the only difficulty is in deciding which to choose out of so many. The choice, besides being in accordance with the selector's special likings or taste, should also be made to suit the time when and for how long it is desired to have the beds in bloom, and will, moreover, depend upon the extent of shelter accommodation that is at the disposal of the plants for the wintering or the raising of the plants.

When it is desired to plant a furnishing that will last until the frosts arrive, the selection should consist preferably of perpetual flowering

kinds, such as *Ageratum*, *Begonia ascotensis*, *B. fuchsoides*, *B. semperflorens*, *Calceolaria rugosa*, *Fuchsias*, *Heliotropes*, *Lantanas*, and especially the numberless varieties of zonal *Pelargoniums*, *Pelargonium hederæfolium*, *Verbenas*, &c. To these may be advantageously added certain plants with variously coloured foliage, such as *Coleuses*, *Iresines* (*Achyranthes*), *Centaurea candidissima*, *C. depressa*, *Cineraria maritima*, *Perilla nankinensis*, red-leaved *Amaranthuses*, *Pyrethrum Parthenium*, &c. These when tastefully disposed in mixtures produce an admirable effect. There also may be used such bulbous or tuberous-rooted plants as the Cannas, the floriferous new varieties of which are especially to be recommended; the Dahlias, of which there are now very many varieties and of all shades of colour; *Montbretia crocosmiæflora* and others; single-flowered hybrid tuberous-rooted *Begonias*, *B. Worthiana*, *B. intermedia*, &c.

The number of annual and perennial herbaceous plants which are suitable for the furnishing of flower beds and borders is enormous, for, as a general rule, nearly all plants of this kind may be so utilised. But without particularising the dates and duration of their time of flowering, or the various dimensions of the plants (matters which, however, must be taken into account when making a selection), I may here recommend the following: *Adonises*, *Alonsoas*, *Balsams*, *Marvel of Peru*, yellow Day Lilies, *Campanula grandiflora*, *C. carpatia*, dwarf *Nasturtiums*, *Cockscombs*, *Chrysanthemum carinatum*, and *C. coronarium*, *Clarkia*, *Collinsia*, double Corn Poppies, *Coreopsis*, *Eschscholtzias*, *Gaillardias*, *Ten-week*, *Emperor*, and other Stocks, *Godebias*, *Xeranthemum annuum*, *Helichrysums*, *Garden Rocket*, red-flowered *Linum*, *Lupinus Cruikshanki* and other species, double white *Matricaria*, *Lavatera*, *Mimulus cupreus* in variety, *Antirrhinums*, *Nigellas*, Chinese and Indian Pinks, *Carnations*, *Sweet Williams*, annual Poppies, such as *Papaver umbrosum*, *P. Tulipe*, *P. Danebrog*, and other large double varieties, *Pentstemons*, the numerous varieties of *Petunias*, *Phlox Drummondii*, annual and perennial Larkspurs, *China Asters*, *Mignonette*, African Marigolds, *Scabiouses*, varieties of *Thlaspi*, *Garden Valerian*, *Verbenas*, and *Zinnias*.

Some of the foregoing may be sown where they are to flower, but the general practice is to sow them in nursery beds in February or March, and in some cases in the latter part of the previous summer. The seedlings are pricked out in the open ground or into frames or pots, and are finally planted out in the beds in the latter part of May.

AUTUMN FURNISHING.

The number of plants which, in spite of foggy weather and a lower temperature, flower at this time of the year is very limited. The *Chrysanthemums* are the most important kind that is now available for our present purpose; but the varieties of these are so numerous and their colours are so diversified, that they can be planted in large quantities without any risk of producing a monotonous effect. The *Asters*, though of many kinds and late-flowering, seldom last longer than the end of October, and they should be planted in the beds during the month of September. The same remark applies to several kinds of bulbous-rooted plants, such as the *Colchicums*, *Merendera*, *Bulbocodium*, *Sternbergia lutea*, *Amaryllis Belladonna*, &c. I may also mention here, as being serviceable at this season, the Japanese *Anemones* *Honorine Jobert* and *elegans rosea*, the early brownish yellow Wallflower, *Helenium autumnale*, *Helio-*

anthus lætiflorus and *H. orgyalis*, *Gaillardias*, *Phygelius capensis*, *Senecio pulcher*, *Caryopteris mastacanthus*, &c. However, at this time of the year the weather must be taken into account; if it happens to be mild, the flowers may go on expanding up to the middle of November, but the first smart frost puts an end (sometimes all too soon) to this late display of bloom.

WINTER FURNISHING.

When the frosts have swept away the last flowers of autumn, we may, nevertheless, replace the plants which bore them with others of a more hardy constitution, and thus avoid leaving the beds bare and naked all through the winter. The number of these hardier plants is not large, and to supplement them we must have recourse to evergreen shrubs and small conifers. Amongst the herbaceous plants, however, *Helleborus niger* and its numerous varieties are valuable at this season, but less so than the ornamental curled Kales, the leaves of which, more or less extensively curled and variously coloured, are very effective and at the same time not easily injured by frost. These leaves can also be used for garnishing dishes on the dinner-table—an application of them which is not to be despised at this time of the year. *Nardosmia fragrans* is one of the few herbaceous plants that open their flowers in mid-winter, whence it has obtained its popular name of Winter Heliotrope. Of the shrubs that are suitable for furnishing flower beds in winter I especially recommend the *Laurustinus*, *Thuja occidentalis globosa*, low-growing Junipers, *Retinosporas*, *Chamaecyparis*, &c. These shrubs when intended to be used for this purpose should be kept during the summer in pots plunged in a suitable part of the garden to the depth of a few inches below the surface of the soil.—S. MOTTET, in *Revue Horticole*.

ORCHARD AND FRUIT GARDEN.

WHERE GRAPES MAY BE GROWN.

THERE is no disputing the fact that modern, well-constructed lean-to, three-quarter-span and span-roofed vineries are to be preferred for Grape culture to any makeshift structures and positions; but, all the same, very satisfactory results frequently attend deviations from orthodox practices. Thus, if vineries proper are either too few in number or are altogether absent, the attempt may yet be made to grow Grapes in other houses with every prospect of success, always provided sufficient intelligence is brought to bear on the matter. Grapes can certainly be purchased at comparatively low rates now-a-days, or cheaper, probably, than many inexperienced cultivators can grow them; but there is always more satisfaction in being able to place home grown fruit before friends, and enthusiasts also derive very much pleasure from their culture. Let would-be successful Grape growers not be deterred, therefore, by apparently insurmountable difficulties, which after all may be overcome without any supreme efforts. It has frequently been pointed out in these pages that expensive Vine borders, or those, say, with concrete bottoms and composed largely of good turf, can be dispensed with. Concrete bottoms in their turn necessitate sinking deep drains, which are expensive and very disturbing, especially when carried through the centre (as they often are) of a well-arranged kitchen garden. Undoubtedly a border largely formed of the best fibrous loam procurable, with perhaps some old mortar rubbish and half-

inch bones freely added, is the most suitable for Grape Vines; but, personally, I have never yet been in a position to cut this to an unlimited extent, and very many other gardeners, professional or otherwise, are in the same predicament. A mixture of good garden soil and the best fresh loam (fibrous or otherwise), mortar rubbish, with small brick ends or smaller pieces of stone retained, wood ashes, charred soil and rubbish, and a liberal sprinkling of half-inch bones, would form both a congenial and lasting compost, such as would long grow Grapes to perfection. Even the bones can be dispensed with, though I should always prefer to mix a 6-inch potful of these with every bushel of compost. Nor are large borders indispensable. A small border, raised or otherwise, and properly managed may suit the Vines better than those of much greater extent and in which the roots are not nearly so much under control. Some of the best Grapes I ever cut were from Vines that had their roots in a raised inside border 4 feet wide and 3 feet deep, and in this they had been confined for six years previous. I need hardly add that they were kept well supplied with water, liquid manure and manurial top-dressings, more depending on these than anything else. All this is mentioned in order to show that if a border cannot be constructed on the usual lines, it may be formed in a less common manner and in a different position to that generally assigned it.

Succulents are becoming quite the rage among amateurs, there being as many as four houses in this locality largely or wholly devoted to them. One of the first to collect this class of plants found that they thrived admirably in a house the roof of which was lightly covered with Grape Vines. The shade afforded by the latter during the summer did not prove in the least detrimental to the succulents, nor were the latter injured by the maintenance of a noister atmosphere than is generally thought desirable for them, but which is very necessary to Grape Vines during their growing season. Succulents naturally thrive best in a dry atmosphere, but do not object to the opposite if not over-watered at the roots. In the autumn, or when the Grapes are ripening and ripe, a circulation of dry air must be kept up, if necessary with the aid of fire-heat, this also suiting the succulents better than any other class of plants growing under similar circumstances. During the winter, or while the Vines are resting, a temperature ranging from 45° to 50°, accompanied by a dry atmosphere, does not hurt them, and appears to suit the succulents well. Let the owners, therefore, of succulent houses thinly cover the roofs of these with Black Hamburgh or other varieties of a similar accommodating habit, and the grateful shade afforded by these, to say nothing of the luscious fruit, will add greatly to the attraction and enjoyment of the house, more especially in the case of the least enthusiastic admirers of the quaint slow-growing succulents.

Potting sheds or houses are places where one would scarcely expect to find Grapes growing and fruiting in a very satisfactory manner, yet there was a time when I could point to a potting house in which there was a strong Vine growing in each corner. The varieties were Black Hamburgh, Madresfield Court, Buckland Sweetwater, and Foster's Seedling, and all produced Grapes equal to anything grown under more favourable conditions on the same place. As a matter of course the roof was glazed and the head room ample, and the question I have often asked is, why should those who plan potting sheds or houses make these so low and dark? Glass is one of the cheapest coverings for a

roof, and ought always to be used on potting sheds in preference to tiles or slates. It may be urged that there are too much dust and such like in potting houses for these to be suitable for Grape culture; but why should there be? Conservatories with very high roofs and any glazed with rolled glass are not well adapted for Grape culture, but these, as a rule, are only found adjoining the mansions of the wealthier classes who can afford to provide the requisite number of vineries proper. When we consider the case of the less wealthy occupiers of private places and amateurs generally the case is very different. Instead of clothing the pillars and roofs of small conservatories and greenhouses that are kept gay during the greater part of the year with inferior climbers or starvelings, why not try what can be done with a few or several Grape Vines? These would obviate the use of blinds and prove both ornamental and useful. A single strong Vine, if need be, would soon spread thinly over a roof, the main rod being trained along the front wall plate of the house, and rods taken up the roof from this at 5-foot intervals, or wherever the rafters occur. I readily admit that very few really good examples of conservatory Grape culture are to be met with, but this is largely due to so few making an intelligent attempt. The sunny roofs of verandahs might be similarly clothed with advantage, the common Sweetwater being the best variety for the purpose. At Cranmore Hall, Shepton Mallet, a fully glazed corridor is principally devoted to Orange trees in tubs, while on the high roof overhead are trained several rods of Lady Downe's and other Grapes, which when I saw them several years ago were carrying good crops.

Grapes and Peaches succeed well together, always provided one is not allowed to unduly shade the other. Supposing the rods of the former are trained about 6 feet apart up the roofs, Peach and Nectarine trees against the high back walls of lean-to houses might thrive and produce heavy crops of good fruit for many years in succession, but they would eventually fail to do so if the rods were grown more closely together and allowed to extend the full length of the rafters. It would be more satisfactory to utilise front semi-circular trellises and the back walls of three-quarter span-roofed houses for Peach and Nectarine culture, and to train a Vine to three wires strained along the ridge at about 18 inches from the glass. Grand crops of Grapes, Peaches and Nectarines were for many years and probably still are annually produced in a long Peach house at Ashton Court, Bristol, the Vines being trained along the ridge only. M. H.

Pear Marie Louise.—Although this is a grand Pear on walls, and perhaps in some favoured locality in a genial soil it may succeed in the open as a bush or pyramid, to recommend it indiscriminately for any garden, especially in a limited collection of sorts, is wrong. Until two years since I had several trees of it growing, at first in pyramidal form; afterwards they were allowed to extend their branches until they could hardly be called of that shape, assuming more of the freely growing bush tree. During the whole of the twelve years they occupied the ground I never once gathered a decent fruit from any of the trees. It cannot be said that it was owing to any defect in culture, but simply a matter of unsuitableness to this particular soil. The trees generally grew fairly well during the summer, but much of the current year's growth was injured by the following winter's frost. Not only were the roots kept near the surface, but some of the trees were lifted and planted on the tops of the natural level, mounds being made about them to cover the roots, but all

to no purpose. When they were at last destroyed they were fully 13 feet high. On an east wall I annually have good crops of fruit of fair size and quality, although not large. The trees on this site make moderately strong growth, and the foliage is very healthy. In the open the trees are a decided failure, owing mainly, I think, to the cold state of the soil during the winter and spring, the growth made the preceding summer not being sufficiently matured to withstand the frost of the succeeding winter.—E. M.

VINES MIXED IN VINERIES.

I HAVE read with great interest the notes by "W. I." in *THE GARDEN* of January 21 (p. 52) on the above subject, and in the following notes have detailed my own experience. In gardens of moderate extent it is the rule rather than otherwise to see the vineries occupied with mixed varieties. Muscat of Alexandria is, perhaps, the variety which receives the most attention as regards a separate house, and rightly so. I have seen many very fine examples of this Grape cut from Vines in August which were growing along with such sorts as Mill Hill and Black Hamburgh, Buckland Sweetwater, Trentham Black and White Frontignan. Four miles from where I write this occurred last year, and so good were the examples of this Grape, that they were awarded the *Gardeners' Magazine* medal for any kind of fruit that exhibited the highest cultural skill. The Vines in question are not less than 20 years old. I attribute the success attained to a common sense method of managing the growth of the Vines, as to stopping the shoots and allowing as much foliage to exist as can be thoroughly matured instead of being so overcrowded as to render it useless for supplying the wants of the Vine. Abundance of heat was available at the most critical periods of growth, the vinery being situated in a garden which is well sheltered from north and easterly winds, a fact which is most essential where this Grape has to be ripened in August, which is early for this variety. I mention these facts rather at length to prove that it is possible even to cultivate this variety in a mixed house with success. In the vinery in question Black Hamburgh is also grown successfully; so much so, that bunches annually take first prizes at local shows in July.

From the foregoing it may be assumed that I advocate the planting of Muscat of Alexandria along with other varieties, but I do not. All I say is that where there is no choice of situation and convenience I prefer to have a rod of this—the best of Grapes—along with others rather than be without it.

I have for years grown Madresfield Court in mixed houses both early and late, and with considerable success; indeed, I have only twice seen a whole house devoted to it. The best example of this method of cultivating the variety was at The Vineyard, Garston. The Vine was originally planted by Mr. Meredith. It soon occupied the whole of one small house, and so well did it succeed, that the adjoining compartment was added. As fine as the Grapes were resulting from this particular Vine, I have many times seen much superior examples cut from Vines in mixed houses both early and late. There is no occasion whatever to fear the cracking of the berries where the Vines are planted in mixed houses, whether the borders are all inside or the reverse, or, indeed, if they are on the combination principle of half in and half out. The point to observe is to maintain a good lateral growth with a due regard to the atmospheric condition of the inside of the vinery. Although so many persons fail to colour really well fairly large bunches of Gros Colman, some of the best examples of this Grape I have seen came from a mixed house, Muscat of Alexandria being one of the sorts grown along with the Gros Colman. Foster's Seedling is one of the most accommodating of white Grapes with regard to planting it in a mixed or a house to itself. Alicante will both colour and ripen with the least trouble of any sort black or white. The finest sight in Grape culture that I

have ever seen with one variety was in the case of Alicante. It was at Roubaix, in the north of France, at the establishment of M. Corbionier. The vinery in question was span-roofed, both the crop and the colour of the berries being marvellous. The foliage, too, was in that stage when changing to the deep yellow which it assumes preparatory to falling in the autumn. In the late vinery here we have one rod of Mrs. Pince, the berries of which seldom fail to colour fairly well. In the same house, growing alongside this variety, are such as Lady Downe's, Trebbiano, Gros Guillaume, Gros Colman, Madresfield Court and Black Hamburgh. The two last were planted with a view to continuing the Grape supply through September after those in another house were exhausted in August. E. M.

EFFECTS OF GRAFTING ON GRAPES.

WHATEVER may be the opinion as to the effect of grafting as regards other subjects, I think it must be admitted that in the case of Grapes there is very often a change for the better. In the majority of instances no special stocks are planted for the sake of their being re-worked with other varieties, as grafting generally is the outcome of wishing to change the existing varieties from what was intended at the time of planting. Grafting is of use in many ways; the whole character of healthy Vines growing in a suitable border may be altered without the trouble of pulling out the border and replanting. Of the varieties adapted for grafting, the old Black Hamburgh and the Muscat of Alexandria are those generally operated upon. Not that the quality of the latter can be improved upon by any other variety which may be worked upon it, but it is valuable as a stock, for such as Gros Guillaume, the benefits of which union were recently pointed out by Mr. J. Day. This variety is often disappointing by its refusal to show a sufficiency of bunches. It is only by experiments of this nature that we are likely to find out the causes which will lead to the best results being obtained. A gardener of my acquaintance found out quite by accident that Gros Maroc was vastly improved by its union with Madresfield Court. The best coloured Lady Downe's I have ever seen were from rods grafted on the old West's St. Peter's.

The fault of the Madresfield Court when grown on its own roots is that after the first few years it becomes weaker. The bunches are smaller, although they may colour admirably. Now to obviate this want of strength, I have so far had good results by grafting on young and vigorous Black Hamburghs. In fact, as far as strength is concerned, they even outvie their neighbours, the Black Hamburghs. Some people are of the opinion that this extra vigour would have a tendency to cause the berries to crack, but this I never fear, as I have long since found out that no extra increase of sap force causes this which is entirely brought about by atmospheric influence. Madresfield Court grafted on Foster's White Seedling will not succeed at all.

The reason I think why some grafted Vines lack strength is because the scion is spliced to the stock at the bottom of the rod, and no attempt is made to check the rising sap into the parent rod. It will take readily enough, but the after growth is very slow, and in the end it lacks strength. The best results are always to be had when the young rod is vigorous from the first, and this can only be obtained by checking the rod it is to be grafted on. Some people leave the parent rod to perfect a crop of Grapes, or until they think the scion is large

enough to bear. If such is depended upon, I am afraid the operation will not be considered successful. Some people object to grafting, thinking that a better union takes place by what is termed inarching. I am not at all averse to grafting, as I think a stronger and earlier rod is so obtained. In either case it depends upon whether the operation is successful, although with inarching when carefully performed a union is sure to take place, and this neatly and perfectly. When I intend grafting a Vine I make preparations also for inarching if the former should not be successful by inserting a few eyes as early in the season as possible so as to get a suitable scion, or, better still, by having cut-back pot Vines ready. A Vine which is to be grafted should have been partially headed back ere this, although in a late house it is not too late now if care is taken to dress the wound over with styptic. The Vine should be headed down to within three or four spurs where it is intended to insert the graft, which should be about 2 feet from the surface of the border and on the main stem. The grafts or scions should now be heeled in in the open borders, the aim being to keep them as backward as possible, as if they should happen to be laid in within the structure very likely they would start in advance of the stock, when, of course, no union would take place. The scions must also be perfectly straight, especially where they will have to be placed in contact with the stock, as unless the bark of the scion is placed in immediate contact with the inner bark of the stock no union can take place. The grafts may be soon brought to the desired state when the stocks are ready. The stocks are in a suitable condition for grafting after the shoots have grown about 7 inches or 8 inches. I have been the most successful by what is termed bottle-grafting. Y. A. H.

FRUIT TREES & FRUIT BUSHES.

THE orthodox way of arranging fruit gardens is to have rows of standard and dwarf fruit trees with rows of fruit bushes between them. As a rule, they get on pretty well together for the first few years, but by the time the fruit trees get to what should be their prime, they are prematurely exhausted, and not only in growth, but in small and scabby fruit they show unmistakable signs of starvation. The simple fact is that Currants and Gooseberries are such gross feeders and strong rooters, that they will weaken almost any kind of fruit tree. Hundreds of acres of fruit gardens are spoilt by this mixed kind of planting, for neither the fruit from the trees nor that from the bushes comes to perfection. In dealing with such orchards, the first thing I should do would be at this time of year to grub up all the bush fruits, as they would be useless for transplanting after they had been planted a dozen years, burn them in the open spaces and scatter the ashes over the roofs of the trees, then give a good dressing of manure. Before forking it in, see that the centres of all the trees are cleared of useless, spray-like, half-ripened wood, as the fruit that will be fit for market will be borne on the outer branches of the trees. If any insect pests are established on the bark, paint it with soft soap and paraffin oil, and if Moss grows on the stems, dust with freshly-slaked lime when the branches are damp, then lightly fork the manure into the soil and leave the surface bare. In arranging fruit gardens I should adopt a different plan altogether, for I would have each sort of fruit by itself, so that its roots would have the allotted space. Apples, Pears, Plums, Cherries or Damsons would be planted as bushes about 12 feet apart each way, and for the first ten years light crops of vegetables, rows of Violets, Wall-flowers or any hardy market flowers could be grown between the trees. After the bushes begin to

extend so as to occupy nearly all the soil, it will be found best to let the fruit trees, or, as they may perhaps more correctly be called, bushes, have all the space, the manuring and annual forking being continued as before. Some people say these dwarf trees cannot produce crops equal to large standards, but my contention is that by no other plan can so much really marketable fruit per acre be grown. Three hundred good bush trees on an acre of land would yield more bushels of first-class fruit than 100 large standards at 20 feet apart. Gooseberries and Currants at 6 feet apart in full sunshine will yield crops altogether superior to what they do in semi-darkness, and my experience is that if they will not pay for good culture and liberal root-feeding, they had better be left out altogether. JAMES GROOM.

Gosport.

THE GOOSEBERRY CATERPILLAR.

WHEN speaking of cottagers and allotment-holders on the culture of bush fruits, especially of the Gooseberry, I hear constantly melancholy accounts of the ravages made by the Gooseberry caterpillar. If it be true that the Gooseberry has fewer enemies or pests to contend with than most fruits, it can be said that the caterpillar is a host in itself, so completely does it denude the trees of leaves when it gets the upper hand, and when this occurs while the fruit is maturing it does not ripen, but drops off prematurely, with the additional result that a certain amount of vigour is lost by the trees.

One great preventive lies in the destruction of the caterpillars when they are active. Entomologists tell us that the caterpillar descends to the earth in the autumn, burying itself within a few inches of the stem of the tree on which it had been feeding, becomes changed to a chrysalis, where it remains until the following spring, when the chrysalis changes to a fly, and the female deposits its eggs on the undersides of the leaves. With the saw-like appendages with which the insect is provided the females commence cutting into the leaves and stalks and in the opening deposit their eggs. The cultivator of Gooseberries notices small specks and warts upon the undersides of the leaves; they are readily perceived, and in these lie the cause of so much mischief. If the leaves could be picked off as soon as these spots are perceived much of the damage done to the trees might be prevented. The larvae are hatched in about seven or eight days, and commence feeding upon the leaf, which is speedily anatomised. The caterpillars, increasing in size, frequently change their skin until they are about three-quarters of an inch in length. Can anything be done while the chrysalis is in the soil? One cultivator removed the soil about each plant during the winter, doing so to the depth of about 4 inches and to a diameter of some 2 feet, and in doing so, many of the chrysalides were captured. This soil was buried to a great depth or burned and fresh soil added, which proved a useful fertiliser. This process was carried out about every second or third year with decided success.

The broods of caterpillars appear successional, but generally in June, and sometimes in July and August. Many remedies have been suggested, such as hand-picking, dusting the trees with lime, placing a layer of lime under the trees and shaking the caterpillars on it, syringing the trees in the evening, sprinkling the foliage with salt or soot and with finely powdered sulphur. Another remedy frequently adopted is that of dusting the bushes with white hellebore powder as soon as the first caterpillar puts in an appearance. This remedy is pretty much a question of expense, but as it is said a pound of the powder can be purchased for a few shillings, and that this quantity is sufficient for fifty bushes, those who have experimented with the powder say there is scarcely a necessity for a second application. The bushes should be dusted with the powder during dry weather, or rain will quickly wash it off and destroy its efficacy. All traces of the powder should be carefully washed off the berries before they are eaten.

I was recently informed by a grower of Gooseberries that he made a point of allowing a hen and chickens, as soon as possible after the latter were hatched, to have the run of his Gooseberry plantations, and with great advantage too, for they gathered up large quantities of the larvæ. As soon as the chickens began to attack the fruit the hen is cooped. A branch of Furze placed in the centre of a Gooseberry bush is said to be a good preventive of this pest. Has any reader of THE GARDEN tried this plan? R. D.

GOOD LATE KEEPING GRAPES.

THE only way to keep up a supply of Grapes is to grow sorts that keep well in houses exclusively devoted to them when they are ripe. For general purposes the Black Hamburgh is still our best Grape; but, unfortunately, its best season is over before Christmas, although good examples of it are frequently preserved even later than that. That is only so, however, under exceptionally favourable circumstances, and as we have not all got Grape rooms, it follows that a Grape that, with careful ventilation and a dry atmosphere, will keep on the Vine is what the majority of cultivators require. For this purpose (of keeping) high temperatures are not required; only a little warmth in the pipes is needed—just enough to make the atmosphere light and buoyant. I have tried most of the kinds of Grapes worth growing, and have proved over and over again that the following may be relied on to keep well until the end of February or early in March (provided they were well ripened in autumn) even without a Grape room by simply cutting the bunches and shoots entire, and putting the ends in bottles of water about the middle of January. When the sap in the Vines begins to move cut the Grapes, and if a darkened chamber for storing is not available, try the next best remedy, and resort to artificial shading. If I had only room for one sort of late Grape, I should unhesitatingly select Lady Downe's Seedling (here figured) as the best keeper in the black section. It is a fine-looking Grape, sweet, crisp and juicy, even after many other sorts are shrivelled. It is one of the best sorts for bearing on the spur system that we have, and scarcely ever fails to produce plenty of fruit. It requires careful thinning, as it produces a quantity of small imperfectly set berries, and all late-keeping Grapes require more severe thinning than early or mid-season ones. Black Alicante is also a handsome Grape, producing finely-shouldered bunches, and, like the preceding, seldom fails to colour as black as Sloes. The berries are longer than those of Lady Downe's, and for a Christmas Grape it has few equals; but my experience is that it will not keep fresh for so long as Lady Downe's. Gros Colman has of late years become a very popular Grape. It is remarkable for size of berry, forming a truly magnificent bunch, but its flavour is only second-rate. It is a strong grower, and produces its finest bunches on the young wood. Therefore, the long rod system suits it the best. There is one peculiarity about it—viz., its foliage is liable to curl up at the edges, as if scalded, and in houses where it is growing side by side with other kinds it is one of the first to suffer from sudden changes of temperature. A little air left on continually night and day is the best way of avoiding scalding. This Grape requires severe thinning; even if bunches look like skeletons when first thinned, they become solid before the berries get fully ripe. Mrs. Pince's Black Muscat is a late Grape that will keep for a long time, and it is one of the best flavoured.

Its usual failing is not colouring well, but when not overcropped it generally finishes off noble bunches of Grapes. Raisin de Calabre is a white Grape, well adapted for keeping late in the season. It is round-berried, and remains plump and fresh-looking until spring, when its noble appearance makes it a valuable companion to Lady Downe's. It is a strong grower and produces very fine bunches, and although not of first-class flavour, it is one of the best of white Grapes in its season. There are several other kinds that keep well, but which are not in such high favour as formerly. For instance, West's St. Peter's is a beautiful Grape that always colours well, and succeeds with only a moderate amount of heat, but it has been

late kinds are made a speciality of in many market fruit-growing establishments, and also in most large private gardens; but in gardens of limited extent Grapes are over just at the time when they are most needed. T. P.

APPLES.

THE very fine collection of Apples staged at the Drill Hall on the 17th was an interesting and most instructive exhibit. One or two points struck me as being of special interest, the fine condition in which Apples classed among the second earlies, as Peasgood's Nonsuch, Lady Henniker, and King of Pippins, were shown, particularly fine dishes of Apples not as yet so widely known as others—Prince Albert, Lord Derby, Bismarck, and Hoary Morning—being very conspicuous, and the large and highly-coloured samples of such choice dessert fruit as Cox's, Adams' Pearmain, the Melon, and Cornish Aromatic. Two exceptionally good dishes of Annie Elizabeth were shown. What is the general experience of this Apple? There is no question as to its handsome appearance and keeping qualities, but personally I cannot say much for it as a cropper. A few pyramids now nine years planted have never carried a full crop. I believe it has a similar reputation to the Blenheim, that one has to wait a long time for thoroughly good results. One of the most striking fruits exhibited was that bearing the name of Blue Pearmain, a large Apple of good flavour and exceptionally fine appearance. It is said to crop well, and should prove a valuable dessert fruit. There were few interested in fruit culture who did not make a special note of this variety, with the idea of adding it to their collection at no distant date. It is certainly a veritable King of Pearmain. Valuable, however, as such exhibits as the one under consideration are, the question arises whether it is advisable to retain year after year varieties of inferior merit either from a quality or size standpoint. For instance, why retain sorts of third size either for dessert or kitchen purposes when large fruit of equal merit is obtainable, or sorts in old orchards whose only good point is their free cropping qualities? I write rather feelingly on this topic, having had on two occasions to take over old orchards that contained a number of worthless varieties. I particularly remember noting a row of fine trees to which I paid a considerable amount of attention through the winter, to find when the fruit was ready that my labour had been spent on what was little better than an ordinary cider Apple. Unless required for special purposes, I question if the number of varieties in most places might not very well be reduced by one half. E. BURRELL.



Grape Lady Downe's.

superseded by larger-berried sorts. Size of bunch and berry has overcome the equally or more important question of flavour. There is, moreover, Black Barbarossa (Gros Guillaume), which produces very large bunches, that keep well for a long time. This variety does better on the long-rod system than on spurs. The bunches on young wood usually weigh several pounds each, and form striking objects on the dessert table at a period when fresh home-grown fruit is at its lowest ebb.

The above is a selection that may be relied on to yield Grapes in good, plump condition until early-forced Strawberries are procurable; and when special means of preserving them are taken they may be kept in really fine condition until May, and even June, thereby doing away with the necessity for early forcing. These

their free cropping qualities? I write rather feelingly on this topic, having had on two occasions to take over old orchards that contained a number of worthless varieties. I particularly remember noting a row of fine trees to which I paid a considerable amount of attention through the winter, to find when the fruit was ready that my labour had been spent on what was little better than an ordinary cider Apple. Unless required for special purposes, I question if the number of varieties in most places might not very well be reduced by one half. E. BURRELL.

Claremont.

Training Apple trees.—Although much may be done towards the formation of bush trees by judicious pruning, yet some varieties owing to their manner of growth cannot be brought into perfect form simply by pruning. Take for instance

those varieties of upright growth, such as Annie Elizabeth, Waltham Abbey Seedling, Baumann's Red Reinette, Cockle Pippin and Golden Spire. If a little time were spent annually in training the main branches in an outward direction, not only would the shape of the trees be improved, but much benefit would accrue by the admission of a greater amount of sun and air to the body of the tree. Without a thorough maturation of the shoots every year it is not possible to have fruit of the best quality. A handy man can very quickly go over a number of bush trees, adding much to their appearance as well as their utility. If a stout stake is thrust into the soil at about 15 inches or so from the stem of the tree, it will not damage the roots to any appreciable degree. The lower branches should be drawn down and made secure by the aid of a piece of stout tar cord to the stake. The point to observe is not to bend the branch too low for fear of its splitting from the main stem. In no case should the point be brought lower than a horizontal position, but seldom indeed will even this be required unless the tree is very full of branches, and in that case it may be an advantage to remove some of the weaker ones entirely, admitting more space for better branches. The age and size of the tree will of course guide the operator. In cases of bushes from four to six years old, about four or six stakes to each will be sufficient. These need not be as a rule left more than 2 feet out of the ground. If there are other branches in the body of the tree that seem to need assistance in this way, instead of adding more stakes a longer piece of tar cord fastened to the existing stakes will generally suffice.—E. M.

PEACH CULTURE FOR PROFIT.

"Y. A. H." (p. 18 THE GARDEN) is a very fortunate individual, but I should like to know in what market he has "invariably obtained high prices." Not in Covent Garden surely, as if so, his experience is in remarkable contrast to that of the London market growers of the present day. I do not wonder that "Y. A. H.'s" friends have "expressed surprise" at such returns as 10s. to 15s. per doz. for outdoor Peaches. If such prices could be assured, it would pay to build walls expressly for profitable Peach culture. At an average price of 1s. per Peach, 100 yards of wall well managed would be a fine source of revenue. "Y. A. H." says, "Of course gluts will occur in the supply." I am sorry to say that they are more the rule than the exception now-a-days. As long as I can remember, there have been glutted markets, and at these times of depletion the prices necessarily drop to a very low point, thus considerably lowering the average for the season. I have seen Peaches sold in May for 30s. per dozen, and I have known them sold for 3s. per dozen, well-grown fruit sent to market in the best possible condition. This was of course later in the season, but the disparity in price shows how little high prices can be depended on, taking the season through and one year with another. The demand for high class, expensive fruit is limited, and, according to my experience, has not kept pace with increased production. The consumption of fruit grown under glass is infinitely greater than was the case twenty years ago, but this has been brought about by such reductions in price that admit of its purchase by people who could or would not have bought at the prices which formerly prevailed. The production of fruit being so much greater than a few years since, first-class samples are necessarily more plentiful, and consequently cannot so easily be disposed of at good prices. The abundance of really good fruit offered now at low rates has made the sale of extra fine samples

at high prices very difficult. I was lately shown some magnificent bunches of Gros Colman Grape in a fruiterer's shop in Covent Garden. I was assured that a few years ago they would not have remained three hours there; whereas now if they were disposed of in the course of a week it would be good work. How does "Y. A. H." reconcile the assertion that "Peaches and Nectarines make as much as they ever did" with the statement that they are not sent into market in such quantities as formerly, the reason probably being that growers are disappointed with the returns? It is perfectly correct that the returns are frequently unsatisfactory, but not because the fruit is badly grown or not sent to market in good condition. Men who have been growing Peaches for profit for a quarter of a century or more are not likely to be deficient in the knowledge of how to grow and pack their fruit. One has but to look through the Central Avenue in the month of May or June to be able to form an estimate of the quality of market Peaches. There will be found Peaches which in size, colour, and perfection of condition leave nothing to be desired, and yet the growers will tell you that they realise from 30 to 50 per cent. less than a few years ago. It would indeed be strange if the Peach grower had escaped the general fate. The amount of glass devoted to fruit culture for profit has increased so wonderfully during the last few years, that prices cannot be maintained at their former level, and now the English Peach grower has to contend with foreign imports which threaten to cripple him. It is the opinion of the Covent Garden salesmen that Peaches from the Cape will bring prices down to so low a point, that Peach forcing in this country will soon become extinct.

J. C. B.

MAKING THE MOST OF THE FRUIT GARDEN.

The re-grafting of trees in a garden requires to be carried out on rather different lines than in farm orchards, especially as regards varieties, as good dessert Apples for home consumption, or those kinds that combine dessert and cooking properties, should be the desideratum. Amongst these as strong growers suitable for large trees may be mentioned Red Astrachan, King of the Pippins, Royal (or Herefordshire) Pearmain, Peasgood's Nonsuch, and Lord Derby, and there will probably be one or more good local sorts worth increasing. I may say that, next to planting dwarf trees on the Paradise stock, the quickest way to get a supply of Blenheim Orange is to graft on large trees, a fair crop the fourth or fifth year being by no means rare. If sufficient grafts are not available, one half or a portion of a tree may be grafted and the remaining part the following season. When the grafts send up very strong shoots these should be thinned, cutting away the inner growth down to the graft and the remainder will be more secure from high winds, the thinnings making capital material for scions. Espaliers which are unsatisfactory may be cut down to the lower branches, and grafts inserted along the whole length. These are capital stocks for the best dessert kinds (of which we can never have too many), such as Beauty of Bath, Golden Pippin, Cox's Orange Pippin, Royal Pearmain, Blenheim Orange, &c.

A variety may be properly placed in the garden or home paddock which we could not recommend for the farm orchard or for market, fine quality not necessarily meaning market value. As an instance I will mention Royal Pearmain. This Apple, which is, unfortunately, rather devoid of colour, realises about half as much as the attractive King of Pippins with its wax-like appearance and rich colour, yet the quality and flavour of the former are altogether superior.

We want a good supply of such fruit as will tempt one to eat. To the lover of a good Apple Cox's Orange Pippin is delicious, and anyone accustomed to such fruit will not care for American productions. How often have I entered a first-class fruiterer's shop asking for good eating Apples, to find them, if not uneatable, to say the least by no means pleasant to the palate. I am forming an arch over the centre walk of my garden with various kinds of Apples and Pears. Espaliers and pyramids have been allowed to grow high for this purpose. As I have material at hand the expense will be small. Light iron supports are placed at every 2 yards and wires stretched 1 foot apart over the whole length.

With reference to Pears, it is astonishing with what force the sap will flow, the scions put on even an old Pear tree forming large boughs in a few years. Jargonelle takes well, but does best against a wall. It frequently happens that a wall Pear tree bears well near the extremities of the branches, but it is barren near the centre. In that case insert a few grafts, low down near the trunk, of some other free-bearing variety. A low wall or fence which does not give room for larger fruit can well be utilised by planting Gooseberries a yard apart each side; even in the shade or under trees will do. When these are brought to hang over the wall little more attention will be required, except shortening the annual shoots to within 3 inches or 6 inches of the wall, allowing the growth to extend above if you like. The long green kinds are most suitable for this purpose; they are of very straggling growth and make poor bushes, but soon go ahead on a wall or supported in any way. Give plenty of liquid manure, soot, or some other stimulant, and thin out three-fourths of the crop as first earlies, leaving the remainder to swell into fine fruit. Trained up wires in any situation the Gooseberry answers well as a summer screen to hide any objectionable object, being profitable as well as useful. To form a fence (and why should we be confined to unproductive fences?) Whinham's Industry is first-rate, being a strong upright grower. Stretch a few wires across up to 6 feet high, plant the bushes 1½ feet apart, and in a few years you will have abundance of early green Gooseberries and a good barrier against poultry, &c. Whinham's Industry is the most profitable variety we can grow, being hardy, early, and very prolific. It will withstand frost better and form large bushes sooner than the older favourites. I have noticed a branch 7½ feet long on quite a young bush. E. W. BEAVEN.

Holmer, Hereford.

STARTING NEWLY-PLANTED VINES.

LAST week I planted some Vines. There are six old Vines in the same house, and as I am anxious to hurry on these latter, I am thinking of commencing to light fires. Would I do any harm to those lately planted by doing so? All the Vines are planted in the outside border. — INQUIRER.

*** There is no reason why "Inquirer" should not start his viney at once. He must not, however, maintain high temperatures, or the top growth will soon be far in advance of root-action, owing to the coldness of the outside borders, the consequence being the probable loss of many embryo bunches on the old rods and the premature hardening of the young growth on the newly-planted Vines. Stored-up food is usually sufficient to support the young growth up to the time the leaves are well developed, but if by then the roots have not commenced forming fresh fibres there will be a serious check. In this case the leaves will fail to quickly assume a rich green colour, some of the bunches very probably running to tendrils, the crop in any case suffering. In the case of newly-planted Vines the roots of which have of necessity or from choice been shaken out and somewhat damaged, the effect of their failing to keep pace with the top growth is even more marked. A strong first top-growth may be made, but in the interval between the first and second rush of sap this may harden to such an extent as to fail to swell away again properly the same season. Therefore, I strongly advise "Inquirer" to commence with a

night temperature not exceeding 55°, and if ripe Grapes are not wanted before the middle or end of June, 5° less would be even better. During warm or sunny days the heat may be increased about 10°, closing early and syringing freely so as to create a warm moisture-laden atmosphere, such as causes Vines to break strongly and evenly. If the border or even the half nearest the house could be gently warmed from the surface by means of a mild hotbed of leaves and manure, this would greatly hasten root-action and minimise all dangers resulting from a too forward top growth. Especially would the young Vines pay for this treatment, and the least that can be done in their case is to ward off all snow water and heavy rains from the fresh soil in which they are planted. Newly-started young Vines are liable to bleed badly, especially if the pruning has not long been done. Once bleeding starts there is no stopping it, and the best preventive measure is a timely dressing of all wounds with either styptic or painter's knotting.—W. I.

Strawberry John Ruskin.—In answer to Mr. Leach (p. 52) *re* John Ruskin and Vicomtesse Héricart de Thury, a small house was filled with these two about the first week in February. The plants were treated alike in every way, and were not removed out of the house. Fruit was picked and sent to table April 27 with the result mentioned at p. 567, John Ruskin being mildewed a little, none appearing on Vicomtesse Héricart de Thury. I threw Vicomtesse Héricart de Thury away in my last situation, but am pleased to see how well it does here.—J. LAMBERT, *Powis Castle, N. Wales.*

FERNS.

CIBOTIUMS.

MOST of these are natives of such climes as readily render them fit subjects for the cool house ferneries of this country. The majority of the species are Tree Ferns. One species, however, is not an erect plant. It is a native of South China and various islands. Cibotiums are of easy culture, requiring plenty of root room and good drainage, and for soil loam and peat in about equal parts, the whole made fairly sandy. In the summer they like an abundance of water, and thrive best in the cool fernery. During the winter much less water is necessary, and the temperature should not fall below 50°.

C. SCHIEDEL.—This plant, a native of Mexico, does not make a stem higher than some 10 feet or 15 feet. A plant that I have known for about twenty years has only attained a height of about a foot, so that a specimen of the size named must be very old. It is nevertheless one of the most beautiful Ferns in cultivation, the fronds often being 8 feet and 10 feet long, and from 2 feet to 4 feet in breadth. These are pendulous, the colour being pale green on the upper side, glaucous beneath. It is the most pendulous Fern I know, and for this reason it would be better if the stem were formed more quickly.

C. BAROMETZ.—This, which has been grown in this country for about sixty years, has a woolly decumbent stem and fronds some 8 feet in length when at their full length. They are shining deep green and very glaucous beneath. It makes a very handsome specimen in a cool house.

C. REGALE.—This plant, introduced and put into commerce by M. Linden, makes an erect stem, and that more rapidly than the first species here referred to, the crown being densely hairy. The fronds are very large, arching, and light green.

C. MENZIESI.—This plant is a native of the Sandwich Islands, and with some others was discovered by Menzies at the beginning of the present century. Since then the species of Cibotium in these islands have become scarce, through the collection of the chaffy hairs of the crowns which were sent away to California under the name of

Pala where it was used for stuffing beds, pillows and chairs. This is a very handsome species, the crown of the plant being clothed with whitish woolly scales or hairs, the fronds being long and broad, tripinnate and bright shining green in colour.

There are one or two other species, and all require the warmth of the stove to grow them successfully. W. H. GOWER.

THE FERNERY.

THE time is now at hand when all Ferns will require attention. Those planted out in rock ferneries should be carefully gone through. A good many of the old fronds may be removed before the new ones have started. I do not like to take too many off until the plants have started into new growth, but if thinned out, the new fronds will have a better chance, besides which it is difficult to clean the plants later on without damaging the tender young fronds; this, of course, more particularly applies to the denser-growing *Adiantums* and *Pterises*. Any of the vigorous-growing varieties which are likely to over-grow the choicer sorts should be taken out and replaced by younger plants, or in some cases the Ferns may be divided and replanted. When this is done, as much new compost should be used as possible. In re-arranging the fernery, care should be taken to give those which have any coloured tints in the young fronds the most exposed positions. It will generally be found that those with deep green fronds delight most in shady nooks; while those with red-tinted fronds thrive best when exposed to some sunlight, the tints also being brighter. All the Ferns which are not replanted should have some of the surface soil removed, replacing this with some fresh compost. Many of the *Pterises*, *Aspleniums*, &c., require fresh compost at the base of the stems, for as they advance in growth they form a stem. The new roots come from the base of the fronds, and unless provision is made by adding new soil, or, in the case of pot plants, potting deeper, the young roots perish before they reach the soil. The Tree Ferns will derive much benefit by having some *Sphagnum Moss* bound round the stems. In the case of *Lomarias*, this is the only way to keep the plants in a vigorous and healthy condition. The *Dicksonias*, too, are much improved by this treatment. *Sphagnum* may also be used for the base of *Asplenium nidus* and any others which make those woolly-looking surface roots. Later on, when the plants are in active growth, a little artificial fertiliser may be sprinkled over this Moss, but only in moderate quantities. Most Ferns are benefited by the application of a little manure while they are in a growing state, but it should never be used while they are dormant.

I may here refer to the necessity of giving Ferns plenty of light. All the woodwork and glass of the fernery should be kept as clean as possible. Of all errors in the culture of Ferns, I consider the greatest is the use of green glass, or green shading of any kind. Undoubtedly the green shade casts a hue over the foliage which hides some of the defects which would be seen in clear daylight; but put plants which have been grown under the influence of this objectionable shading beside those which have been grown under clear glass, and the difference will at once be apparent. I should like to have the opinions of other practical growers on the subject of green shading for Ferns.

A. HEMSLEY.

Aspleniums.—Several of the *Aspleniums* may be recommended for winter use. Where plants are required for indoor decoration the *Aspleniums* of the *bulbiferum* type will be found very serviceable, provided the atmosphere is not very dry and the temperature does not fall below freezing point. *A. laxum pumilum* is one which may be particularly recommended, being one of the most elegant in appearance, of free growth, while stock may be obtained from the bulbils, though these are not so plentiful as in some species. *A. bifurciforme* is an-

other useful species. In a young state this is rather thin and straggling, but for larger specimens it is one of the best, and very prolific in bulbils. As a small plant *A. Colensoi* is serviceable, but rather more tender than some. A *lucidum* has fronds of great substance, and will last in a room almost as well as the *Aspidistras*. The species does not produce bulbils, and spores do not germinate freely. *A. flaccidum* makes a fine basket Fern; the long drooping fronds can only develop properly when the plant is suspended. Bulbils are produced in great quantities, and these develop into fair-sized plants while on the parent and add to the appearance of the plant. The true form of *A. bulbiferum* may also be included in this list. The *Aspleniums* all like a peaty compost, and during the summer-time require more shade than the *Pteris*, &c. The plants required for winter decoration may be grown on through the summer in a moist, shady position, and later on in the autumn they should have a drier place and plenty of light. If more attention were paid to hardening plants off there would be less cause for complaint about Ferns not lasting well indoors. This applies particularly to *Aspleniums*, for though they undoubtedly like a moist and rather shady position while they are making growth, they will, if gradually hardened off, last better than many Ferns.—F. H.

ROSE GARDEN.

PRUNING ROSES.

IF any apology is needed for treating upon this subject thus early, it must be that it is of little service to tender advice after the knife has once been among the plants in such a ruthless manner as many still adopt. First of all, we must bear in mind what the object of pruning Roses is. There is a considerable art in pruning Roses, and it needs a wide experience of such work if one is to secure the very best results. The peculiarities of each variety, also whether quality or quantity of flower is to be the main object, or whether a medium result is wanted, all have to be considered. Among the numerous varieties of Roses now cultivated there are some which bear scarcely any pruning, while others need to be cut back hard if satisfactory results are to follow.

I will not touch upon Roses grown under glass, as in whatever temperature these may be growing, they should all have been pruned before these notes can appear. Then the time of pruning must depend in a great measure upon the season, also the district and situation that the Roses occupy. In the warm southern counties like Devonshire, Dorset, and Cornwall, also those in the western part of England, such as Somersetshire and the southern portion of Wales, pruning may be done quite two to four weeks earlier than in the midlands and eastern counties; while further north it would be a little later still. From these data my readers will discover that no hard and fast lines can be laid down. Indeed there are few things in the cultivation of Roses that rosarians differ upon so much as the time for and method of pruning. I propose to divide this paper into three sections, first treating upon the earliest flowering varieties like those of the China, Banksian, and Austrian Brier classes; next upon the Teas and Noisettes; and lastly, the Hybrid Perpetuals and Bourbons.

The first of these classes contains Roses that need pruning in distinctly different ways. The compact-growing Chinas should have all of their weak wood removed, and the remaining growths cut back to about one-third of their original length. Weak growth will only produce a few inferior blooms, and these will be amply made up for by the better quality of those produced upon the stronger wood. The stronger-growing Banksians and Austrian Briers, on the other hand, will only need to have their shoots thinned out and the immature points of the strongest removed. Although all three classes flower best upon the ripened growth of last season, the Banksians and Austrian Briers more particularly need to be well ripened if a full crop

of bloom is to be secured. A good time, one season with another, for pruning these is the end of March. The Teas and Noisettes also need two different styles of pruning. The shorter the grower, the harder it should be pruned. Such varieties as Anna Olivier, Mme. Lambard, Marie van Houtte, &c., may be pruned similarly to that described for the Chinas; while Souvenir d'Elise Vardon, Comtesse de Nadaillac and others should be pruned closer. In these classes, too, we find some extra strong growers like Maréchal Niel, Mme. Berard and William Allen Richardson; these need pruning in the same manner as the Banksians, but not quite so early, the middle of April being a good all-round time. But, as I have previously remarked, this must be regulated somewhat by the season and locality.

We now come to the Hybrid Perpetuals and Bourbons, and I will dismiss the latter class at once by saying they should be pruned rather harder than the medium-growing Teas and Noisettes. The Hybrid Perpetuals also contain weak, medium and extra strong growers. The two first need somewhat hard pruning, but in the last, which contains such varieties as Mme. Gabriel Luizet, Magna Charta and others which make long flowerless shoots from their base, the older wood should be removed and full scope be allowed to the younger growths. These should be pegged down in as horizontal a position as possible, and will then flower throughout their whole length; while at the same time plenty of room will be left for more long growths, which will also spring from the base. Always cut back to a sound eye, and if possible let it have an outward direction.

R.

THE DATE FOR THE "ROSE DERBY."

As prominently connected with the question of the date of the metropolitan exhibition of the National Rose Society now being so vigorously discussed in the gardening papers, may I be permitted to offer a few remarks and a friendly criticism.

We must not individualise. It is not a question of what date suits Smith, Jones, or Brown. We must take a broader view than this. The case for the later date rests principally on these grounds: (1) The society claims to be "national." (2) The metropolitan show is the "Rose Derby" of the year. (3) The "Rose Derby" should be held at the height of the Rose season of all England; not a small part of it, for the society is "national." (4) The "Rose Derby" this year is fixed for July 1. (5) Can either July 1, 2, or 3 be considered the height of the Rose season?

When is the height of the Rose season? If the most popular dates, if the dates on which there is the greatest clashing of Rose shows be any criterion as to the height of the Rose season, then from a return based on the last eight years, July 8 and 9 are the most popular dates, more shows clashing on these dates than on any other, and, therefore, presumably the height of the Rose season. I have exhibited at every "Rose Derby" from the first show held in the St. James' Hall in 1877, and my experience leads me to the same conclusion, viz., that the height of the Rose season is July 8 and 9.

Now for a little friendly criticism. What special advantages does Mr. Grahame possess whereby to form his opinion as to the height of the Rose season? Has he a lengthened experience? No; his name first appears as a member of the National Rose Society in 1889. (2) Has he a large Rose garden, growing plants in different situations? No; he describes his garden as "being of the most diminutive size." (3) Does he grow his Roses in such a way as to lengthen his Rose season, cut-backs followed by maidens? No; he says in reference to maidens, "I have no room to try such experiments." (4) Does he visit, other than the two provincial shows of the N.R.S. in 1891 and 1892, the Rose shows north of the Trent and so ascertain the high standard there attained in the latter half of July? No; he says in reference to attending these shows, "I am not anxious to compete out of my proper district." Herein, I think, lies the reason for the course he has taken. If his "proper dis-

trict" was less circumscribed, if he ventured once now and again to visit northern shows, he would know the strength of the north. He would know on what date the northerners are at their best. He would not class Messrs. Burch, of Peterboro', with "other northerners," seeing Peterboro' is 70 or 80 miles south of Worksop. He would know that the midlands, except in certain localities, is the latest of all districts. He would know the Cants do not show north of the Trent "late in the season." He would know the grand displays of 72's exhibited at the late shows by Messrs. Harkness, Merryweather, Perkins, Dickson and Cocker. He would remember if he had been there the magnificent Charles Lefebvre exhibited by Mr. Machin last year on July 30, and when he knew all this he would desire to see such Roses exhibited at the "Rose Derby" of the year.

I am sure Mr. Grahame will take my criticism in good part; a difference of opinion should not make us worse friends. But I cannot forbear speaking my mind when I observe him stating time after time that which I feel sure he would be the last to state were he not drawing upon his imagination rather than speaking from experience.

JOSEPH H. PEMBERTON.

NATIONAL ROSE SOCIETY.

THE NORTHERN AND SOUTHERN EXHIBITION CONTROVERSY.

I THINK those on the southern side may consider they distinctly scored by Mr. Machin's acknowledgment "that the metropolitan date at present best suits the majority of members of the N.R.S." This is a very important concession on his part, and it is what I have contended throughout, its importance being in the fact that if the present date in July suits the greatest number of our society's exhibitors, it must, as a matter of course, also almost assure us the very best show of Roses possible at the Crystal Palace—a matter of the utmost importance to the society itself, and also to those members who are not exhibitors. But I go even further than this, and hold that if the date be on or about July 8 in an early year our metropolitan show may be a failure, because the northern members, who are under 20 per cent. of our subscribers, and half of them not exhibitors, could not possibly make up for the absence (which will be inevitable in an early season) of the southern growers on light land.

In order to prove that I have good reason for making this statement, I will here give an extract from our official report on the metropolitan exhibitions of 1887 and refer to that of 1889, these being the last two years when we had early seasons.

The report of committee for year 1887 (show having been held July 5, 1887) said:—

The metropolitan show was nearly as extensive as in recent years, but the quality and size of the flowers, owing to the severe drought then prevailing, proved much below the average standard.

In the report of committee for year 1889 it is stated that the Sheffield show on the 18th proved a poor one, "owing to the earliness of the season." Last year (1892) was said to have been a late season, but the Crystal Palace show on July 2 was by far the largest on record. The classes were very well filled and the competition keen. I know that in two out of five classes I entered in there were thirteen competitors, and I think eight or nine in the other three classes, these numbers being exceeded in others, showing that the date suited most rosarians.

I am glad to hear that Mr. Machin thinks the date of the provincial show at Worksop will suit the rosarians in his district and be likely to attract a large attendance, but unless it be a very late season the southerners are not likely to be in good form at that date.

The question of the retention or otherwise of the Tea Rose show at the Drill Hall, Westminster, is one that I must leave to others to discuss. I would myself prefer the money value given there in prizes being either transferred to the National

Rose Society's provincial show for extra competition—by which that show would be much improved and made more attractive to everyone—or that it be given later in the year to a new Rose meeting in London at the end of July or beginning of August, more especially for growers on late soil and large cultivators of maiden plants.

The subject should be well thought out and some alternative plans prepared for discussion this autumn.

CHAS. J. GRAHAME.

Croydon.

Rose Her Majesty.—I believe this Rose to be better adapted for growing on a pillar than in any other form. I have one plant growing in this way. This was planted five years ago, and although there are better pillar Roses than this one, I get a greater number of flowers from it than I do from examples growing as bushes. As a pillar plant Her Majesty shows its perpetual character more than in any other form. I invariably get two or three flowers in the autumn. It must also be a very hardy Rose, for it stood uninjured through the past two winters, while on pillars each side of it climbing Bessie Johnson and Princess Louise Victoria were nearly killed. It is very clear that this Rose resents hard pruning. Hard cut-back plants may perhaps give one or two larger flowers, but there is a less number of them. The fact that this fine Rose is so subject to mildew, and that the growth is exceedingly stiff, makes the plants when grown as dwarfs anything but attractive. The best way to treat it is to well nourish the roots, and only cut the branches back sufficiently to bring the plants a little into shape. When it was first sent out I grew a plant under glass with its roots in a good border, but during the summer the growth was constantly white with mildew, so at the end of two years I rooted it out.—J. C. C.

GARDEN FLORA.

PLATE 895.

EVERLASTING PEAS.

(WITH A COLOURED PLATE OF LATHYRUS GRANDIFLORUS.*)

THE genus *Lathyrus*, which now includes *Orobus* and *Platystylis*, is a very large one, comprising, according to some authorities, about 170 species, although Bentham in "Genera Plantarum" reduces the number to 100. These include a large number of annual species, very few of which are worthy a place in the flower border, the best by far being the Sweet Pea (*L. odoratus*), of which we have innumerable distinct and very beautiful varieties in our gardens. The section *Orobus* differs from *Lathyrus* proper in the absence of tendrils. In the following notes we have confined our remarks entirely to the perennial Peas of a tall growing or twining character. *L. rotundifolius*, *Sibthorpi*, *grandiflorus*, *latifolius*, *magellanicus*, and *tuberosus* we consider the best selection, and if confined to three we should choose *grandiflorus*, *latifolius*, and *rotundifolius*. They are all perfectly hardy, and require no special attention when fairly started into growth. It is necessary, however, to see that they are staked as soon as they begin to grow, and it may be necessary to assist them in getting attached to the supports, whether stakes or trellis. They may thus be used with good effect in mixed borders, and as they flower freely they are valuable for cutting from. Most of the species ripen seed freely, but all may be divided either in autumn or spring.

* Drawn for THE GARDEN in the Royal Gardens, Kew, by Champion Jones, June 20, 1892. Lithographed and printed by Guillaume Severeyns.



LATHYRUS GRANDIFLORUS

L. GRANDIFLORUS, as may be seen from the accompanying coloured plate, is one of the choicest of Everlasting Peas. In many respects it resembles the Sweet Peas of our gardens, but differs chiefly in having a perennial root, the stalks neither winged nor flattened, the leaves broadly oval, not lanceolate oval, the flower-stems shorter, and the flowers considerably larger. Its introduction is somewhat obscure, the raisers believing that they received the seeds from Leghorn. It is certainly, however, a native of Europe. Italy, Sicily, and other parts of the Continent are given in botanical works as localities for this handsome Pea. It is certainly one of the hardiest of the genus, and from its neat and extremely free flowering habit a very useful and attractive border plant. The stems are much-branched, climbing, square, with somewhat rounded angles not at all winged or hairy. The flowers are very like those of the Sweet Pea, but larger and of a brilliant bluish crimson. *L. grandiflorus* well deserves a place as a choice border plant, and if a little pains be taken to train the plant early up branches or trellis-work, it forms a neat and very attractive object.

L. LATIFOLIUS is the Everlasting Pea of our cottage gardens, where it may be often seen covering the doorways or trellis-work with its lovely large rose-coloured flowers. Its broad ample foliage yields a sweet fodder, and it has often been recommended for this purpose, but as a field crop we believe it has proved a failure. There is a white-flowered variety in gardens. *L. ensifolius* is a variety with very narrow leaves and smaller flowers, and *platyphyllus*, a useful variety, differing from the type in its longer stalks and absence of reticulation in the seed-pods.

L. SYLVESTRIS is inferior to *L. latifolius* as a garden plant, but the variety *Wagneri* is largely grown on the Continent as fodder, and is, we believe, highly recommended.

LORD ANSON'S PEA (*L. magellanicus*) is the most beautiful of blue-flowered Peas in cultivation. In many gardens a particularly bright form of *L. sativus* will be found doing duty for Lord Anson's Pea, which is a true perennial, almost evergreen, glabrous and glaucous, the stem and leaves being covered with a bluish bloom. It grows from 3 feet to 5 feet high, the stems furrowed or triangular and woody. The flowers, many in a bunch, are of medium size, bright violet-blue with darker veins. Few plants of this class are more worthy of a place in the garden than Lord Anson's Pea, as much on account of its neat habit as the striking beauty of its flowers, which open in June and continue until the end of July. This species is said to have been originally introduced by the cook of H.M. ship *Centurion*, commanded by Lord Anson, in 1741, and was cultivated by Philip Miller in the Botanic Garden at Chelsea. It appears, however, to have been lost shortly afterwards until re-introduced by the Royal Gardens, Kew, a few years ago. Miller called it *Pisum americanum*, and both his account and that of Lamarck are imperfect, but there is little doubt of its identity, as the wild specimens gathered by Sir J. Banks and Solander differ from cultivated specimens only in being much smaller. It is nearly related to *L. sessilifolius*, a Chilean species, and, together with other species from Chili and our native *L. pratensis*, forms a distinct group. At the Fulham Nurseries in the early days it stood the winter against a wall. It is a maritime species, and a little salt may help its growth under cultivation. It ripens seed freely, by which means it can be readily increased, as it may also be by division. It is a native of Port Desire, in the Straits of Magellan, and is probably not hardy unless planted near a wall or house.

L. PRATENSIS (the Meadow Vetch) is a well-known plant in gardens. It is the Ramping Wild Vetch of Parkinson because of its being the "most pernicious herbe that can grow on the earth, killing and strangling corne or any other good herbe it shall grow by." It is common in moist meadows and is useful for damp shady places on the rockery or border, where its particularly bright golden yellow flowers are very attractive. It is excellent for banks, rooteries and such-like places.

L. ROTUNDIFOLIUS.—This very beautiful perennial Pea, though introduced in 1822, was not noticed by Aiton. It is the *L. miniatus* of Stev. and *peduncularis* of Poir., and is certainly one of the most charming plants of its kind in cultivation. Its flowers, produced in great abundance, for brilliancy and delicacy are unsurpassed by those of any other Pea known to us. It is a widely distributed species, and may be variable both in habit and flowers. It is well known throughout Asia Minor, the Caucasus, and, according to Boissier, it extends to Northern Persia. The leaves are nearly round, and the flowers, which are produced in large clusters, are bright rose-pink, about an inch in diameter, and open in early June. The variety *ellipticus* is inferior to the type, the flowers being smaller, darker, and with a decided purple tinge. It appears to have been cultivated in the Birmingham Botanic Garden in 1836. *L. Drummondii* seems to be synonymous with *L. rotundifolius*.

L. SIBTHORPI.—Although substantially little more than a variety of *L. rotundifolius*, it is distinct enough for all garden purposes. It is in fact intermediate between that species and *L. latifolius*, and has not, so far as we know, been matched with any wild specimens. It has been in cultivation at Oxford Botanic Garden for many years, and is said to have been introduced by Sibthorp. Boissier in "Flora Orientalis" gives Constantinople as a locality for *L. rotundifolius*, by which he may mean the form known as *L. Sibthorpi*, the true *L. rotundifolius* being confined to the Caucasus and the Crimea. The stems are twining, broadly winged, the pair of leaflets oblong, about twice as long as broad, the stipules narrowish with large spurs, the numerous racemes of five to six flowers being of a beautiful mauve-red, fading to violet. It flowers a month earlier than *L. rotundifolius*, and may be increased by division or seed.

L. TUBEROSUS (the tuberous Vetchling) is a charming low-growing species, producing numerous flowers of a bright dark pink. It is found in many of our cornfields, and is cultivated in Holland for the tuberous roots, which are said to be edible. The tubers are about 2 inches long, broadest at the root end and tapering to the apex. It will be found a useful plant for the flower border, it being a true perennial, of neat habit, and very free flowering.

Other species are *palustris*, *heterophyllus*, and the charming *maritimum*, which is well worth a place among marsh-loving plants.

D. K.

THE WEEK'S WORK.

HARDY FRUITS.

RASPBERRIES.—It is not often that well-matured canes are injured by frosts, but they were badly crippled during last winter, and for this reason it has been advisable to defer the final thinning out, shortening and training till there is less likelihood of damage being done. It is worthy of note that the canes of the tall-growing varieties, and which were closely tied to a stout wire fence, suffered the most from the frosty winds experienced last winter, not a few of them being ruined outright and many more badly weakened. The same varieties bundled up to tall stakes were less affected by frosts. All the same, the fence system of training is that most generally recommended and adopted. For the taller growers, such as Prince of Wales, Rivers' Hornet and Superlative, these being planted in rows not less than 5 feet apart, strong stakes of a similar height are needed, disposing these about 15 feet apart. A strong wire should be strained or light stakes be fastened along the top of these, and another one 2 feet lower down. To these the best-placed canes may be tied 6 inches apart, or, better still, be arranged 4 inches apart and shortened to different lengths, only about half being left to the full height of the fence. Thus treated, there will be quite a perfect hedge of fruit, the fruiting shoots being produced by the hardest pruned canes right down to the ground.

When the clumps have each a strong stake given them, select about six of the best canes, shortening these to different lengths, as advised in the case of those fence-trained and for a similar reason. Such sturdy growers as Baumforth's Seedling, Fastolf and Carter's Prolific, if given good room—the rows being not less than 4 feet apart—really require no supports of any kind. The canes should be freely thinned out and then shortened, the strongest to a length of about 3 feet and the rest to 2 feet or thereabouts. During the summer the heavily laden canes may spread out somewhat, but they never break down to the ground.

NEWLY-PLANTED RASPBERRIES.—In no case ought these to be allowed to bear fruit this year. Unless the canes are cut down to within 6 inches of the ground, the chances are no suckers will be thrown up, and it need hardly be added that there will then be no fruiting wood for the following season. Too often newly-planted canes are allowed to bear fruit the first season, and never recover from this senseless treatment. Nor is it always advisable to heavily crop any canes that may have been produced the first summer after planting. Unless exceptionally strong, the latter should be cut down to within 18 inches of the ground, with the result that a few bunches of fruit and a very much stronger sucker growth will be obtained, those owning them being considerable gainers in the end by this treatment. Novices ought, perhaps, to be told that canes which have borne or attempted to bear fruit last season ought ere this to have been cleanly cut out, as these have done their work and are dead.

AUTUMN-FRUITING RASPBERRIES.—Autumn crops are sometimes produced on extra strong early canes of the current season's growth, but in order to be more certain of this occurring, the ripened canes now existing should be cut back to within 6 inches of the ground. Baumforth's Seedling will frequently give both a summer and autumn crop without any cutting down being resorted to, but when the canes fruit the same season as formed, they cannot be depended on to fruit freely again the following summer. The October Red cut down now will not fail to give a good autumn crop, and is quite worthless for summer fruiting.

MANURING RASPBERRIES.—Although Raspberries are apt to fail on cold and rather wet ground, they yet require plenty of moisture during the growing period. Nor ought they to be starved at the roots. A heavy mulching of strawy manure applied after the pruning and tying have been completed will serve to conserve moisture, and the juices from it being washed down to the roots by spring rains will greatly stimulate a healthy, productive growth. Unless the beds are so mulched the chances are the fruit during a moderately dry season even will fail to swell to anything like its full size. On no account should any manure be dug in. Raspberries are essentially surface-rooting plants, and if either a fork or a spade is used between the rows large numbers of surface roots will be destroyed and much harm done.

STRAWBERRIES.—Severe frosts without any snow on the ground have had the effect of greatly loosening the young Strawberry plants, and seeing that these require to be both firmly fixed and to have a rather solid root run, something ought soon to be done to correct the looseness now apparent. When the ground is in a fairly dry state, or will not lift up badly when trampled upon, all small Strawberry plants should be refixed, a heavy rammer being better for the purpose than a man's foot, after which the surface of the bed ought to be lightly stirred with a Dutch hoe. A light mulching of short litter would effectually prevent any further loosening of the ground by frosts. On deeply-dug, loose soils Strawberries are apt to form more strong leaves than desirable, this usually being at the expense of the crops. It ought not to be possible to easily drive in an ordinary walking-stick to the full depth of the cultivated ground, but if it is, then ought steps to be taken towards making the ground firmer. The ground not merely about the plants, but throughout the beds being heavily trampled, this firming will conduce to the formation of very many more

root fibres and a far sturdier fruitful habit of growth, the bunches of fruit being thrown out well beyond the leaves instead of being smothered by the latter, as heretofore. Where too much leafy growth is usually produced, there should be no surface manuring or mulching done as yet, but strong old clumps that are showing signs of exhaustion may well shortly have a mulching of half-rotten manure. If this is deferred much longer the chances are the plants would derive no benefit from the manuring beyond being kept in a moist state; whereas the roots require some food washed down to them directly, or even before active growth commences. A good soaking of sewage water or other rather strong liquid manure given now or when there is no frost in the ground would not be wasted on old Strawberry beds.

W. IGGULDEN.

THE KITCHEN GARDEN.

SPRING CABBAGE.—These have evidently in some quarters had a decided check, the recent severe weather having left its mark, especially on those in a forward state. On some soils, especially those of a light description, the root-hold will have been greatly weakened by the upheaval of the soil caused by the frosts, and as this is much against the plants becoming quickly established, the soil should be closed in about the stems. The root-hold being so loosened hoeing may be deferred for a short time longer, but directly fresh growth is seen to be taking place, then is the time to encourage the crop as much as possible by giving a thorough hoeing, growth, weather permitting, taking place freely afterwards. A little guano and soot sprinkled about the plants will greatly assist the growth, this being followed by another hoeing, the soil also being drawn up to the stems on each side. Nitrate of soda, if it is thought other assistance is needed, may be given a little later on. If there is the least tinge of blue in the foliage it is a sure sign that such assistance is needed, and the crop will be benefited accordingly both in quality and earliness. Plants left over in the autumn and pricked out come in useful for filling up gaps or forming another breadth for succession. More seed should be sown in heat either in a box of light soil or on a gentle hotbed, the latter for preference, as the little plants will grow ahead, and after being hardened off may be planted out direct.

SPINACH.—This crop is greatly depended upon during the early months of the year. Taking it altogether, winter Spinach was good before the frosts came on, so with ordinary care it should now do well. The whole bed should be gently trodden over, pressing the foot against the plants so as to fix them thoroughly, afterwards lightly hoeing the surface. As soon as growth commences a little soot and guano will be beneficial. If the plants have been hard cut do not be in too great a hurry to pick every leaf that forms, as it is this close picking which prevents the plant from being quickly re-established. The plants from the late sowing not having a deep root-hold will be sure to be considerably loosened, and if not made firm they will fail to become established. It will depend upon the weather whether seed may be sown now, but if the soil is in free working order a sowing should be made on a south border, this ensuring early germination.

LARGE ONIONS.—If anyone desires the very large Onions as seen at exhibitions, the seeds will now have to be sown in pans or boxes which should be efficiently drained and filled firmly with soil. A gentle watering should be given and the pans placed in a fairly warm pit or even on a gentle hotbed. Grow the seedlings on steadily near the glass, eventually potting off singly into 3-inch pots, or if sown in boxes they may be allowed to remain and be planted out direct from the boxes after being hardened off. These Onions require well looking after and good culture after they have been planted out. The autumn kinds may also be sown now thinly in boxes, to be planted out when large enough. These in the end will catch up those sown in the autumn, that is under good treatment. If by any chance the autumn sowing

was neglected, the deficiency should now be made good in the way stated.

EARLY CELERY.—A row or two of very early Celery will prove acceptable in the majority of establishments, but unless it can be well cared for it may turn out useless in the end by running to seed, and this perhaps through a check received in its very earliest stages. To ensure this early Celery proving serviceable, a little seed should be sown thinly in a pan or box. The seeds should be sown as thinly as will enable each little plant to stand out by itself. If placed in a gentle heat the seeds will not be long in germinating. The seedlings should be grown on near the glass in the same temperature, and not be exposed to cold draughts in a cold house. Keep them well supplied with water, afterwards placing in a cooler structure. Eventually prick them out into other boxes of rich soil, or even low frames where they will succeed well. If kept well supplied with water and grown in a genial temperature, free-growing plants that will not bolt will result.

A. YOUNG.

PLANT HOUSES.

POTTING BULBS.—**AMARYLLIS.**—All needful work in the way of potting in the case of the fine spring-flowering hybrids should be proceeded with at once. In some cases it is just possible that signs of activity have already manifested themselves. If, however, it is but little advanced, no harm will come to the young growth, which in the case of flowering bulbs will or at least should be the flower-spikes in advance of the foliage. In dealing with such it is advisable to be cautious, not resorting to the extreme measures of removing all the soil if it and the roots also are still in good condition. The large growers of these handsome bulbous plants make it a custom as a rule to entirely shake the bulbs out every spring when they have once had a resting period. This is done most successfully without the slightest doubt, and can be generally adopted where a sufficient number is being grown to allow of a compartment to themselves, so that the bulbs after potting can be plunged in a gentle bottom-heat to induce fresh root-action after the change of soil and the loss also of at least a few roots. When, however, a few dozen only are cultivated, it is hardly advisable in my opinion to shake them out entirely every spring. In such cases the bottom-heat accommodation cannot always be conveniently spared, without which after potting they will not start away so kindly. I cannot say that I am converted to the annual change of soil in every case; hence I have given the foregoing opinion on the subject. One great mistake most undoubtedly is that of over-potting; no greater blunder could hardly be made, save that of excessive watering, in the ordinary course of cultivation. Once over potted and the roots in a bad state as the result thereof, it will take a season or two to bring the bulbs round again. When shaken out entirely, all the dead scales and unhealthy or dead roots can be removed effectually, but this is hardly needful every year.

The soil I use for them is chiefly loam, and that as good as I can get it; silver sand or road scrapings should also be added. If the loam is not of the very best a little peat should be added, being better than leaf-soil for fear of wireworm in the latter. A small amount of cow manure that has been dried might be added to the loam as first advised, but rather than have any excess it had better be absent altogether. Those who have not this material at hand suitable for the purpose had better use a small amount of bone-meal instead. After potting, when no bottom-heat is employed, a sunny position upon a shelf with a temperature of about 55° at night, or at the most 60°, will suit them very well; less than this will suffice with a gentle bottom-heat. Watering must be performed with very great care for some weeks; in fact at all times this advice is applicable. Young plants that have not thus far had any rest at all from the seedling stage should, if in need of a shift, have it given them at once. I have some in this state now which will be

transferred as soon as possible from 3-inch into 4½-inch pots. Others in 2½-inch pots from seed sown last autumn will soon be fit for 3-inch pots, whilst flowering bulbs which have only had one rest will be partially shaken out and repotted, possibly giving from 6-inch to 8½-inch pots in the case of the larger ones; beyond this latter size even more discretion is needed.

GLOXINIAS.—The most promising of these may now be shaken out and repotted; the best in all probability will be those started the earliest last year. If the bulbs have been kept tolerably cool and not excessively dry, they will not be found shrivelled. Where, however, any do not handle firm they should be soaked in warm water before being potted afresh, this being altogether better than giving water directly afterwards to gain the same ends. When potted keep them well up to the light in an ordinary stove temperature. If stood under other plants that are being syringed they will receive more water than is good for them, whilst the growth in such cases becomes drawn at the very first, a circumstance that should be avoided. Failing room in the stove, a vinery shelf where the temperature is nearly about the same will suit them quite as well. Leaf soil may be used with these, or, failing that, some peat, good loam and sand forming about two-thirds to one-third of either peat or leaf soil. Pot firmly and keep the bulbs just buried in the soil to encourage surface rooting as much as possible.

CALADIUMS.—Where there is a good stock of these, a portion at least may now be started. If shaken out in the autumn, it is easy to see which are the best suited to starting now. Small pots in comparison to the bulbs are better for starting them in than larger ones, even in the case of intended specimens, it being an easy matter to put two or three together afterwards. The soil should be as good as possible, although it need not be so fibrous as in the case of plants that make a more enduring growth. In addition to loam and leaf soil, some horse droppings may be used or spent Mushroom-bed manure. I have found them to take kindly to the latter when I was growing specimens. The warmest place in the stove should be given them, with a little bottom-heat if available. In the case of *C. argyrites*, it is just as well to defer starting for a few weeks yet.

MISCELLANEOUS BULBS.—Of these, *Urceolium aurea* and *Griffinia hyacinthina* should now be potted, treating them similarly to the *Amaryllis* in this respect, but keeping them afterwards in the stove. *Montbretias* and *Tritonias* should also be potted up in good time where grown under this method, being afterwards kept quite cool, plunging over the surface of the pots in cocoa fibre being a very good plan. The latest of *Gladiolus The Bride* (*G. Colvilli albus*) should now be potted, or they will suffer a check not easily got over afterwards.

J. HUDSON.

ORCHIDS.

We have now arrived at the time of the year when it will be necessary to see that the shading is prepared. Some persons use the shading in winter, but I do not think this is desirable, and have always recommended it to be taken off to prevent its decaying. The shading material is well dried before taking it down, and we keep it in a dry airy shed. A note is made of all the blinds that can be repaired, and also of those that must be renewed, and they should all be seen to before the middle of the present month. After the middle of February it will not be safe to leave the cool house unshaded—that is if it is exposed to the sunshine. A lean-to house with a north aspect would not require to be shaded for a month or six weeks later. Some persons are not in a hurry to get up their blinds, and in truth they are not much needed at first, but in early spring we have in the same day bright sunshine and keen frosty winds; therefore, it is better on such days to use the blinds than to admit air too freely to keep down the temperature to what is thought the right thing for the season.

All our Orchid houses are provided with laths fixed on iron standards about 6 inches long; the laths run parallel with the rafters, and support the blinds above the glass, allowing the air to circulate freely between the blinds and the glass. This arrangement keeps the temperature much lower in summer than if the blinds were allowed to rest upon the glass. The shading for the cool house and the East India house might be a little thicker than that used for the Cattleyas. The Mexican Cattleyas and *Laelias* need the very thinnest of shading. Outside blinds and rollers that can readily be run up and down are the best. It is better to dispense with pulleys, which are liable to rust and stick fast. The blinds should be nailed to rollers at the end of which is a deeply grooved wheel. The cord intended to draw up and let down the blind is fixed in the grooves. The wheel must project beyond the ends of the house. Some persons fix shading inside the house, others paint the glass with some kind of mixture, but all these permanent shadings have the serious objection of excluding the light in dull cloudy weather; whereas the movable shading is only used when it is actually needed. At midsummer it is much needed, but in March and April as well as in the autumn months there are days together when the shading is never used, and even in the early and late months when the weather is clear the blinds are not needed above four or five hours each day. It is not safe to expose any Orchids too freely to sunlight early in the year, for they are rather sensitive after having passed through a long period of rest, it not being possible to air freely in winter, and for a week or so at a stretch they have had scarcely any light. Now, with the longer days, they will gradually be inured to bear the full amount of light.

We have finished the surface-dressing of cool-house Orchids, and a few of them have been repotted, amongst them some *Masdevallias* of the *M. Harryana*, *M. Veitchiana* and *M. ignea* types. It is rather curious how the variety *M. ignea superba* grows out of the soil; each new leaf produced grows more and more upward, and the plants require to be more deeply planted in the peat and Sphagnum at each time of repotting. This and next month all *Odontoglossums*, such as *O. crispum*, *O. gloriosum*, *O. hystrix*, *O. triumphans*, *O. Pescatorei* and others of this type, should be repotted if they need it, or are likely to need it. Spring or autumn is the best period, perhaps, to repot these Orchids, but I have repotted old-established plants and newly-imported ones in almost every month of the year with success. It is difficult to make some people believe that the pots and drainage material should be sweet and clean if anything like permanent success in Orchid culture is to be obtained. New flower-pots should be soaked in water ten or twelve hours and be allowed to become quite dry before being again used. The smaller cool house *Odontoglossums*, such as *O. Rossi* and *O. Cervantesi*, may be planted in the small shallow pans now so much used, or in teak baskets, and be suspended near the roof glass. Since finishing up the work in the cool house we have had work for some days amongst the Cattleyas and other plants in the Mexican house. Some persons can afford an entire large house for Cattleyas alone, but we grow nearly all Orchids requiring a Cattleya house temperature in this house, besides numbers of Ferns in variety and other ornamental foliaged and flowering plants. To the Orchid fancier a house entirely set apart for his favourite plants is eminently satisfactory. They are interesting to him at rest and in growth, as well as when they are in flower; but for general purposes Orchids can be grown quite well with a collection of other plants, that is if they are kept clean. I have discarded several plants from the house because they are liable to be attacked by thrips. This parasite should be kept out of the Orchid houses at all costs. We have been dipping the entire stock of plants of *Miltonia vexillaria*. This is more liable than any other occupant of the Cattleya house known to me to become infested with yellow thrips. My plan is to dip the plants about once in six weeks or two months as a precaution. Some of the *Miltonias* are showing their

spikes. *M. Roezli* has also been attended to by dipping, and all the plants have been surface-dressed. *Odontoglossum citrosmum* is now starting to grow, and the plants will need a fair supply of water at the roots. They have been kept quite dry during winter, care being taken to give them enough water to prevent their shrivelling. It should be noted that with the growths the spikes also appear and they are very slender; instead of pushing upright they hang, if not supported, downwards over the sides of the pots. In fact, they are much more effective when planted in teak baskets and the spikes allowed to hang down.

J. DOUGLAS.

STOVE AND GREENHOUSE.

THE TREE OR PERPETUAL-FLOWERING CARNATION.

TREE OR PERPETUAL-FLOWERING CARNATIONS require good cultivation to bring them up to the standard of excellence we see in the best flowered plants, and such as were exhibited by Mr. Jennings, gardener to Mr. Leopold de Rothschild, of Ascott, Leighton Buzzard, at the Royal Horticultural Society's meeting at Westminster on January 17 and on other occasions. Amateurs attend the meetings and see the plants exhibited, and think that all they have to do is to order so many plants, and fancy that they also should have such in their gardens in due course.

An amateur wrote me the other day inquiring what kind of house he ought to construct in which to grow his winter-flowering Carnations. The form of the house is the first consideration, and all my experience shows that the span-roofed form is the best. The Carnation likes free ventilation on all sides, and no other house gives this so well as the span-roofed one. Light is also of much importance, for in winter we get all too little under the most favourable conditions, and the span-roofed house admits the largest proportion of light to the plants, exposing, as it does, the most glass surface. On the other hand, it requires more hot-water pipes to heat the same number of cubic feet of space in a span-roof than it does in a half-span or lean-to. This is a small matter, the first extra cost not being very much. Next to the span-roof, I prefer the half or three-quarter-span, and lastly the lean-to, and good winter-flowering Carnations can be grown in all of them. We have two span-roofed houses here, and both of them answer admirably for Carnations; we have flowers of them all the year round. The length of the house does not matter so much. Ours are 50 feet long; one of them is 12 feet wide and 9 feet from the floor-line to the apex of the roof. There are 2 feet of brickwork from the ground-line, and on the top of the brickwork comes the staging for the plants. The side sashes are 2 feet 6 inches, woodwork and glass included. There are four rows of 4-inch pipes under the stages, which are 4 feet wide, and close to the glass roof, near the base of the rafters, are two rows of inch pipes for hot water. When I say four rows of pipes under the stages, I mean two rows on each side. There is what is termed a lantern-roof, the top of which opens the entire length of the house all at once by a rod and lever. The side upright sashes open all together in the same way, and they can be opened to the smallest or their utmost extent. The larger house is 20 feet wide, with stages all round it and one in the centre. The glass upright sashes are 3 feet high, but all the arrangements are the same in other respects; there are also six rows of 4 inch hot-water pipes. The houses have been well constructed of the best seasoned timber by a first-class firm of hothouse builders, and have been no trouble to us whatsoever. It may be that such houses cost a little more at first, but they are the cheapest in the long run. We are just putting in our cuttings, and at this season of the year it requires a frame or propagating house for them. From the time the cuttings are rooted until the plants are in flower they should receive no check

to their growth, and it is here that the patient, careful cultivator has an advantage over the careless man, for if checked in their growth at any time they lose vigour and require time to regain it. The small side growths are slipped off, planted in fine sandy soil, about a dozen of them in a 5-inch pot, and plunged in a gentle moist bottom-heat until they are rooted. Some varieties form roots more freely than others, and it is well not to put more than one variety into each flower-pot, for it is awkward to have one set with roots and the others in the cutting state at the same time. As soon as it is seen roots are formed, the young plants should be placed on a shelf near the glass roof. Pot them off singly into small pots three or four days after and place them again in a position near the roof glass for a week or ten days. They will be well established by that time and should be removed to the greenhouse, where air must not be admitted too freely at first. Repot them when they need it, for if the young plants become pot-bound, this will be another check for them.

I have before given full details of the culture of these plants, and can only say again that success depends entirely on careful attention to all the details of the work. For instance, when the plants are under glass, especially in heat, and where air is not freely admitted, they become infested with green fly, which does much harm to them if it is not carefully removed either by dipping the plants in soft soapy water or fumigating them. The next point is to gradually inure the plants to stand first in an airy greenhouse, and after the middle of May in the open air. The plants should remain in an open position outside until the middle of September, unless some of the flowers open by that time, when they should be placed under glass to cause them to develop better. A good deal depends on the quality of the potting soil; it should neither be too light nor too heavy. We use good fibrous yellow loam mixed with decayed manure and a little brown fibrous peat; leaf-mould and enough coarse sand should be added to keep the compost open. As soon as the plants are placed on the stages in the house it is better to fumigate them as a precaution. A temperature of about 50° to 55° as a minimum is the best for them, and the atmosphere should be rather dry. Admit as much air as possible even on cold days.

J. DOUGLAS.

The *Cyrtanthuses* are an interesting family of Cape bulbs, and at Kew *C. carneus* and *C. lutescens* may be seen in bloom. They are not difficult to grow, and if the pale flesh and yellow-coloured flowers of *C. carneus* are not very attractive, those of *C. lutescens* are remarkably pleasing. They are of a rich yellow colour, tubular, and borne freely on the stout stems. A few plants in pots make an attractive show in the Cape house during the winter months. *C. carneus* is of more robust character, the scape is taller, stouter, and the flowers are larger. It is not so useful and pleasing as *C. lutescens*. We see very little of such bulbs in English gardens, but they add much-needed variety to the cool house.

Brownea Crawfordii is a feature of interest in the Palm house at Kew, where a specimen is in full bloom. It is a hybrid between *B. grandiceps* and *B. macrophylla*, and bears large compact heads of vivid scarlet flowers, so densely produced as to form quite a dense mass, the stamens protruding from the segments some distance. The *Brownias* are gorgeous plants in the stove by reason of the splendour of the flowers. They are allied to the *Amberstias*, the flowers of splendid colour and size. Representatives of the family have been long in cultivation in English gardens; thus *B. coccinea* was introduced as far back as 1793, and *B. grandiceps*, one of the parents of the hybrid *B. Crawfordii*, in 1829.

Cyrtanthus carneus.—This plant is in flower in the T range at Kew. It belongs to the same section of the genus as *C. obliquus*, having large bulbs, broad strap-shaped glaucous leaves, and a

tall stout scape nearly 2 feet high, bearing an elegant umbel of drooping urn-shaped flowers 2 inches long, and coloured pale ochreous red with a tinge of rose. It might be worth introducing in quantity as a winter-flowering plant if only it would bloom more regularly than its beautiful, but shy-flowering ally, *C. obliquus*. It is a native of South Africa, the home of all the *Cyrtanthi*. There is a picture of it in Lindley's *Botanical Register*, t. 1462, which was prepared from a plant flowered at Chiswick in 1830.

Capsicums, two good.—Berry-bearing plants are always useful, more especially during the autumn and winter. Having to provide a large quantity of material for decoration during the last five months of the year, I find *Capsicums* very useful. Having tried several kinds, I find *Prince of Wales* and *Little Gem* the most useful. These two are quite distinct in colour and habit. The former has bright yellow berries, and when well grown and strong on stems, say from 8 inches to 12 inches high, the effect is very good. *Little Gem* has bright red berries produced freely over a bushy plant. My custom is to sow seed in March. When strong enough the seedlings are potted off, and when well rooted they are again removed into 4½-inch and 6-inch pots. When full of roots the plants are kept well fed with manure water, and it is astonishing what fine plants can be grown in this way in these small pots. As the weather becomes colder they are removed to a warm house and used as wanted. I have now (January 21) some good plants that have been ornamental for four months past.—F. A. C.

Reinwardtias.—So far as is known at present the genus *Reinwardtia* comprises three species, but it is with only two of them—*R. trigyna* and *R. tetragyna*—that horticulturists have to deal. The former was figured in the *Botanical Magazine* many years ago (plate 1100) under the name of *Linum trigynum*, by which title it is still, perhaps, better known than the correct one. The value of these two species is not only due to the beauty of their flowers, but more especially to the fact that they appear at a season when flowers are most needed, that is to say, throughout the winter. The flowers of the two species do not differ very much from each other, being in both instances about an inch and a half across, with five obovate petals of a bright yellow. In *R. tetragyna* they are, however, of a perceptibly lighter shade. With regard to foliage and habit, they are very distinct. *R. trigyna* has a clear erect stem, bluntly oblong leaves, and the flowers are borne in the leaf-axils for a foot or more down from the ends of the branches. *R. tetragyna*, on the other hand, is somewhat spreading in habit and suckers from the base; the leaves, too, are lanceolate, pointed and serrated; whilst the flowers are produced in a terminal cluster. Individually, the flowers are short-lived, but both species are remarkable for the number they produce, the succession being kept up for months. The best temperature for them at this time of year, when the flowers rapidly succeed each other, is an intermediate one, say averaging 55° Fahr. If this is not available, the warmest part of an ordinary greenhouse should be used. In the case of both plants we prefer to renew the stock annually. Cuttings should be made of the young growth as early in spring as possible and kept growing in a genial intermediate temperature till summer, when they may be placed in a cool frame and given plenty of air and light. *R. trigyna* should be carefully watered; if too much be given, the roots of the plants decay and the base of the stem gets loose in the pots. Red spider is the only troublesome insect, and it should be kept under by the syringe. As autumn advances the plants should be returned to their original quarters. The soil I use is a mixture of loam, leaf soil, a little peat and abundance of sand. A close heavy compost should be avoided.—B.

Clivia miniata.—During the last few years a good deal more attention has been given to the improvement of this old garden plant than was formerly the case. Those who visited the Royal Horticultural Society's meetings last year had

several opportunities of judging the newer varieties, some very fine forms having been exhibited by Messrs. Laing, Williams, and others. A good many named varieties have also been sent over by Belgian growers. But even in its original unimproved form the species is one of the most brilliantly coloured of warm greenhouse plants, and from the beginning of February up to April no garden with accommodation for its cultivation should be without its beautiful orange-scarlet trusses. It is a very easily grown plant, and one of the best for amateur cultivators. It should be potted in a rich open loamy soil, and whilst growing, strong-rooted plants can hardly be overwatered. Towards the latter part of the year they should be kept on the dry side, but as soon as the new year arrives they should be kept moister, as the spikes then begin to push. The plant is well adapted for forcing, and by giving it stove heat and moisture it may be had in bloom a month or more before the normal time. I have grown the plant in a cool greenhouse with a winter temperature of 40° to 50°, but although it flowers it is nothing like so satisfactory as in a house say 10° higher. Like two other beautiful plants allied to it—*Vallota purpurea* and *Agapanthus umbellatus*—it is a native of South Africa.—W. B.

TREES AND SHRUBS.

CONIFERS IN WINTER.

As nearly all our hardy conifers are evergreen in character, many of them present much the same appearance at all seasons of the year; while, on the other hand, some assume such different tints in the winter to what they do during the summer months, that to the uninitiated it will be difficult to recognise the same individual if seen at different seasons of the year. As a rule this feature is principally confined to the small or medium-growing forms, though a few larger kinds must be included, most prominent among them being the red Cedar (*Juniperus virginiana*) and the Japanese *Cryptomeria elegans*. Some of the *Biotas* and their near allies, the *Thujas*, change a good deal during the winter, most prominent among them being the following: *Biota elegantissima*, a variety of the Chinese *Arbor-vitæ*, which differs greatly from the type in being more fastigate in growth and altogether a smaller-growing plant; while the foliage, which is during the summer of a rich golden hue, changes in winter to a kind of bronzy orange, often with a suspicion of red. Individuals vary somewhat according to the position in which they are placed, but a sunny spot is the most favourable for depth of colouring, and when seen during the sunshine of a clear bright winter's day, a specimen of this is really very beautiful. The form so well known as the golden *Arbor-vitæ*, a low, compact-growing variety, becomes suffused with brown during the winter, but is altogether wanting in the warm glowing colour of the preceding. Another *Biota* that changes considerably in colour is the variety *meldensis*, whose ornamental qualities are, however, of no high order. It forms a somewhat upright, but loose, irregularly growing specimen, whose foliage at this season is of a reddish brown hue. The leaves of this are longer than in any of the other forms of *Arbor-vitæ*, and this, combined with its winter garb, causes it to bear a certain amount of resemblance to the red Cedar; in fact, it has been regarded as a hybrid between this last and the Chinese *Arbor-vitæ*. It is, however, now, I believe, pretty generally acknowledged to be a kind of juvenile or immature form of the *Arbor-vitæ*, as cases of even large plants retaining their juvenile foliage is by no means uncommon among conifers, especially in the case of some of the *Retinosporas*. Next to the *Biotas* come their western representatives, the *Thujas*, most of which become more or less brown during the winter, but the colouring is dull. There are, however, two varieties of the American *Arbor-vitæ* to which this last remark will not apply. They are *Vervæneana* and *lutea*, this latter having during the summer the

young shoots of a golden hue, which becomes bronzed in the winter; while in *Vervæneana*, which is a more compact growing plant, the golden yellow hue which it assumes during the growing season extends over the whole plant, and changes in winter to a warm brownish orange. The *Retinosporas* include among their number one whose tint at this season is quite distinct from any other. This is *Retinospora ericoides*, a small compact somewhat upright-growing shrub, seldom seen much more than 3 feet or 4 feet high. This, which is thickly furnished with rather long leaves, is deep green in summer, and becomes of a peculiar brownish purple in the winter. Though included in the genus *Retinospora*, this is now regarded as an undeveloped form of the Chinese *Arbor-vitæ*, but it has been so long included in the *Retinosporas*, that it will in all probability be generally known by that name. *Cryptomeria elegans* is a very pretty conifer in the winter, and in fact at all seasons of the year, for it forms a very handsome specimen, whose foliage, which in summer is green, changes in winter to a kind of bronzy crimson with, when viewed from certain standpoints, at times a suspicion of purple. The Red Cedar (*Juniperus virginiana*) varies very much in its winter tint, some individuals changing but little, while others become deeply suffused with brownish red. This is especially noticeable where numbers are grown from seed, it being often possible to pick out many diverse forms. Among the recognised varieties there is one, *Schottii*, whose foliage during the growing season is of an unusually bright green, and it changes but little during the winter months. In the case of the Pines, Spruce and Silver Firs very little change in colour takes place in the winter, unless in the golden-leaved variety of the Scotch Fir, which wears its most attractive garb at that season. T.

SOME TREE WILLOWS.

FIVE years ago we planted a moist slope with Red Willows, and ever since then it has been a pleasure to see them. In various lights of late the effect of these red Willows is the most beautiful thing in woods and plantations, containing many hardy trees. In the summer-time, when the delicate leaves partly obscure the red of the stems, the effect against the sky is often very beautiful.

At present, also, the soft yellow Osier is charming where in quantity, and even one Osier tree by the waterside will often form a picture. But where planted with judgment in some quantity, the effect will be charming. The red Willow we refer to is sometimes called the cardinal Willow, and is, so far as we can ascertain, a variety of the *Salix alba*, which is also a noble tree, not so effective in winter as the yellow or red Willow, but in summer remarkably interesting, and perhaps best of all for the marsh or waterside.

When the gardener plants a Willow, it is generally some curious thing with a mop head, like the American Weeping Willow. Country gentlemen should therefore take the Tree Willows under their own care, and plant them in bold groups and colonies here and there, by water or in wet, marshy and often useless places. A marshy place planted with underwood formed of the yellow or red Willow we have mentioned would be charmingly picturesque in winter—indeed at all times. There is no difficulty in getting any of these Willows by the hundred or thousand, and they are very cheap. The red Willow is oftener seen in French nurseries, but we have seen something like it wild in Ireland. In any case the common yellow Osier should be planted. A red kind of Osier is often seen in Covent Garden, so that anybody getting a bundle of tree shoots would have all he wanted for propagating. Generally, however, it is best to buy young trees, which should be very cheap. We find that in places which are much haunted by the rabbit, young Willows of these kinds go very rapidly, and that, planted by streams in meadows where there are cattle, they are more nibbled down, so that in certain districts a little care may be wanted to protect them. But in the whole range of planting, we know nothing give more satisfactory re-

sults than these forms of our native Willow. There are American and other European Willows that ought to be planted with them, but certainly nothing we have seen is quite so good. We have lately planted a considerable quantity of the pretty grey dwarf Willow, called the Rosemary Willow, which is much seen in French gardens; but though its effect is distinct, it is not nearly so stately and free in growth as the ones we have mentioned.

Another interesting point about some of the Willows we have mentioned, particularly the Osier, is their use for tying, which we are sorry to see often forgotten now. There used to be many things done in the country place and garden in which these Willow shoots were used for tying and pack-

to unfold its yellow flowers. The crimson-stemmed Dogwood and the Aconite create a charming contrast. This reminds us how little the winter Aconite is used to good purpose in gardens. It should be planted freely as a surface covering to beds filled with other things, and has a remarkably pretty appearance at the base of standard Roses.

Daphne Genkwa.—Although the proper flowering season out of doors of this Japanese shrub is March and April, it may evidently by gentle forcing be used to good purpose for blooming in the greenhouse during January. It is very free-flowering and pretty, although its decorative value may by some be considered

a broadly pyramidal specimen, somewhat irregular in outline, owing to the principal branches varying a good deal in length. While the main branches have a somewhat upright tendency, the whole of the branchlets and young shoots are strictly pendulous, thus imparting a very graceful feature to the specimen. The leaves are about half an inch long, rigid, and very sharp-pointed, so that a specimen of it is almost as spiny as a Furze bush. The foliage of this is of a soft green tint, the young shoots being somewhat paler in hue than the rest of the plant. It changes but very little in colour during the winter months. This Juniper, which is perfectly hardy in England, was introduced from Japan in 1861 by Mr. John Gould Veitch. It stands pruning well, and cuttings of it are by no means difficult to root.—T.

LILIES OF THE VALLEY LOOSELY ARRANGED.

SIMPLICITY in arrangement as it pertains to flowers is not nearly enough adopted. Some would be horrified if they had to depend upon such a common thing as a tumbler wherein to arrange Lilies of the Valley. If, however, the tumbler be a plain one and not too wide at the top, it will make an excellent receptacle for them. In its use there is one most essential advantage that often escapes notice. It is that of being able to employ a good quantity of water, without which it is next to impossible to keep the spikes fresh for any length of time, more particularly in the case of forced ones. These latter, having been brought on so rapidly, require a deal of sustenance. When, therefore, a good depth of water can be had, it is all the better for them, this being further improved upon by using the stems at full length. In the case of the forced single crowns, it is even possible to take the crowns and a few roots also. Thus employed, there is every prospect of the spikes continuing much fresher than would otherwise be the case. If looked at in a sensible light, it will at once be seen that forced flowers of any kind require more water to keep them fresh than those which open in a natural manner. This, therefore, should be the aim of all who have to arrange forced flowers. Another essential point to observe is not to expose forced flowers to the draught. For instance, if stood near to an open window, the inevitable must soon follow as a matter of course. When sending forced Lilies of the Valley any distance, the time taken in transit being sufficiently long to cause them to suffer, by far the best plan is to tie them up in bunches tightly, but not so much so as to injure the foot-stalks, and then to bind damp Moss around the stems, this afterwards being dipped in tepid water before packing is finally completed. By taking these precautions the flowers will be found so much the fresher. It ought also to be said that it is not merely the time taken in transit, but there is also the time lost between arrival and arrangement, and that possibly after the flowers have been unpacked and then left exposed. I am led to make these remarks now, as it is the season when more forced flowers are used than at any other time. It is simply waste all round to spoil flowers at such times after their production has cost considerable trouble to the gardener.

As to the forcing of Lilies of the Valley, there are a few points that are more observed sometimes in their omission than in their performance. These are the following: In the case of single crowns, the crowns and the few roots attached to them are oftentimes left exposed, and thus they suffer considerably from becoming too dry, the future growth being



Lilies of the Valley arranged loosely in a glass.

ing, and now we notice wire, tarred twine and other manufactured articles in use instead—a mistake, we think. Home-grown materials of this kind should get the preference when, as in this case, they are the better thing. We know nurseries where millions of young trees are sent away every month in winter, all securely tied with Willow. It is not one sort only that may be planted for this purpose, but there are probably in all half-a-dozen kinds which are useful for tying, in addition to the common Osier.—*Field*.

Siberian Dogwood is of note for the beauty of its crimson stems in winter. A group of this shrub on the outskirts of the lawn is interesting throughout the winter, as the shoots are of a deep telling colour. We saw a mass of it recently in a Surrey garden, the hardy winter Aconite which covered the surface of the soil just commencing

spoil on account of the absence of foliage. The flowers are in clusters of two or three pairs, springing from every node almost to the base of the last made shoots. The tube of the perianth is half an inch long and it measures about the same across the petals, which are four in number. The colour is a beautiful bright lilac, which has a very enlivening effect at this season, especially if the plants are backed by some cool Ferns or other greenery. The fragrance so characteristic of Daphnes belongs also to this species, and gives it an additional attraction. In the outdoor garden it should be grown on a wall, or be otherwise protected during severe weather. It was brought from Japan by Fortune in 1865.

Juniperus rigida.—This Japanese species of Juniper need not be confounded with any other, for it possesses several very distinctive features, and as a medium growing conifer for a single specimen it is well suited. Its usual habit is to form

consequently weaker; then, after the spikes are well advanced with the bells showing colour, it does not always occur to those in charge to give more air if they are in a pit, to stand out of bottom-heat if still plunged in it, or to remove to another house if needful, so that the flowers through opening rather slowly may be possessed of greater substance, thus lasting longer in perfection. In order to bring the single crowns on rapidly and regularly, bottom-heat is decidedly an advantage. My plan has been to plunge in a fairly brisk heat, 80° or thereabouts, covering the pots and crowns with about an inch or so of cocoa fibre, which is kept continually moist. They should on no account be allowed to suffer from drought at any time from potting to cutting the spikes. When received and before potting, the crowns should, if at all dry, be allowed to lie in tepid water for a little time. This will assist in plumping them up. It is almost immaterial what soil is used; well decomposed leaf-mould and some light loam will answer very nicely. From a dozen to twenty crowns will make a good potful when in flower. Failing the cocoa fibre, some fresh green Moss will answer. I prefer the former, however, as it lies closer to the crowns. If the requisite number to keep up a supply be introduced into heat once a week there will not be much fear of a break in the yield, some generally opening earlier than the others. The same plan of covering is also to be recommended for clumps when they are introduced a little later on, the reason being not only to conserve moisture, but to accelerate the growth of the flower-spike before the leaves get the ascendancy. SIMPLEX.

ORCHIDS.

AGANISIA CERULEA.

"J. E." sends me a newly imported specimen from the river Amazon asking its name and what treatment it requires. The plant I have little doubt is the beautiful species named above. It was found by Dr. Spruce on the Rio Negro, and appears to grow upon the bare stems of trees and to throw out roots very freely. These plants have arrived home in capital condition, and I should say in excellent time to become established, if not to flower this season. To grow this Orchid successfully it requires to be kept in the moist part of the East India house, or, better still, to be grown with the Phalenopsis. It also enjoys an abundance of light, but during the hottest part of the day a thin shading must be used to prevent the sun's rays scorching it. It has naturally a creeping stem, climbing and running about over the stems and branches of the forest trees. Under cultivation it does best in a hanging basket. It should have very little soil about its roots. In a natural state the trees that it grows upon are living, and the roots cling to and creep beneath the bark, so that there must be a great difference between these and the bare blocks of dead wood upon which the majority of our Orchids are fastened. This plant must have a liberal quantity of water to its roots when growing, and there also should be a good amount of moisture in the atmosphere. This must be maintained, but in a less degree, all through the season. This plant has a creeping rhizome, from which proceed many roots, and at intervals numerous somewhat Pear-shaped pseudo-bulbs, bearing usually a pair of leaves on the apex. The scape bears several flowers, each of which measures nearly 3 inches across; the sepals

and petals pale lilac or blue, the lip bright brown. The flowers appear about the end of May. I have seen it in one or two collections, but not always looking so robust as it should do on account of the growers not being attentive enough to avoid the rapid evaporation of moisture which I before drew attention to. I have observed this plant thriving well in Sir Trevor Lawrence's collection, from which a plant was exhibited some two years ago at the Temple show. WM. HUGH GOWER.

DENDROBIUM AINSWORTHII AND ITS ALLIES.

HYBRID DENDROBIUMS do not as yet form a very important group from a horticultural standpoint, but the first place amongst them must without question be given to *D. Ainsworthii* and the two or three other hybrids which have subsequently been raised from the same species. It was first raised in Dr. Ainsworth's garden near Manchester, the seed having been sown in 1867, the first flowers appearing in 1874. Its parents are the two well-known species *D. nobile* and *D. aureum* (or heterocarpum, as the latter is frequently called), and so intermediate is it between the two, that it would be difficult to say which of them it most resembled. The flowers, which are occasionally nearly 4 inches across, have whitish sepals and petals, in some varieties tinged at the points with rosy purple; the lip is also white or yellowish white at the margin, the centre marked with a blotch of reddish purple, from which spread numerous lines of the same colour.

In the year 1879 another hybrid, finer than *D. Ainsworthii*, flowered in Messrs. Veitch's nursery at Chelsea. Reichenbach named it *Dendrobium splendidissimum*. Its flowers, as a rule, are close upon 4 inches across, the sepals and petals being of a somewhat enamel-like white, but shaded with rosy purple at the tips. The lip is broader and larger altogether than that of *D. Ainsworthii*, but the scheme of colour is the same, the purple on the disc, however, being much deeper and the marginal area of a yellower shade. The variety named *grandiflorum* has the largest flowers of any in this group of hybrids. Mr. Seden's hybrid was followed by a third, which flowered at Fallowfield in 1882, having been raised from the same species as the two previous ones by Mr. Swan. Although bearing a strong family resemblance to *D. splendidissimum*, it was considered distinct enough to deserve a name of its own, viz., *D. Leechianum*. The colour of the sepals and petals is the same as in *D. splendidissimum*, but they are not so broad and are more pointed; the lip, too, is more lobed. Although the typical forms of these three hybrids are easily distinguished, each one of them has varieties merging towards the others. During the early part of last year, for instance, some plants were exhibited at the Drill Hall, Westminster, which might as properly have belonged to *D. Leechianum* as *D. splendidissimum*. But to whatever place in the group they may belong, they are invariably beautiful, and there is no doubt that they represent some of the finest work of our Orchid hybridisers. The mere fact of the widespread culture of *D. Ainsworthii* is a conclusive proof of its garden value. In its amenability to cultivation it evidently inherits a good deal from *D. nobile*, for *D. aureum*, after a few years' cultivation, requires much more careful treatment to keep it up to the mark.

D. Ainsworthii has itself been used for hybridising both as a pollen and seed-bearing plant. In 1887 Sir Trevor Lawrence flowered two of its progeny, which had been raised by him from crosses with *D. Findleyanum*. The one in which *D. Ainsworthii* was the seed-bearer Reichenbach named *D. chrysodiscus*, and described it as a "lovely thing." It was rather remarkable that in the reverse cross, for which *D. Ainsworthii* supplied the pollen, the flowers did not differ materially from its own. In most hybrids where the characters of one parent predominate, it is as a rule those of

the female. Other instances besides the present have, however, occurred to the contrary. The normal flowering season of the aureum-nobile group of hybrids extends from the beginning of January to the end of February, during which time it would be difficult to point out a prettier Orchid than a well-grown and well-flowered specimen of any of the group. B.

SHORT NOTES.—ORCHIDS.

Odontoglossum Edwardi Klabochorum (*G. Umzin*).—This is a very good and highly coloured form of this variety; the flowers, although somewhat small, are numerous and deliciously scented, whilst the colour is all that could be desired, being deep violet-purple with a blotch of yellow on the lip.—W.

Cypripedium Morganiae.—This fine hybrid is now flowering for the first time with Mr. Osborne. It is from some seed sown many years ago when he was with Mr. Buchan, of Southampton. The flower was not open enough at the time of my visit, but it bids fair to be a very fine representative form.—W. H. G.

Cypripedium Lathamianum.—From Mr. Seeger, of Dulwich, comes a very fine variety of this hybrid, across between *C. Spicerianum* and *C. villosum*, the dorsal sepal being white, tinged with light green at the base, and having a dark chocolate line up the centre. The upper part of the petals is pale yellow at the base, becoming quite brown at the tips, the lower half paler yellow.—W. H. G.

Lælia anceps Williamsi.—J. Brown, of Ard-darroch, sends me a superb form of this. The plant has thirteen such flowers, which are of the purest white, saving the lip, which has a yellow throat, the side lobes barred with crimson. I am pleased to see this form is beginning to flower pretty freely.—W. H. G.

F. Bedford sends a very nice flower of this variety, and says he has observed that the white varieties appear to be shy bloomers naturally. I have noticed this also. We, nevertheless, are overcoming that difficulty in this country, for in several places where I have seen them this season they appear to have grown with surprising strength, every bulb giving a spike. Especially is this to be noted in Mr. Sander's collection at St. Albans, and I have no doubt as Mr. Bedford's plants get stronger they will also flower more freely.—W. H. G.

Odontoglossum Rossi majus.—J. L. Stackhouse sends a flower of this species, asking my opinion about it. It undoubtedly is good, but there is nothing about it which calls for special notice. This Orchid is worthy of more extended cultivation, the flowers being large and lasting in condition for a long time. The same species in two varieties comes to hand from Mr. Appleton; the smaller flower is an especially good one, having the petals broadly banded for their entire length with rich chocolate. The larger spike is very good, but it has nothing special to commend it.—W. H. G.

Cypripedium Boxalli.—Mr. Appleton sends a beautiful variety of this plant. The flower is large, the dorsal sepal being marked throughout the whole lower surface with spots and blotches of black upon a light apple green ground which runs out at the top, leaving a broad marginal border of pure white; the petals are broad, the base and lower half tessellated, the upper portion yellowish-brown tinged with rose. The lip is somewhat small for the flower, pale yellow streaked with brown. This is a handsome bold marked flower, which is well worth taking care of, but it is not the variety called *atratum*.—W. H. G.

Odontoglossum crispum Arthurianum.—This comes to me from Mr. Dorman's garden at Sydenham, but it has suffered to some extent through fog and dull days. Some growers used to say a few years ago that this species, although a mountain plant, grew just as well in the London atmosphere as it did at home, but it really will not. The ground colour of this variety is white; the sepals are faintly tinged with rose, which shows through from the exterior, where they are marked with that colour. On the front they

are marked with two or three good sized spots of chestnut-brown; the petals are clear white, having in the centre a very large spot of rich chestnut, the lip white, with a few brown spots. It is certainly a very grand variety.—W.

Cypripedium Appletonianum.—J. Appleton sends a flower of a plant that was introduced with some plants of *C. Hookeræ*, but the leaves, I am told, are plain green and not at all tessellated, whilst the flower is large and quite different. It measures $4\frac{1}{2}$ inches across the petals, which are broad at the apex, where they are lilac-mauve, this colour being continued three parts of the distance down. At the base they are green with a few black warty dots, the margins being slightly undulated without any hairs; the dorsal sepal is green in the centre with a white margin, lip lilac-mauve in front with a green base. It is a twin-flowered plant, and I should much like to see blooms of it again.—W. H. G.

KITCHEN GARDEN.

METHODS OF PRODUCING EARLY CUCUMBERS.

THE past severe weather has necessitated continuous firing to maintain a temperature that will keep the young fruits of Cucumbers well on the move, conditions that will wear out the plants quite as much as heavy cropping. If the plants should get into a debilitated state, it is seldom that they grow out of it. In fact, in many instances they are quite an eyesore. Unless there is a second crop coming on, preparations should certainly be made to push on as much as possible a fresh relay of plants. This is much better than depending upon the old plants. Pot culture is a good method to grow an early set of Cucumbers, as a place may be found in a stove for a few plants, so that by the time these come into bearing the old ones (if planted out) may be cleared away to make room for the main set. In plant stoves where a comparatively high temperature is maintained, Cucumbers may be grown without the aid of bottom-heat. The raising of the young plants may now be proceeded with. The seeds are best raised singly in 3-inch pots in preference to sowing several in a pot and then potting off, as by this latter method a check is received and valuable time lost, whilst by sowing the seeds singly the plants start away from the first. The pots should be well drained and filled with equal parts of leaf-soil and loam, and the seeds dibbled in about three parts of an inch. The soil being fairly moist, no water will be needed until the seedlings are through the soil. If plunged in a bottom-heat of 80° or thereabouts, the germination will be greatly hastened. After this takes place do not keep the plants unduly confined, but place them well up to the light, that is if the position is warm, as the young plants must not be subjected to a chill, this very quickly causing them to collapse. To be successful with early Cucumbers they must be kept growing steadily in an even temperature.

In Cucumber houses proper a narrow bed of fermenting litter about 18 inches in depth and to the width of 3 feet should be placed throughout the length intended for planting Cucumbers. If in pots, these could be surrounded with the litter, but care must be taken that it is well worked beforehand, or there would be danger of it becoming too hot. This can be obviated by leaving a cavity around the pots until the heat has declined to a safe degree, when it can be replaced. Bottom-heat for pots could also be obtained entirely from fermenting materials, or even leaves alone, and if these are good they

form the best medium for plunging, the warmth being steady and lasting.

The soil for early Cucumbers must be lighter than that needed later on, the proportions being three parts turfy loam and a third each of leaf-soil and pulverised horse manure, with some pieces of charcoal. If the soil should be of an adhesive character, a little old mortar rubbish pounded up would be a good addition. The young plants when ready should be planted out as soon as the roots reach the sides of the pots, for if allowed to remain until they become pot-bound the growth is spindly, and, moreover, time is lost. In planting, keep the young plants well up, whether on mounds or in pots. Some people, when growing Cucumbers in pots, plant too low down, the idea being to leave room for top-dressing. A space of 2 inches or 3 inches will be ample. After planting, give a gentle watering with tepid soft water, so as to settle the soil. Cucumbers are different to many other plants in this respect, as if a watering is not given, they are apt to droop if the weather should be bright, the bright sunshine taking effect upon them very quickly. In fact, it is advisable to afford a little shade for a few days, or until it is seen that the plants have taken to the soil. In staking the plants do not affix the stake to the trellis until it is seen that the bed has settled down, or very likely the plants will be strained at the collar. What ventilation is needed will depend upon the weather. The time to give a little ventilation is on mild days, when the temperature feels "stuffy" to a person entering. By closing early and damping down the house, also dewing the plants over, a healthy and fruitful growth will be obtained.

The heating of the pipes so as to regulate the temperature has a very important bearing upon the plants. A night temperature of 65° to 70°, the latter on mild nights, may be easily managed. As regards feeding never apply water unless in a tepid state, and by the time the plants are well rooted, if in pots, a little clarified liquid made from cow manure and soot will assist them. The roots, especially those on the surface, must be kept moving, as when these show freely it is a sure sign that the growth is all right. An occasional top-dressing of light turfy loam with a little pulverised horse manure will keep them right in this respect, adding occasionally a little approved fertiliser. The stopping of the shoots must not be quite so hard as later on. I like the leading shoot to reach well up the trellis before being stopped, the side laterals being allowed to grow a few joints before pinching them, so as to get a foundation laid. Where fruit is showing, stop a joint beyond; longer than this is not necessary unless the shoot should be needed for extension. With early Cucumbers large leaves often form on the leading shoots. Instead of allowing these to remain remove one occasionally, which will allow room for the smaller lateral leaves, and, moreover, their removal encourages the more equal distribution of the growing force. There is one other point which must be borne in mind, and that is to avoid overcropping. Just leave sufficient fruits to keep up the supply that is needed. Allowing all fruit that shows to form will surely result in the early collapse of the plants.

A. Y. A.

Size of vegetables.—I have read with very great pleasure the article in a recent issue on this subject. While agreeing in the main with the writer I would like to state what I believe to be my position, as well as that of many others who are deeply interested in exhibition specimens. Quality by all means should come first, but wherever it is possible to combine size with quality let us have it for

exhibition. I often wonder that judges act so differently in judging Turnips, Leeks, and Parsnips; almost invariably in the two latter cases the prize goes to size. In the case of Turnips no judge would risk his reputation by awarding the first prize to the largest specimens. As a result, one never sees large Turnips staged. I hold the same result would follow with a great many other things if a similar course were adopted by judges. I have often thought it would be a good thing if someone would offer valuable prizes at some important show for a collection of vegetables, coupled with instructions to the judges that in judging, quality alone is to be the deciding element. It requires no skill to grow a huge coarse vegetable, and therefore there is no credit in the achievement, but it does require much experience and most careful attention to produce even moderately large specimens of high quality.—WILLIAM CUTHBERTSON, *Rothsay*.

CULTURAL NOTES ON POTATOES.

PERSONS with strong land to deal with should not employ much fresh manure at planting time. More dependence should be placed in thoroughly digging the ground during a spell of dry weather in the autumn after say a crop of Peas has been taken off the land. The manure employed for mulching the Peas will be ample for the subsequent crop of Potatoes. Land for this crop cannot be too often stirred during dry weather. On heavy land, shallow ploughing, probably not more than twice over and both in the same direction, has been the means of securing inferior crops more often than anything else. Some cultivators never think of crossing the land with the plough, and for this defect they have to be content with inferior results. In garden culture I find decayed vegetable refuse, leaf soil and wood ashes excellent material to sprinkle at the bottom of the trench on which to lay the sets. I always have the Potatoes planted as digging proceeds, using long-tined steel forks. Another fault is that of allowing too many growths to each tuber. The "sprouts" are not nearly enough disbudded, one strong shoot, or two at the most, being ample. Some go over the rows and thin the haulm when say 6 inches high. I prefer to do it before planting the tubers. The manner in which the "sets" are prepared or stored is not always the best. Too often the Potatoes are thrown into large heaps in the bins, shed or cellar and allowed to remain there until the sprouts are 3 inches or more long. Such treatment cannot but weaken the tubers considerably. My plan is, after lifting the crop, to thoroughly dry the tubers in the Mushroom house, throwing the doors and ventilators wide open. Here they remain until all that are likely to rot from disease have had time to do so. They are then "pitted" in the reserve ground, taking care to have a thick bed of coal ashes under them to keep the base of the heap as dry as possible, yet cool. Each variety is separated by a layer of straw. They are again covered with straw. On this are laid soil, lime rubble, or anything handy to keep out frost. The whole heap is then thatched to ward off heavy rains. Early in January a suitable dry day is taken to uncover the tubers, turning them over to pick out any stray bad one, and prevent them growing by admitting air to the pit, removing a stray sprout should one have formed, again covering the heap as before. Early in February the early sorts are taken into a cool, yet light room and set on end to induce stout and healthy sprouts, which I like to see half an inch long by the time planting has to be done. I plant the first earlies out of doors, as a rule, about the middle of March, and am enabled to dig new Potatoes by the end of May. The main crop I do not plant until the 1st of April, and perhaps a few days later if the weather is not suitable. Here in heavy, unkind soil it is much better to wait a day or two, and "catch a season," as it is called, than to knead the soil into an inert mass by treading on it. I am not in favour of very early planting of the second early or main crop; the growth is so liable to be

cut down with frost in May that it is risky. A check of this sort to the haulm may be the means of increasing the number of tubers, as some say it does, but it certainly leaves them much smaller. For planting I prefer tubers of medium size. With regard to cutting the sets, they seem to succeed equally well both cut and uncut; therefore, I think it matters but little. When I have sufficient of any sort I prefer to plant medium-sized seed tubers, but do not scruple to plant those that are cut. One of the best crops of Potatoes I ever had was the result of cutting, rather severely, seed of Snowflake when that variety was first grown in England. I thought it was a wonderful kind, but with me it has had to make room for those which do not go black in the centre when either cooked or cut when raw. Cutting the tubers ought to be more practised by judges when adjudicating on single dishes than it is. Turnips and Beet are cut, Peas shelled, and why should not the only possible test be applied to Potatoes in preference to mere looks? These may be all right when the variety is known, but when not, cutting is a good test.

E. M.

GROWING EARLY TOMATOES.

In the majority of gardens the first Tomatoes are obtained from plants raised early in the season. In the case of older plants which have been producing fruit throughout the winter, fresh growths can be laid in to provide a serviceable lot of fruit until far on in the season; but it is best not to rely upon these unless they are perfectly clean and healthy and worth keeping. By judicious management fresh plants raised at the time mentioned are not long, under good treatment, in growing to a fruiting size. Failures are not so frequent as formerly, but sufficiently so to call in question the kind of treatment the plants very often receive. Grown in a rational manner, no fruit-bearing subject is more productive, or gives better returns in a given space for the attention bestowed upon it; but, on the other hand, when in a debilitated condition, the returns are most disappointing. More often than not early Tomatoes are treated similarly to Cucumbers, that is, grown in a high and moist temperature; but the growth is so attenuated and devoid of stamina, that what flowers do form fail to set. There is no danger of the plants becoming ruined through early fruiting, as the earlier fruits if induced to form assist in checking exuberant growth and the succeeding blooms set better. What is needed is a strong matured growth, built up by free exposure to sunshine with a warm buoyant atmosphere. It is very annoying to have strong plants capable of carrying a good weight of fruit in a barren state through the blooms failing to set, and with early Tomatoes this is a very frequent occurrence.

It is not during the very early stages that a warm and moist temperature is injurious, as in my case the seedlings are raised and grown on until repotted into 6-inch pots in the same structure as that devoted to Cucumbers and Melons. The only precaution taken is to keep them from becoming drawn, which is easily prevented by exposing the seedlings to the light on a shelf near the glass. When the plants are allowed to stand pot to pot, even in a light structure, they are very apt to become much enfeebled, and the lower leaves, instead of becoming fully developed, are puny with a very yellow cast. In most gardens the earliest fruits are produced from plants growing in pots and boxes, as these can be removed to other available places later on. In those gardens where space is limited sundry places have to be resorted to ensure their fruiting satisfactorily. Last season I had on trial Early Ruby, Conference and Acquisition, which are admir-

ably adapted for growing in pots and boxes, the growth not being so vigorous as in some of the other sorts. By the time the plants are potted into the 6-inch pots there is generally another structure other than the Cucumber house in which to grow the plants, although it is advisable to allow them to remain until they have got over the check of repotting. I place the plants on a temporary stage in one of the vineries just started. After being potted into the 6-inch pots and they have become established, it will have to be decided whether

a free set as an over-moist and close one. By keeping the atmosphere fairly moist the pollen is more potent, and sharply tapping the shoots in the middle of the day is generally sufficient. The two extremes of atmospheric conditions must be guarded against.

The soil can easily be too rich and light and also loose. Where the soil is known to be poor, a little kainit and superphosphate mixed with it will greatly assist the plants. But, on the other hand, good crops may be produced with sound loam and a fourth of pulverised horse



Early Tomatoes.

they are to be grown as single stems or with two or three. The single cordon plants will commence to fruit the earliest, and if there is room this system may be adopted. Even with two or three shoots the method is the same. If the plants are repotted into 12-inch pots and other plants are coming on for succession, the leaders should be stopped after two or three bunches of fruit to a shoot are formed. It must not be thought that keeping the plants in the 6-inch pots is an aid to early fruiting, as in this respect they are not in the least more precocious; in fact in the end they are behind others which have been early potted or boxed. A very dry or arid atmosphere is as much against

manure. The plants delight in a firm root-run, this imparting a fruitful growth, as later on when they need assistance, richer fare in the form of clarified liquid will prove beneficial. In the early stages of growth Tomatoes should not receive nor do they need an over-rich soil or a poverty-stricken one, both extremes proving injurious to the well-being of the plants. In conclusion, just a word of warning upon the penny-wise-and-pound-foolish plan of being niggardly with the fuel. This is not likely to happen early in the season, but to withdraw fire-heat later on will most likely result in an attack of disease.

A. YOUNG.

Abberley Hall.

SOCIETIES AND EXHIBITIONS.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

I HOPE I may be excused for approaching my fellow gardeners (in the interest of the institution) in the hope that I may be the means of influencing their minds in favour of a more general and generous support of its funds. It is difficult to understand why every gardener does not rally round this splendid property of £29,000, especially when it is said that every shilling of it is their own. One would think that even from motives of selfishness, if from no higher, every gardener would rally round it and strive to do all in his power to promote its usefulness and prosperity. There cannot be less than 30,000 gardeners, nurserymen, and others engaged in horticultural pursuits who are interested in its welfare, and if as many of these as can afford it subscribed their guinea a year, and if the remainder who are unable to do this were to collect small sums amongst themselves annually for the benefit of its funds, the question of old age pensions, as far as relates to gardeners, would be solved. Objections have been advanced by many against the institution because it is not founded on the lines and principles of a benefit society, where a member can claim help at any time in case of need. On the surface this may appear to be a reasonable objection, and I am afraid has been the cause of many not subscribing to its funds. But I think, on a little consideration, that this objection may be proved to be an erroneous one, as in the case of gardeners their wages are scarcely now stopped in time of sickness, and who, therefore, do not feel the pinch of poverty at this time like mechanics and others who are paid by the hour and whose pay is stopped when work ceases. As bearing on this point, I may say I have been a member of a benefit society for upwards of twenty years, paying about 22s. a year, and if I am to remain a benefit member I shall have to go on paying that sum as long as I live, and the benefits are: In case of sickness and permanent disability from work I am entitled to 10s. a week for the first year, about 7s. the second year, and after that I believe the pay is reduced to 3s. per week for life. Let me ask my fellow gardeners who are still sceptical on this point to compare this with the advantages offered by the G.R.B.I. even from a benefit point of view where, after subscribing a guinea for fifteen years, or £10 10s. down, a member is almost certain to be placed on the pension list if he is of good character and incapacitated from work and in want, receiving without any further cost or trouble to himself £20 a year for life whether his life be short or long. Another objection has occasionally been levelled at the institution, viz., that some gardeners who had subscribed but little and others who had not subscribed at all were occasionally elected pensioners. On this point I may say that we must not lose sight of the fact that by far the largest proportion of the property of the institution has been subscribed by people out of pure benevolence for the relief of aged and destitute gardeners, and I for my part would be very sorry to see this principle of benevolence infringed upon or curtailed in any way, and I hope and believe it will not be allowed to impose a barrier to prevent subscriptions flowing in. The committee, as is well known, have introduced a clause into their rules giving almost absolute certainty of election to those who may have subscribed for fifteen years, and the new rule passed at the general meeting a few days ago will give subscribers substantial advantages over non-subscribers in so far that a subscriber for four years will have fifty votes credited to him, and fifty more added for every year subscribed afterwards up to fourteen years.

My appeal in favour of the institution, even from a benefit and investment point of view, will, I hope, commend itself to the judgment of your readers. But I beg very respectfully to appeal to my brother

gardeners from a higher level than a benefit one. That man's life is a poor and a barren one who lives entirely for himself, and nothing noble or good has ever been accomplished without a sacrifice of some sort.

The gardeners of the past half century (and others interested in gardening and gardeners) have built up a noble standard of garden charity, which is now shedding gleams of joy and brightness round the declining life of many of our fellow workers who have fallen helpless by the way. Let me then appeal to all gardeners and others associated with them in the calling to rally round this noble institution and to strengthen it with their active support, that all the deserving in our craft may claim a shelter under its wings in the time of adversity and want.—OWEN THOMAS, *The Royal Gardens, Windsor.*

—It is with very great pleasure we make the announcement that Baron Schroeder has kindly undertaken to preside at the fifty-fourth anniversary festival dinner at the Hôtel Métropole, on June 22 next, in aid of the funds of the Gardeners' Royal Benevolent Institution. We trust that this ominently popular patron of horticulture will be nobly and generously aided in his efforts on behalf of the deserving and useful charity whose claims he has consented to plead.

NOTES OF THE WEEK.

Iris Bakeriana.—We send you a pot of *Iris Bakeriana* from cold frame at Long Ditton. You will notice the flowers of this plant, like those of *Iris Rosenbachiana*, vary slightly in tint. The perfume is very strong. We have had several of these *Irises* in bloom for some days now. Our first *Iris Bakeriana* opened three weeks ago.—BARR AND SON.

Iris Danfordiae.—This is now in flower on a dry bank at Oakwood; it is not many days ago that the frost was said to be more than a foot deep in the ground, and only a few Oak leaves were used as protection. This says much for its hardiness. I find that it was not quite accurate to say (p. 77) that my sister's *Fremontia californica* had no protection. The rule was not to give it any, but this year a little dried Bracken had been put at the bottom of the shrub.—GEORGE F. WILSON.

Chrysanthemum Mrs. M. C. Madeira.—I enclose a bloom of a new incurved American *Chrysanthemum*, Mrs. M. C. Madeira. The plant arrived here late last summer from America. When well grown I think it will make a fine addition to the incurved section. It will come in about the right season from plants grown in the usual way.—ROBERT OWEN.

*A very fine flower, rich orange-yellow, globular, and of great substance. It will apparently be valuable as a late-flowering variety.—ED.

Winter hardy flowers.—This (the 1st of February) has been a truly delightful day, with sunshine all day long. I was induced after several days' confinement indoors to note down such flowers as are either open or may open in another day. Considering the intense frosts that for a month had intervened between Christmas Day and now, it is wonderful to note the alacrity with which winter-flowering plants respond to a few days of fine weather. The following are now in flower: *Lithospermum prostratum*, *Polygala Chamæbuxus*, winter *Aconite*, *Cyclamen coum*, *Saxifraga sancta*, *S. Burseriana*, *S. B. major*, *S. Malvi* or *luteo-purpurea*, *Hepatica angulosa*, *H. triloba* in three colours, with also the double blue, *Snowdrops* in six or seven varieties, *Daphne Blagayana*, *Crocus longiflorus*, *Crocus minimus*, *Scilla Rhadni*, *Anemone blanda*, a few common *Primroses*, *Helleborus niger* in several forms, *H. maximus*, *H. angustifolius*, *H. torquatus*, *H. antiquorum*, *H. Bocconi*, *H. orientalis*, and a considerable variety of the coloured flower or forked stemmed species, *Androsace carnea*, *Dondia Epipactis*, *Erica carnea*, *Iris reticulata*, *Omphalodes verna*.—J. WOOD, *Woodville, Kirkstall.*

Trillium grandiflorum at home.—The note in THE GARDEN (No. 1102) is interesting, coming, as it evidently does, from one who admires

this fine Canadian wild flower and who takes the trouble to grow it well. For the past thirty years it has been my custom to visit the home of this *Trillium* during the month of May, when it is at its best in this locality, and the result of my observations is that the flowers are much finer where growing in the hardwood forests in deep rich leaf-mould, which is favourable for ample root-growth. The petals are broader and flatter, with plenty of substance; whereas, those growing in stiff soil are narrow and curled more or less. The most favourable situations are gentle slopes looking towards the west or north, but as the blooming season comes before the forest trees unfold their leaves, there is ample sunshine to open the flowers, which attain the greatest luxuriance when the nights are warm, with ample and genial showers. *Trillium grandiflorum* dies out in low, damp lands, and in Canada gives place to *Trillium erythrocarpum*, which delights in damp peaty soils. As regards some of these flowers being named *majus*, there certainly are amongst the multitude individual blooms which greatly exceed the others in size, and my impression is that they are borne on tubers that have reached their full maturity, because there would be thousands of plants around them in similar favourable situations with smaller flowers. I have waded through immense beds of these *Trilliums*, where it would not be difficult to gather 20,000 blooms, and where the gradations from the young seedling to the old parent plants were very noticeable, the latter bearing the finest flowers.—JNO. B. GOODE, *Côte St. Antoine, Montreal.*

Iris chinensis.—A note on this plant by Mr. Wood appeared in THE GARDEN last February. As far as I remember he advised a mixture of loam, rough peat, and coarse sand in rather a large pot half filled with drainage, the plants to be stood out of doors from May to August, and then removed to a greenhouse. I have tried half a dozen plants in this way without success, and though the pots are full of roots I see no sign of a flower-spike. Two years ago I gave a root to my neighbour, Colonel Johnstone. I believe he used the first soil that came to hand, viz., some from his garden, with a very large proportion of peat Moss litter and stable manure. In a 4½-inch pot this root made very strong growth, and in February last threw up a spike some 18 inches high which developed the most splendid head of blossom I ever saw. I do not understand Orchids, but if these flowers had belonged to an Orchid instead of an Iris, I suppose the plant would have been thought worth fifty guineas at least. I should add that little drainage was used in the pot. Shifted into a 6-inch pot with the same compost, the above plant has now thrown up four very strong flower-spikes out of a mass of dark green leaves. Six weeks hence it will be a sight worth seeing. Offsets in 4½-inch pots are also going to flower freely. The plants have been kept entirely under glass. As I fancy this Iris often refuses to flower, this account may perhaps be of interest to some of your readers.—E. C. BUXTON *Bettes-g-Coord.*

A note from Melbourne, Victoria.—Mr. A. Kingsmill, in writing to us the other day, enclosed the following interesting letter, written on the 19th December last, and which he had just received—

The *Hummamania* has done very well with me, and is quite an acquisition. It blooms with me a few months after sowing seed, and the flower stands all weather and lasts well. I have no glasshouse at all, but can grow a good variety of things out of doors. On the house I have *Honeysuckle*, *Ivy*, *Tecoma jasminoides*, *Solanum jasminoides*, crimson *China Rose*, which is a perfect treasure; a very graceful small-flowered *Fuchsia*, *Tecoma capensis*, the variegated *Honeysuckle*, *Jasminum grandiflorum*, *Wistaria*, *Campsidium filicifolium*, *Rose Gloire de Dijon*, *Tecoma venusta*, *Mandevilla suaveolens*, *Banksian Rose*, *Stauntonia latifolia*, and, on the hottest side, *Bougainvillea* and *Passiflora edulis*. About the garden I have *Rhynchospermum jasminoides*, *Phaseolus Caracalla*, and many other varieties of *Tecoma* and *Tasmania*. Our most useful flowering shrubs and trees include *Plumbago capensis*, *Raphiolepis*, *Pittosporum undu-*

latum, Sparmannia, Fugosia Pattersoni, almost all the English shrubs, and our own natives of course, do well. Grevillea robusta is now very fine. You should come out here about August to November. Things look their best then; but now we are getting dried up a little, and as I have no water supply, except what I catch in tanks, the plants have to stand as well as they can, and really it surprised me how they came through the great heat of January and February. I am getting a nice stock of Roses, having almost all the good Teas. We get Roses almost all the year, but for four months they lie fairly dormant whilst they are getting baked. The Columbine seed, Helianthemum, and all the others you gave me have done well. I find Leptosyne maitiua, an annual, the seed of which I got in Cork, is very good for cutting and really well worth growing. I find the Ailanthus glandulosa runs terribly by means of suckers. From one tree it has gone over 100 yards, and now I have a forest of it and cannot get rid of it. The trees and shrubs are very interesting, and I believe far more would grow in England than one sees tried. I am raising quantities of Eucalyptus and Acacia from seed; they germinate very freely and thrive well here. I must tell you of two glorious trees I saw in perfection in the Sydney Botanic Gardens. One was Jacaranda mimosæfolia, about 40 feet high and one mass of palest lavender flowers. The sight I got of it in Sydney will be before me for years. The other tree that struck me with such wonder and admiration was Sterculia or Brachyciton acerifolia (the Flame Tree of Illawarra, N.S.W.). It was covered to the tips of the branches with bell-shaped flowers of brightest crimson, and being about 50 feet in height, was quite a spectacle against the other trees.—ALISTER CLARK.

The "Builder" on clipped trees in gardens.—Even the *Builder* cannot agree with the ways of the men who use the shears as an instrument of "design." In a notice of some water-colour pictures in Bond Street it says: "Among them one or two drawings of Levens show the clipped tree fashion in *excellis*, and the effect is as ugly as it is curious." "A drawing of the clipped alley at Melbourne exhibits one of the dangers of formal gardening, as the masses are not straight or vertical, but tumbling about. This sort of formal work must be kept absolutely formal, or it loses its special effect and charm."

Heating greenhouses.—Perhaps one of the most common errors in the building of horticultural structures is that connected with the boiler and piping, and because this or that house is only required for such things as Roses, which do not need a great heat at any time, the boiler and piping are reduced to a minimum and regarded as sufficient for maintaining a given temperature even during the most severe weather. It is just possible that they will do so when the test comes, but at what risk and at what cost is a point rarely discussed. It is, however, a most important point, affecting not only the boiler and the coke heap, but the stoker, and not least the plants themselves. A house having four rows of 4-inch pipes destined for Roses, Carnations, or plants requiring a similar heat, could be kept at 45° or 50° during severe weather, and suitable for the crops mentioned. But to maintain this temperature nothing short of constantly driving the fire will suffice. This, of course, naturally leads up to a very hot, dry, fiery heat being given off from the pipes, the worst possible, not only under the circumstances suggested but for plants growing under any conditions. The atmosphere is most uncongenial for the plants themselves, and at the same time the most calculated to create and propagate red spider and other pests. It would be very different, however, had the same sized house contained six rows of pipes instead of four, and, of course, a boiler slightly larger in proportion. This arrangement means a little more outlay in the first instance, but I believe the difference of cost would be more than met in the first severe winter, because such an arrangement would consume less fuel simply because all the heat would be utilised instead of, as before, a great proportion passing away into space from the very fact that the damper must be very widely open. Inside the house the temperature would be much more congenial to plant life.—E. J. H.

—No doubt there will have been many complaints during the last year about gas bills where this has been used for greenhouse heating. The weather during the year 1892 has been most exceptional. We expect in this district on an average about forty nights and twenty days below freezing point, when firing is necessary to prevent damage to plants in a cold greenhouse. Instead of this average there were eighty-seven nights and fifty days when the thermometer descended below freezing point, and twenty nights on which the temperature ranged from 20° to 11° Fahr. The duration of the frost and the continuous very low temperatures recorded mean that the gas consumption in plant houses would be nearly treble the annual average.—T. FLETCHER, Warrington.

Anthracite coal and garden boilers.—Has anyone used anthracite or smokeless coal for heating garden boilers? If so, with what success? I have tried it, but found it of no use, the air current or draught entering the furnaces being insufficient to cause its combustion. That having failed, and to do away with a smoke nuisance in the gardens here, it is proposed to remove the boilers (two) heating some 3000 feet of 4-inch piping in our forcing houses to a site 50 or 60 yards distant from these houses. Will these boilers, augmented so as to meet the extra piping put on them by the lengthened underground pipes, heat these houses as efficiently as when the boilers were placed close to them? The reason of my asking is, that the water must lose a considerable amount of its heat before it gets to the most distant point of the underground pipes, that being about 100 yards from the boilers.—G. C. L.

Growing Mistletoe.—A relative of mine, an authority on gardening and botany, says Mistletoe will grow on anything. My experience is not so wide, but I have seen it on the Black and Lombardy Poplars, on the True Service tree, and on the Sweet Chestnut, in the last case, however, only in Italy.—C. K.

Trees overhanging garden.—A neighbour having planted some very tall Lombardy Poplars so close to my garden, that I have had to lop them, although they have only been planted a few weeks, I wish to know whether I can compel him to put them further back, and, if so, what distance? They are planted against a parting wall 8 feet high, and the trees are about 7 feet above the wall. Eventually they will do my garden a considerable amount of harm by shading everything. There are about a dozen of these trees in all. I should be obliged to you for any information you could give me in your next issue of THE GARDEN.—SUBSCRIBER.

**** You can call upon your neighbour to remove any overhanging branches, and if he does not do it, you can cut them off yourself. But you cannot prevent him from growing trees up to the edge of his boundary.—ED.**

The weather in West Herts.—The long frost of the present winter broke up on January 18, since which time there has scarcely been a single cold day or night. As the ground had become frozen to the unusual depth of 15 inches, and the thaw proved at first a very gradual one, the temperature at 2 feet deep has taken nine days to rise from 35° to 40°, while at 1 foot deep it has, during the same nine days, been rising at the average rate of a degree a day, and now stands at 42°. During the past month the falls of rain and snow have been unusually frequent, but the total measurement is only about 2 inches, which is three quarters of an inch less than the average. There occurred fifteen days when no sunshine at all was recorded, but on the other hand on five days the sun was shining brightly from four to six hours a day.—E. M., Berkhamsted.

Effects of the winter.—I think that on the whole, plants, especially of the biennial character, have come through the winter very well. Undoubtedly we had pretty well a month of severe frost off and on, and its persistency was very trying to some subjects, but the frost followed a spell of fairly dry weather, and when foliage and

ground are both dry, the plants offer a better resistance to the frosts. It is when severe frost follows soft, mild rainy weather and everything is moist that great destruction is wrought. The reason appears to be that even in winter the tender vessels of plants are filled with sap, which expanding into ice at the time of frost, breaks them, and thus injures their whole internal organisation. But some plants have greater resisting powers than others, and the weak ones go to the wall. In travelling about the country one can perceive great destruction has been wrought in cottage gardens among the Broccoli and Cauliflowers, but the hardier members of the Cabbage tribe, Kales, Savoy, &c., have stood remarkably well. The fact is, the open heads of Cauliflower and Broccoli form basins in which water lodges, with the result that acted upon by frost the plants perish.—R. D.

RAINFALL IN 1892. CURRYGRANE HOUSE, LONGFORD.

Month.	Total depth.	Greatest fall in 24 hours.	Number of days on which '01 or more fell.
	Inches.	Depth.	Date.
Jan.	1.21	.20	27 16
Feb.	1.74	.50	7 18
March	.96	.37	14 6
April	1.08	.44	25 13
May	4.41	.78	29 21
June	2.85	.67	1 17
July	3.11	1.22	3 12
Aug.	7.61	1.91	7 21
Sept.	4.56	1.36	1 12
Oct.	2.23	.53	14 19
Nov.	3.47	.35	17 23
Dec.	2.24	.35	8 19

Total ... 35.47 207
—J. M. WILSON.

Growing Lavender.—In THE GARDEN, Jan. 21 (p. 57), I notice a correspondent, C. W. Payne, asks about Lavender. If he will visit Fleet, Hants, by appointment, our Fleet director, Mr. H. Wigley, F.R.H.S., will meet him, and perhaps help him.—CHARLES HICKS.

Removing Moss from lawn.—Would any reader kindly recommend the best way to remove Moss and weeds from a lawn without breaking or otherwise disfiguring it? I have tried the chain harrow and soot, but without success.—W. C.

Names of plants.—E. R. B.—Any of the London nurserymen will supply you.—*Carl Gottschalk*.—1, *Tillandsia splendens*; 2, *T. psittacina*.—*J. Earl*.—1, *Lælia albidula*; 2, *Cypripedium Fockii*, poor variety; 3, *C. venustum*.—*Emma Schofield*.—1, *Microlepia hirta cristata*; 2, *Asplenium Belangeri*; 3, *Diplazum conchatum*; 4, *Myriopteris elegans*; 5, *Dennstaedtia Pavoni*.—*J. F.*—1, *Odontoglossum Edwardsi*; 2, *O. Cervantesi decorum*; 3, *Dendrobium linguiforme*; 4, *Cæloglyne speciosa*.—*M. B. J.*—Conifers came with all the numbers off; send again.—*J. Scherborne*.—*Hermannia albaefolia*.

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The English Flower Garden.—Design, Plans and Plants. Third edition, revised, with many new Illustrations. London: J. Murray, and through all booksellers.

No. 1108. SATURDAY, February 11, 1893. Vol. XLIII.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—Shakespeare.

ORCHARD AND FRUIT GARDEN.

PLANTING VINES.

EXPERTS are of opinion that the autumn, notably the month of October, is the best time to plant matured canes, though if my experience is any criterion, more planting is done in February and March than in any other months of the year. Undoubtedly Vines well planted in the autumn do recover somewhat from the rather severe treatment the roots receive even to the extent of forming a few fresh root-fibres, the top-growth being stronger during the following spring and better sustained accordingly. Very good results also frequently attend the practice of planting early in February, and there need be nothing approaching a failure if this important work is deferred a month or six weeks later. When it is a question of transplanting Vines, then this operation can be best carried out just as the buds are bursting. At that stage of growth quite large Vines may be moved to a considerable distance if need be without the total loss of a crop. It is not to be expected, however, that they can be transplanted without a considerable loss in the weight of the crop they will produce the same season, as, unlike most other fruits, there is little or no possibility of moving them with a ball of soil about the roots. What has to be done is to save as many healthy roots as possible, taking particular care of the younger portion of these, the old fibreless roots, and which are quite black in colour, not being of much assistance, but rather the contrary. When Vines are not forced, the roots also not being in a very cold border, the formation of root-fibres commences almost coincident with top-growth. Instead, therefore, of the roots of these late-moved or late-planted Vines being for several weeks inactive, the wounds not even healing over properly, they are active almost at once, and there are fewer losses among them accordingly.

Whether there shall be a long or short, heavy or light check to the top-growth after the stored-up sap is exhausted largely depends upon the early activity of the roots, and that is one, though not the only, reason why the roots are shaken clear of soil at planting time. When the roots are closely matted together in a ball, that is to say, have for several months been confined in a pot, they soon exhaust what fertility there is in the soil. Now, few observant gardeners need be told that root-fibres are the most quickly and surely formed when the roots are surrounded by fresh, sweet, yet fairly rich compost—some ingredients being, so to speak, peculiarly root-inducing. Not so very many years ago the planting Vines supplied by leading nurserymen were principally potted in soil evidently obtained by sifting over a heap of old potting soil. No wonder that they were poor, badly matured, and most indifferently rooted. Prior to planting these it was absolutely necessary to wash, not merely shake, the roots clear of the sour, pasty stuff that did duty as potting soil, as by no other means could a good fresh start be made certain. Of late years fresh fibrous loam has been more generally

used, a sprinkling of bones or Vine manure being also added, with the result that the root action has been very much more satisfactory, top-growth being also greatly improved accordingly. Pot Vines, either for fruiting or planting, can now be bought as hard, short-jointed, and strongly rooted as the majority grown under favourable conditions in private places. The question now arises should these have their roots shaken clear of the soil before being planted, or not? I hold that no general rule should be laid down. Thus if strong canes are obtained with a view to fruiting these at once in the form of supernumeraries, it would be unwise to greatly mutilate them, for that is what uncoiling the roots amounts to, the better plan being to plant them intact, and see that the old ball of soil and roots is never hereafter allowed to become very dry. Such Vines ought always to be planted in inside borders and about 4 feet away from the front of the house instead of being located midway between the permanent Vines, or what are intended as such. When all are crowded together, none have fair play, while the act of pulling out the supernumeraries must further cripple the already weakened permanent rods. If given good room, there is no reason why either strong Vines to fruit this season or smaller ones to grow into fruiting canes for next year should not be planted all over the body of the house, and against the back walls in particular. Many, but not all the market growers plant Tomatoes in these positions, but each time that I have planted a vinery, supernumerary Vines have been assigned the bed of the house, cutting them out as they cease to be productive, owing to the permanent Vines shading them badly.

Very strongly rooted planting canes, as well as those with their roots in sour, inert soil, are also best shaken clear of each other. Planted intact, the coils would always exist, and it must be better for the principal sap channels to be more straightened out. This, however, is a point I do not attach very much importance to. When the surrounding of intact balls of soil and uncoiled roots is favourable to their production, healthy quill-like roots are pushed out from near the collars of the Vines, and these, taken good care of, eventually become the principal support of the latter, the older or coiled-up roots not making much further progress. Why I prefer to soak the matted balls of soil and roots in a tub of water, this favouring their disentanglement without greatly injuring the roots, is for a reason already given, viz., because a better opportunity is then afforded of distributing the roots evenly and not too deeply in fresh, tempting compost. An unlimited supply of rich soil is not good for young Vines, as this causes a too rank top-growth at the outset. At the same time a better start would be made if something rather different to the rest of the border surrounded the principal roots when first planted. I have repeatedly noticed that abundance of fibres is most quickly formed when the roots are buried in a mixture consisting of equal parts of fine loam, perfectly fresh sifted leaf-soil, and the ashes and charred soil obtained by slowly burning a heap of garden rubbish. If leaf-soil that has not been either soured or over-heated during the process of decay cannot be had, or if there is any prejudice prevailing against the use of leaf-soil of any kind in a Vine border, then substitute either partially decayed horse-droppings, or, better still, some peat Moss litter that has first done duty in horse stables. Roots are very partial to the latter, and also to the "burn-bake" already recommended. Planted in ordinary rough Vine border compost, the chances

are the roots will not take possession of this soon enough to prevent a serious check or undue hardening of the top-growth. Warmth, air and moisture—saturation, however, being very carefully guarded against—are conditions also highly conducive to an early and strong root-action on the part of newly-planted Vines.

W. IGGULDEN.

Peaches for profit.—It is more than probable that the majority of growers will echo the desire of Mr. Groom (page 60) to know where such high prices are obtainable. I saw the original paragraph and concluded it must be a clerical error, and that five and six shillings were by some means made to read ten and fifteen. The former figures are much nearer the mark in this neighbourhood (some twenty miles from London); indeed it is very seldom that outdoor Peaches, mid-season and late fruit, however good they may be, return six shillings to the grower, and I can personally vouch for the fact that a first-class lot of Noblesse, Barrington, Dymond, and Admirable only realised last year four shillings and sixpence a dozen. The bulk of the fruit for some miles round here went at three shillings and four shillings. Now there is a great difference between four shillings and fifteen shillings, and perhaps "Y. A. H." would explain matters a little more clearly. Was it a question of retail selling? If so, the grower may indeed exclaim, "Save me from the middleman!" or are there provincial markets where such big prices can be obtained? If so, the reputation of London as the best centre for high-class produce is at an end.—E. L. B.

The statement made by me as to the prices I have obtained for open-air Peaches I can verify. If Mr. Groom has had any experience in sending Peaches to Covent Garden Market he must know that something else is needed than pretty boxes to take the critical eye of a salesman. The Peaches I send are sold on their merits, and I expect they do not find their way into a fruiterer's window. The Peaches as they arrive, let them be from a person who styles himself a market grower or not, are graded out; the best are put on one side for special orders, and they fetch their value. It may surprise Mr. Groom even more when I state that I have cleared £5 off a single tree of Dymond. Of course, the fruits were very fine. At the time I have received 15s. per dozen I have seen average fruits priced at 3s. Good fruit, whatever the season, will command a good price. The quality decides the price in all cases.—Y. A. H.

Cold storage of fruit.—The note in THE GARDEN (p. 60) on cold storage for fruit is very interesting. I fear much fruit is often lost by improper storage. Those who have seen the splendid collections of fruit staged at the meetings of the Royal Horticultural Society late in the spring know that to exhibit such so late in the season needs special care, much depending upon temperatures, an even rather low temperature being essential. Another equally important point is perfect ripeness of the fruit before gathering. At one time having a great quantity of fruit to store I turned two ice wells to good account by filling these with late Apples, as at the time they were filled the prices were very poor. This fruit kept splendidly in the above structure, there being very little decay and an even temperature. The result was that the Apples were sold without any difficulty in March and April and realised excellent prices. In many gardens where fruit has to be kept till midsummer many shifts could be made to store it. A wooden shed or building answers admirably, and if this can be thickly thatched with straw or, what is better, heather, it makes an excellent store. When late fruit is stored as advised a sample may always be kept in the fruit room proper to remind one of the variety in season with a note as to quantity in store and other particulars.—G. WYTHES.

Apple Blenheim Orange.—Out of some dozen or more sorts of dessert Apples now to choose from I find none to excel a well-coloured mellow Blenheim.

heim for sweetness and flavour. Ribston is richer, but it has too much acidity to suit all palates. My advice to farmers formerly as one means of making more of their produce was to store their Apples, especially Blenheims, till winter. But that is now of no use owing to the great influx of American fruit, for although the Blenheim is generally admitted to be superior to any of the American productions, it has the past two months been worth only about 10s. per cwt., which, after deducting 20 per cent. loss in weight and from decay, with extra labour involved in storing, &c., is only about half what it realised direct from the tree. I have been in the habit of storing a considerable quantity of fruit to colour, but with the exception of King of the Pippins there is nothing gained by it, nor have I found this past season any exception to the rule of the last few years.—E. W. B., *Holmer, Hereford.*

BLOOM ON GRAPES.

I HAVE had splendid crops of Grapes, large bunches and the berries of good colour, but the bloom is deficient. My house is very low and naturally damp. I shall be glad of some hints on this subject.—ANXIOUS.

* * Grapes that present a polished appearance, that is to say, do not carry a good bloom, lose a point when in competition with those that are more perfect in that respect, and it is equally certain they are not nearly so much admired either on the Vines or the dining table as they would be if well furnished with bloom. The reason for this formation of bloom I am not able to state, but am strongly of opinion that it is one of Nature's provisions for protecting the skins. If from any cause the bloom is destroyed, the keeping quality of the berries is greatly impaired. For instance, failing to ventilate a house of ripe Grapes sufficiently and early enough to prevent a sudden rise in the temperature from sun-heat, this being accompanied by a serious condensation of moisture on the naturally cold berries, is almost certain to end in an early decay of the latter. Especially is this the case when this so-called "sweating" is not stopped soon enough to prevent the moisture trickling down the berries. With "Anxious" however, it is not a question of preserving the bloom intact, but rather how first to "lay it on." According to what he states, no fault could be found with either the size of the bunches or the colour of berries that the Vines under his charge have produced; but the absence of bloom quite spoils his chance of winning prizes. He is unfortunate both in having a low-roofed house and a naturally damp locality to contend with. In low, flat-roofed houses the atmosphere is always more or less stagnant even on comparatively high ground, while if the surroundings are naturally damp it is no easy matter to constantly prevent injurious stagnation. One of the vineries under my charge is also flat-roofed and situated in the lowest part of the garden, the subsoil of which is pure clay, and, further, is on a dead level with a lake of water near at hand. I can, therefore, fully appreciate the difficulties "Anxious" has to contend with, and, what is more to the purpose, can give him a remedy. Too much moisture constantly in the atmosphere is simply fatal to all prospects of a good thickness of bloom on the berries, and by way of guarding against this more fire heat must be given. Especially must there be a chink of front air admitted every night and more freely in the daytime from the period when stoning commences. The formation of bloom dates even further back than that, but I have never found it necessary to give front air earlier. When a cold wind prevails little or no front air is needed, but during dull, muggy weather it is especially necessary that the pipes be moderately hot and front air admitted freely, this promoting and sustaining a good circulation of warm, dry air. There is no necessity to keep the house excessively dry, or this may lead to red spider injuriously affecting the colour of the berries. What "Anxious" and others similarly situated have to avoid is a too free use of the syringe or watering pot, constantly damping down, creating far more moisture in the atmosphere

than is good either for the foliage or the berries. A good circulation of air unaccompanied by fire heat will favour both colouring and the formation of bloom, but as I have repeatedly proved, the ripening in this case is far from being perfect. The berries may be purplish black and thickly coated with bloom, and yet be sour to the taste, also keeping badly owing to an insufficiency of heat to bring about the desired chemical changes in the fruit. "Anxious" if he follows my advice may perhaps find that his berries will not be quite so large as formerly, a rather moist heat causing them to swell to the greatest size, but most probably he will not regret this if they carry a good bloom. I ought perhaps to point out that overhead syringing after the flowering period, if not exactly fatal to the bloom, is at any rate most detrimental to it, but "Anxious" will scarcely have made this mistake.—W. I.

SOWING AND PLANTING MELONS.

FROM the present time onwards throughout the season, the sowing and planting of Melons will be of frequent occurrence in many gardens. Anyone might naturally expect that such a well-known and written-about fruit as the Melon, the merest tyro in fruit culture would be able to grow successfully. In sowing the seed, place them singly in 3-inch pots, and not several in a larger pot. Use good loam in a fairly moist state without any other addition. The soil must be pressed in firmly and the seed inserted three-quarters of an inch in depth. After being sown no water will be needed, as this has a tendency to cause the seeds to decay. The pots should be either placed in a propagating frame or a handlight, according to convenience. Directly the plants have grown about an inch, remove them so that they may receive more light, or they will surely become drawn. At this stage I get an ordinary cutting box and fill it with cocoa-nut fibre refuse, and after it is sufficiently warmed, the pots are plunged in it. This is now placed near the glass in a warm part of the structure where the little plants gain strength. After the first or second rough leaf is formed, the plants must be planted out. It must be remembered that Melons very quickly become pot-bound, and when this is the case, they spindle up. Some people repot them again, but I prefer to plant out. In preparing for planting the soil must be pressed together firmly. Leaf-soil or manure should not be mixed with the rooting medium, this causing a gross growth. A Melon plant may be strong, yet devoid of grossness. If the soil is inclined to be very heavy, add a little rough charcoal and lime rubble broken up. Feeding may take place after the fruits have set and are swelling off. In planting do not make the fatal mistake of planting up to the seed leaf; this is quite unnecessary, and a sure source of canker or gout at the collar. It does not even add the least more root action, in fact the reverse. The hillock being made firm, the top of the ball should be only just beneath the surface, and must be made firm, a watering with tepid water being given immediately afterwards to settle the soil about the roots. The roots being as yet confined to the ball, mere surface sprinklings are not sufficient to reach them, and for a time at any rate each plant should be watered every alternate day, applying it direct to the ball. By following out the above details the plants will start away strongly. A. YOUNG.

Abberley Hall.

Peach Alexander.—A year ago through the columns of THE GARDEN I asked for information respecting the dropping of the buds of this Peach, and whether it was the experience of cultivators of this early variety that it was more fickle than other older kinds. Judging from the replies generally given at that time, I fear I must have failed to make myself clearly understood, for correspondents informed me that Peach bud-dropping was to be attributed to scarcity of water at the roots, high night temperature at the commencement of forcing, strong insecticides, unripe wood, being planted

in loose or sandy soils, and so on, matters which I was perfectly conversant with, but neither of which applied to the case in point. At the risk of repetition I venture to repeat my query. What I really wished to know was whether cultivators who force this Peach early had found it more prone to drop its buds than other kinds growing alongside, and if so, could they give any feasible reasons for such strange behaviour. I am inclined to think there is something constitutional in the Alexander, for after most careful treatment all the best fruit and wood-buds have again dropped, whilst Hale's Early, Stirling Castle, and Lord Napier Nectarine growing in same border and same house have scarcely dropped a bud. Curiously, it is all the best formed buds—those on the middle of the shoots which have gone, whilst those at the base and those at the extremity, generally considered the inferior ones, have stood, although the wood appeared of the best quality, nicely ripened, firm, and not gross, but short-jointed. Fortunately, this kind has one redeeming feature, viz., that of developing those latent and almost invisible buds that spring from the bases of the shoots and elsewhere. These open and set most freely, thus producing a full crop, after so provoking and apparent disappointment. I have observed that bloom-buds formed on the short cluster spurs do not drop quite so badly, which suggests a new departure in the stopping and pinching of the shoots in order to multiply these cluster spurs for next year's training instead of the full length shoot as hitherto grown. It should be stated that as the tree grows older its bud-dropping propensities decrease and possibly age may rectify the whole fault. One tree now covers half the front trellis of an early house, and as a matter of course one does not like to be beaten in the attempt to grow this extremely desirable early Peach. A Peach that takes a month's less time to come to maturity when forced than such kinds as A. Bec, Grosse Mignonne, Royal George, Stirling Castle, and others is an acquisition and cannot be easily dispensed with. I hope Rivers' Early Nectarine (new) will prove a worthy companion to the Alexander Peach, less the bud-dropping fault.—W. CRUMP, *Madresfield Court.*

Grape Lady Downe's.—I agree with "T. P." as to the qualities of this Grape as a late keeper and a free cropper. Given plenty of heat when in bloom, I find no trouble with small berries at thinning-time. Its only fault is its liability to scald just about the stoning period if the atmospheric conditions are not congenial. I have seen bunches perfectly fresh and plump shown the first week in August that had been ripened the year previous. Trebbiano I find a very good late-keeping white Grape, but the quality is anything but first-rate.—E. M.

SHORT NOTES.—FRUIT.

Melon Early Davenham.—I would like to call attention to the above variety as an early kind for pot work. Last year it ripened its fruit a week earlier than Blenheim Orange, both being sown at the same date. It is a scarlet flesh, the flavour good, and it sets very freely.—J. MAYNE, *The Gardens, Bicton, Devon.*

Apple Waltham Abbey Seedling.—Although this variety is of such handsome appearance, large, and good in quality as a cooking Apple, it does not bear freely every year. This at least is my experience in a heavy soil. I have had more trouble with this than any other, in spite of several root-prunings which the tree received. However, now it is in good condition, it bore a heavy crop last year, and promises well for the coming season.—E. M.

Melon La Favorite.—In answer to your correspondent respecting the above variety, I beg to state that I grew it largely during the past year and had every reason to be well satisfied with it. The flavour I consider first-rate, but, as your correspondent points out, it certainly does take a very long time in coming to perfection and ripens its fruit very irregularly, though to some this may prove an advantage; still, with this drawback, I intend growing it largely again this year as a mid-season and late variety.—J. MAYNE, *Bicton, Devon.*

PEAR PITMASTON DUCHESS.

THIS is a popular though not a high-class Pear. There is no connection between it and Duchesse d'Angoulême, which is a coarse, gritty French Pear, later in ripening, valuable for market, but altogether second-rate. It bears a much stronger resemblance to Marie Louise in all but flavour, but grows much larger, and medium-sized fruit can also be distinguished readily enough, owing to there always being a patch of russet near the foot-stalk. Naturally, much the finest fruits are usually obtained from well-grown wall trees, the fruit also being more pyriform and clear in colour than is the case when the trees are grown in the open. Wherever the fruit is grown the same failing in the quality prevails, an unpleasant acidity offending the palate of all who appreciate a really good buttery Pear. There is yet another failing, and that is the thinness and sensitiveness of its skin. The fruit grown against walls, if carefully handled and properly packed when sent to a distance, is beautifully

preference being given to a site where the sub-soil is of a gravelly nature, it will, without much further trouble, quickly develop into a grand or naturally-grown pyramid, and produce several bushels of fine fruit whenever the season is not dead against fruit trees generally.

PRUNING FRUIT TREES.

APPLES.

THERE is yet room for great improvement in this much-written-about operation, judging from the specimens one is continually meeting with in gardens. More original thought on the subject and less adherence to old methods handed down from generation to generation are wanted. Take espaliers and dwarf trees for instance; how much more fruit might be gathered if one half of the stronger wood was cut right away and thinner and more extended growth allowed, instead of pruning off all the annual shoots only and forming the thick, stubby and scrubby-headed samples of professional skill which will not admit any light and scarcely leave room for fruit to grow at all. It is very necessary with any kind of Apple tree that

reached only half the usual size and was devoid of colour, while on a tree of the same sort recently grafted the Apples were very fine, well coloured and a fortnight earlier, and consequently worth quite double in the market.

But I cannot approve of the general orchard method of taking out all the inner bearing sprays; rather I encourage this central growth to a certain extent, and in re-grafting even insert grafts on young shoots strong enough for the purpose, as this tends to preserve a well-balanced head and is conducive to the longevity of the tree. Many an Apple tree which has long succumbed to the elements would be standing to-day if more central growth had been the aim and outer branches thinned to entice the sunshine to the fruit instead of forcing all the fruit out to the sunshine by persistently trimming off all the young growth up a branch, leaving bearing spray only at the extreme end, thereby giving the wind every chance to do damage with this leverage of in some instances 12 feet or 15 feet of bare limb.

PEARS.

In some Pears we find the small fruit more luscious and juicy than the large samples. Gansel's Bergamot is an example of this. Seven years ago I found a tree of this variety covering the front of a stable facing south. Although a strong grower and eager for extension, it had been confined to this one aspect. Since then I have trained it on both the eastern and western sides with the result of large increase of crop, and, strange to say, although the Pears on these ends were smaller, they realised more than those of the largest size. Yet the latter were more carefully packed, each fruit being wrapped separately in paper, for these Pears grow to a very large size under good treatment. I concluded the purchaser was aware of a peculiarity in this fruit that the smallest keeps best. We grow some fifty varieties of dessert Pears, and in my opinion none will exceed Gansel's Bergamot in quality and flavour in its season—October to November. The large specimens are handsome, although not so saleable as the longer yellow varieties; still, the price reaches 3d. per lb., and sometimes 2s. per dozen wholesale. I am now training this tree also over the roof, having had considerable increase from several trees by allowing stiff growth to extend upwards. For why should we be always tied to old cut-and-dried formulæ and methods, especially when profit (which is a consideration with most people in these times) can be combined with a change? Variety is pleasing, and a show of fruit, even above the wall, is attractive. An object of interest in our garden last autumn was



Pear Pitmaston Duchess. Engraved from a photograph sent by Mr. W. Norman Blake, Bedford.

clear, but that obtained from pyramids and bushes is very apt to present a much-scratched, bruised appearance when fully ripe. This I attribute to wind-waving and contact, it may be, with leaves and branches; but it is so very marked and almost inevitable, that had I any to market I would send them before they were fully ripe. The season of this fine Pear is said to extend from October to the end of November, but as a rule the fruit will not keep so long as that, the middle of November frequently seeing the last of it.

Quite young wall trees produce fruit, while those six years old and upwards yield grand crops, which, if freely thinned, as they must be if samples 1 lb. or little less in weight are desired, pay remarkably well. Cordons with one or several branches also produce exceptionally good crops of fruit, and no collection of wall trees may, therefore, be said to be complete unless it comprises one or more specimens of Pitmaston Duchess. This remark applies with still greater force to pyramid and rather low standard trees, but these, for reasons already given, ought always to be located in a somewhat sheltered position. If a fairly healthy young tree is planted on moderately good ground, the

branches should be kept thin enough to allow the rays of the sun full play amongst the fruit. I am speaking now with reference specially to the garden where only choice fruit should be grown. Gather an Apple from an outer branch and another from the inside of a thick-foliaged tree. On tasting, the latter will be found to bear no comparison to the former with its rich appetising flavour and rosy attractive colour; therefore, get as much as possible of this health-giving sunshine concentrated in the fruit, and do not be afraid to use the saw on a tree that has been neglected in this respect for many years. Of course in the case of a tree properly pruned from the first, and some kinds scarcely require pruning at all, a saw would not be required, as cutting off large branches must be considered as only a necessary evil. When done, the bough should for appearance sake be cut right away and no stump left. As regards profit, this thinning out is of great importance with some varieties, especially in these times when size and colour in fruit are of so much more value than quality. We cannot, or we do not care to well thin out the fruit to advantage on a standard tree, so the next best course is to thin the branches. I had an instance the past season of the advantage of thorough thinning. An Apple tree of a good local variety was so laden and the boughs so fallen together that the fruit

was a cluster of twenty-three large Vicar of Winkfield Pears suspended over the spouting. This is a profitable Pear to grow, being hardy and a free cropper, long, yellow, and handsome, coming in at Christmas. Although not of first-class quality except for stewing, the fruit sells well at from 1s. 3d. to 1s. 6d. per dozen. In pruning old Pear trees it is advisable to keep the shoots cut well back and to encourage as much young growth as possible close to the wall. I generally defer this operation till spring to distinguish plainly the fruit-buds, and any long old spurs with few or no fruit-buds I cut clean away, gradually filling up with young shoots laid in. I have found this one way of securing a more regular crop over the centre of the tree. Some varieties, and these by no means the heaviest croppers, bloom very profusely, which seems to be a waste of energy. I have tried thinning out the blossom-buds, but with no satisfactory results. Against the wall it is of great importance to keep the young shoots pinched back when the fruit is setting to force as much vigour as possible towards the swelling of a crop. The present method in vogue with nurserymen of grafting and budding near the root enables one to depart from the original intention and form bushes of standards if desired. In my mixed plantation I encourage some side growth on the young standards, especially of Plums, and when the head is not well balanced.

By so doing the trees are capable of bearing in a short time two or three times the quantity of fruit we should get from a single head. Besides, the head is very apt to break off with weight of fruit, and in this bush form you do not require a ladder for gathering—at least, for some years to come. The side growth of Plums is sometimes very strong, 5 feet in one season, and it seems a waste to cut away all this strong material, which would the following year probably bear a considerable quantity of fruit. These bushes must be kept thinned, and it is best to cut what is requisite right away rather than partially down, which would only induce strong shoots to start again.

BUSH FRUIT.

As to bush fruit, my object being always the heaviest crop of berries, I rarely prune my Gooseberry bushes, unless to keep the shoots clear of the ground. By not using the knife in the centre of the bush, we are seldom troubled with suckers or too thick growth; in fact, I like to see some strong young growth springing up, in some cases reaching 5 feet, as it adds to the height and productiveness of the bush. If the middle appears thick in winter, the weight of fruit will open it out in summer, and besides, we have been visited the past few springs with very severe frosts, thin bushes of some varieties having been denuded of fruit, the only berries entirely escaping injury being those in the middle of a thick bush. Of course, if you once commence using the knife much in a Gooseberry bush, you must follow it up, as there will be difficulty in getting at the berries, owing to the mass of young shoots. In gardens proper, attention must be paid to the neatness of the bushes for appearance sake, especially when they are by the sides of the walk. On the other hand, a well-manured, unpruned Gooseberry bush, with its immense crop of berries, is a greater source of gratification than the close-pruned, neat, but comparatively unproductive specimens so often met with.

With Black Currants, we must prune, or rather cut away old wood to secure strong young growth for preservation and productiveness of bush, and we must have room to get amongst them. Apply more manure and prune less if you want bush fruit in quantity for profit. It is astonishing what an amount a plot of land, well manured and with the bushes covering the ground, will turn off. There is no necessity, as with Apples, for the sun's rays to reach the fruit; in fact, too much direct sunshine is injurious to young green Gooseberries; it turns them brown and injures the sale. A portion of our Black Currants which, in the ordinary way should have been thinned last year, were not touched for want of time. The thick growth saved the fruit from frost, and gave us a crop worth, according to the land occupied, more than £100 per acre. Red Currants should generally be pinched back in summer, but my bushes (Raby Castle, strong, sturdy and prolific) have neither been pruned nor pinched since they came from the nursery, and certainly pruning could not improve them. The simplest way to treat Raspberries if they are to be supported (though in large plantations they are cut low and supports dispensed with) is to have them in rows, say, 5 feet apart, running some string, thatch twine or other material each side of row, fastening to stakes every 2 yards or 3 yards. In pruning I prefer to cut the canes, according to size, to a height of from 2 feet to 5 feet, which gives a more regular crop and more room for the fruit than when all of one length, as most of the fruit springs from the upper buds of the cane.

Holmer, Hereford.

E. W. BEAVEN.

Strawberries for forcing.—At page 52 Mr. Leach is very severe upon what I consider one of the best of early Strawberries for forcing, viz., Vicomtesse Héricart de Thury, when he states that it is inferior to John Ruskin or La Grosse Sucrée if ripe fruit is required in February or March. With regard to ripe Strawberries in December, so far as I have been able to judge, it does not pay to get them at that date. I have also failed to get La Grosse Sucrée in January,

but I have found little difficulty in getting Vicomtesse at the end of January or early in February; indeed, I think it is the very best early forcing Strawberry we have. It is well known fruits vary greatly in different soils, much also depending upon the grower's convenience as to forcing and securing of runners for early work. I am aware this vexed question of varieties to a great extent is a local one, but I have been at some pains to go into this matter, the pages of THE GARDEN having furnished me with valuable notes as to growers' opinions of varieties. Only last year copious notes appeared in THE GARDEN as to varieties, and Vicomtesse was a great favourite. With me La Grosse Sucrée retains the petals and often refuses to set or swell for some time. It must be remembered I am writing of bloom in December or January. Later, say in March, no such difficulty occurs, as it sets freely then. On the other hand, Vicomtesse is the reverse, it setting freely and in stronger heat. I admit the flower-stalk is none too long; the fruit is small, but it is good and freely produced. I must also differ from Mr. Leach when he says that there are many varieties that beat Vicomtesse for size and flavour in March. Larger they may be, but often flavourless. If Vicomtesse is well grown, it is not to be despised on account of size. I am fully alive to the importance of size, as in a market fruit flavour is the last thing thought about. I have not included John Ruskin in my note with La Grosse Sucrée for various reasons, it being a newer variety. I have used it for early work under the same conditions as those named, but so far it has not done so well as Vicomtesse. When fruited in April, having the same treatment as La Grosse Sucrée, it was very good, but I mean to give it another trial for first early. Mr. Leach may have grown it under better conditions; also have had stronger plants. Mine were not so strong as those of Vicomtesse. So far I have not found any kind equal to Vicomtesse H. de Thury for very early fruit.—GROWER.

PEACH GROWING FOR MARKET.

ALTHOUGH I have not at any time been engaged in the cultivation of Peaches for profit, I have been so situated that I had to find the best market in which to dispose of a good quantity of surplus fruit. To grow Peaches for profit, one requires to start on quite a different line from that of a private grower. I feel quite sure that to grow Peaches successfully with the least possible outlay in the matter of maintenance, the roots must have the run of a good deep border, and the branches must be trained on the extension system. Young trees that are confined both at the roots and branches can be made to produce fruit of good quality by constant surface feeding, but the man who wishes to grow for profit does not want the constant expense of providing the manure and labour that such a system involves, nor is it necessary if he starts right by providing a large and deep root run for the trees and a proportionate space for the branches. The trees the market man wants must each produce from thirty to forty dozen fruit in one season. The man who starts growing for profit should not have to renew the trees for a period of twenty years, and he need not do so if suitable provision is made for the roots. The border should be at least 2½ feet deep and half or two-thirds the width the branches are likely to extend to. The water supply must also be ample. I have not the least doubt but that early and late Peaches will pay better than Grapes. Peaches pay best from the middle of June to the middle of July, as to have fruit ripe at that time not much forcing is required. I have known really fine samples fetch as much as 18s. per dozen at the end of June, while it has been difficult to find a market for second-rate fruit. I have frequently received 6d. each for good Peaches grown in unheated houses. Good fruit of Barrington, Princess of Wales, and Salway find a ready sale early in October. In all cases the grower must freely thin out the fruit when quite young. If he thinks that he is going to make a

larger profit by leaving a greater number of fruit to mature than what can develop into large and handsome examples he will make a mistake, and the older the trees are the more necessary is it to take lighter crops. For whatever purposes Peaches may be required, there is no doubt that large houses are better than small ones, except where extra early fruit is required. J. C. CLARKE.

CONTAMINATION OF FRUIT.

It is doubtful if anyone fully realises the injury done to choice Apples and Pears by contamination until it is brought home in some striking form. I have good reasons for remembering a case in which the produce of a garden and orchard was pretty well spoilt one season through being placed in a newly-built fruit room. In fact, the structure was not completely furnished with shelves when the fruit was taken to the store, and the mortar in the wall was scarcely set. Although the precaution was taken to cover the new shelves with newspapers on which to place the fruit, both Apples and Pears were spoiled. That the fault was in the store room was perfectly clear from the fact that sorts of Apples and Pears that were excellent in flavour when stored were so contaminated by the surroundings in two or three weeks as to be nearly useless, and the longer they remained in this structure the worse they got. This, I believe, was an exceptional case, but it is worth putting on record, as it may be the means of preventing others falling into the same error. In the following season the fruit kept splendidly in the same building. Whether it was the air of the building or whether the new timber used in forming the shelves impregnated the paper on which the fruit lay, I cannot say, but ever since I have been careful to keep the fruit room well ventilated for two or three hours a day in suitable weather.

The most convincing proof I have had of this form of injury to fruit occurred not many years ago at a fruit show at which I was judging. The finest dish of Marie Louise Pear in the show failed to get even the third prize, because the flavour was so decidedly impregnated with camphor that it was quite objectionable. I felt so interested in this exhibit, that as soon after as I could I found the owner of this particular lot of Pears, and of course found him bitterly complaining of the incompetence of the judges in not awarding his fruit the first prize, which so far as appearance went they ought to have had. I, however, prevailed upon him to bring forward the box or basket in which they had been brought to the show. The box was quickly brought forward, when an examination of the packing material used revealed the cause of the mischief. A few days before the show the owner had received a box by railway containing medicine, the bottles being packed in paper shavings. This box and packing material were used for sending the Pears to the show in, with the result I have mentioned. As soon as the box was opened the paper shavings smelt strongly of camphor, which the disappointed owner did not attempt to deny, but it was not until he tasted the Pears that he was fully convinced that the judges were right, and that he had incautiously made a blunder. That Apples and Pears get more or less contaminated when they are laid on dirty and worm-eaten shelves is probably known to some, but a reference to it here may be of some service. It may also be of some interest to mention that the more advanced the fruit is towards ripeness the more quickly it becomes tainted with any injurious surroundings. Perfect cleanliness in the fruit room is more important in securing well-flavoured fruit than some people imagine, and too often the position of the fruit room is not conducive to pure and healthy surroundings, as it is sometimes necessary to use coverings of some kind to protect the fruit from frost. It is very important that whatever is used should be perfectly clean and free from any unpleasant smell. Perfectly clean and sweet wheat straw is about the safest covering to use, and even this should be removed as soon as the danger from

frost is past. For packing small quantities of choice dessert Apples or Pears for the weekly hamper, each fruit should be first wrapped in tissue paper and then packed in paper or very fine wood shavings.

J. C. CLARKE.

EXHIBITIONS OF THE FUTURE.

MUCH interest has been evinced by the many articles that have appeared recently on Chrysanthemum exhibitions with a view to introduce greater variety into the displays and relieve them from the charge of formality. But exhibitions in general may be well considered, and views expressed upon the subject of the "future of flower shows" will bring forward many useful suggestions to render displays of flowers more interesting and less monotonous. It is singular that flower shows should be so inartistic, and few departures in methods of displaying the exhibits observable from year to year. Exhibitions of this character are slowly, but surely dying, and the wonder is that so many societies have managed to weather the storms of a troubled existence through such a lengthened period. The remarks one hears at shows are sufficient to indicate that it is through want of spirited endeavours to create new features the general exhibition of to-day is ceasing to interest. The same men each season win prizes in the same classes and with the same plants, badly grown "specimens" often gaining awards simply through poor competition, yet prizes are still offered for them as freely as in the days of yore when they were in full fashion. A country show is a delightful institution, but it is fast disappearing. The same scene presented to view year after year fails to win admiration or to attract sightseers, and the funds decline. What can be accomplished towards altering this condition of things? Many of the readers of THE GARDEN are, I know from recent observations, much interested in this matter, and therefore their suggestions will be gladly welcomed. It is not easy to introduce new features, but a good discussion will do much to help secretaries of societies to make their schedules less monotonous and introduce much-needed variety. There is usually in exhibitions of whatever nature, whether of Roses, Chrysanthemums, or to embrace miscellaneous plants, a sad want of artistic arrangement. At more than one of the great shows at Earl's Court last year something had been attempted in this direction by breaking up the view, not permitting long rows of plants, cut blooms, or fruit to meet the eye, presenting a formal, monotonous, and uninteresting picture. At many shows the plant tent is a sad muddle, large and small things associated together without the slightest attempt to make a pleasing effect. I have seen tuberous Begonias placed against stove specimens, small exotic Ferns in company with tall Palms, the result a curious mixture, displeasing and uninteresting, betraying to visitors a total disregard for the appearance of the tent. It is quite as easy to keep the various exhibits of one kind to themselves; thus when a severe competition in Roses or groups, as the case may be, occurs, break long lines by interposing at intervals a small group, basket of plants, or even a large specimen—anything to create variety and form an attractive picture. No additional labour, at least very little, will be thrown upon the secretary or the committee. It is simply a matter of forethought, fixing in the mind's eye the positions the various plants are to fill. The splendid shows at South Kensington were a pleasure to look at, and the result was produced by knowing how to place the plants, flowers and fruit in an attractive way. Beauty in general arrangement is as important as individual excellence in the exhibits, but in England we think little of the former, centreing all our energies into the productions of abnormal specimens, usually of vegetables. A tremendous competition in vegetables will occupy much space, but I have seen rows of Potatoes, Peas, Beans, and various other things without a Fern or flower

to relieve the view. It is this kind of arrangement, if such it can be called, that is so displeasing to visitors, who pride themselves upon distinguishing between good and bad taste.

A struggling society will sometimes endeavour to make a brave show by offering a few big prizes to attract well-known amateurs, professional gardeners, or nurserymen. This is the case with Roses in particular. There may be three big classes in the hope to draw the foremost growers to enter into competition, but in nine cases out of ten they fail to come, not through unwillingness to enter the lists, merely for the excellent reason it is impossible to exhibit at every Rose show. Promises are made and as often broken. This is disappointing to the secretary and others interested in the society, and to the expectant public. Much better would it be, and more encouraging to horticulture in the neighbourhood, if other classes that have to suffer for the few big attractions were strengthened or extended, those for fruits and vegetables in particular. Miserable prizes are offered for these important exhibits, and indifferently grown stove plants win premier honours of much greater value. It is gratifying to see that at the majority of exhibitions a distinct feature is made of the groups, and it would be satisfactory to encourage these interesting arrangements. Unfortunately, they are generally crowded up so as to render it impossible to see them, and in many cases a tent might be erected solely for groups, as at the great Wolverhampton show. Of course, every little village exhibition cannot emulate such a great show as that of Wolverhampton or Shrewsbury, but often the competition is sufficiently keen to warrant such an introduction. Orchids might be arranged in groups, and then perhaps the so-called "specimen plants," which are usually not specimens in the ordinary sense of the word at all, would disappear. It is folly to perpetually offer prizes for such plants when there is no adequate response. At Tunbridge Wells the groups of plants are, as a rule, remarkably fine. One arrangement at the last summer show was unique, but, unfortunately, vegetables were also shown in the same tent, very little apparent trouble being taken to present a pleasing display. Hardy flowers are often the chief features of interest, and deserve still great encouragement. The beauty of the Botanic shows depends largely upon the bold bunches of various perennials, a gay mass of colour, representing an interesting variety of things. Encouragement might be still further extended to these by offering prizes for certain families—Iris, Pæonies, and so forth, with practically an assured competition. At present the hardy flowers are usually supplied at country shows by some enthusiastic amateur in the neighbourhood or by nurserymen. The Diss Horticultural exhibition is one of the most interesting in England, for the reason partly that the display is made beautiful by a fine show of hardy flowers. Well-grown plants in pots would fill the tent with colour and beauty. A mass of Trollius, the pure white *Trillium grandiflorum*, *Delytra spectabilis*, or *Spirea palmata*, &c., is more effective, beautiful, and interesting than a badly grown stove specimen, or one that having done duty for so many years has lost its freshness. One of the prettiest effects I have ever seen at a show—I forget the place—was a group of *Primula Sieboldi* of various varieties on a slope, the pots buried in Moss, and setting off to advantage the frail beauty of the flowers. The tuberous Begonia is an excellent exhibition plant, and it would be worth while to extend the groups to those of this flower, most effective when massed together to get a distinct and decided effect in colour. Arranged with Fern or some variegated plant as *Dactylis glomerata variegata*, a pleasing contrast is obtained. *Gladioli*, *Delphiniums*, *Asters*, and other hardy or half-hardy plants are always bright and showy when good varieties of each are secured. Chrysanthemum shows have been already ably discussed in the pages of THE GARDEN, but the remarks made there as to greater encouragement being given to fruit, avoiding also long rows of boxes, apply also to the early and late summer exhibitions. VISITOR.

KITCHEN GARDEN.

A SUCCESSION OF EARLY CAULIFLOWERS.

I AM of opinion that sufficient attention is not always paid to securing a succession of early Cauliflowers. It is of little use planting a large quarter with an early variety of Cauliflower from one sowing, as in all probability these may be in and over in less than a fortnight. By a little judicious management the supply from the same space of ground may be made to last a considerable time. A succession of useful-sized Cauliflowers is of the greatest importance. To keep up a succession and commence as early as possible, handlights, or cloches as used in the market gardens, are very useful, as by their aid Cauliflowers may be cut considerably earlier. At one time handlights were looked upon as a necessity for a garden of any pretensions, and it is quite evident that we shall have to rely upon them again if we are to have a succession of cold springs, such, for instance, as we have had during the past few years, when planting direct to the open has been quite a month later than usual to be considered safe. No other vegetable of a like nature feels the check of removal so much as an early Cauliflower, as instead of starting away freely into growth, the check causes premature heads of poor quality. With the aid of handlights, no such check will be received, and whilst other plants may be held over for planting direct to the open, those under the protectors will be growing steadily on for early cutting.

The very earliest Cauliflowers other than those which may be gently forced in a brisk pit with a body of fermenting material are those pricked out under handlights in the early part of the previous October. These, if the precaution was taken to prick out direct on to deep and well-enriched soil, and also in a sheltered position well exposed to the sun, grow away steadily, care being taken to keep them carefully ventilated and also well supplied with moisture. A good soaking of liquid should be given just previous to turning in. As a rule, the recognised number for each handlight is four plants, one at each corner, the others being removed carefully later on for a succession and planted direct to the open in good soil. It is in the transplanting that many people fail with their early Cauliflowers, especially those wintered in frames. The plants may be perfectly healthy and just the right size for planting out, but if the soil does not adhere to the roots the check received will cause the plants to button instead of forming close compact heads. I always take the precaution, whether in the autumn or with those sown at the turn of the year in warmth, to only use material for pricking out the plants into that will hold well together. Of course when the plants are potted it does not matter so much, although with these the more holding the nature of the soil, the more likely are they to succeed. A layer of rotten manure to the depth of 2 inches should be first spread over a level and firm ash surface, and on to this the same depth of loam chopped up with a spade. A little leaf-soil may be added, but nothing else. Old potting soil as often recommended is the worst possible for pricking out Cauliflower plants, as it will not hold together when the plants are lifted.

It will be another month or two before it will be safe to plant Cauliflower plants into the open. Those sown in the autumn, at least as regards varieties, differ somewhat from those recom-

mended to be sown now. For autumn sowing, Early London, Early Dwarf Erfurt, Large Asiatic, and Walcheren are good and useful kinds to form a succession from the same sowing, and which by a little judicious management in planting prove most valuable. At the turn of the year a good selection of Early Dwarf Forcing or Snowball forms the first crop, that is, with no autumn plants to fall back upon. A good succession variety will be found in the invaluable old Walcheren or Veitch's Pearl. In fact, the two latter, or one of them, should be sown to follow on the autumn sowing in all gardens where a succession of early Cauliflowers is desired. To be successful with these Cauliflowers they must be grown on without a check. For the earliest lot at any rate I favour potting the plants off into 4½-inch pots. In smaller than this they get too much cramped at the root. If they are to be pricked out into frames, see that the rooting medium is such as I have previously described. As they become established more air may be given, the lights being drawn off them on fine and mild days. With handlights at disposal, the plants for the first cutting may be set out earlier than they otherwise would be. The site selected should be either a warm south border or an open sunny spot. The soil must also be deeply worked and well manured. The plants should be turned out carefully, pressing the soil well about the ball, a watering being afterwards given to settle the soil about the roots. If no handlights are at disposal a light frame may be used, a three-light holding a nice few plants. These may be set out 15 inches apart. After a time, when fine warm weather arrives, the frame may be lifted off. The plants which are to form a succession must be set out in the open. The plot being ready for the reception of the plants, deep drills should be cut out into which to set the plants, this being preferable to planting on the level. Plants that have been pricked out into frames, whether from autumn or present season sowing, should in the first place receive a thorough watering, each plant being cut out with a sharp and flat trowel right down to the level surface. The plants should be placed carefully in a shallow box as they are lifted and carried direct to the plot for planting. Plant carefully and firmly, taking care not to break the ball or disturb the roots more than can possibly be helped. After planting give a careful watering, and if the weather should be drying, a flower-pot placed over each plant for a day or two will assist them in becoming quickly established. A stirring occasionally with a hoe is a good help to free growth. The benefit of the drills will now be seen, as if the weather should prove dry a soaking of liquid may be poured along the drill with the certainty of its reaching the roots. An application just as the heads are forming will carry them through well, and at this time the soil should be drawn in about the stems to conserve the moisture.

A. YOUNG.

Early vegetables.—In some parts of the country the severe weather will have played havoc with the Cauliflowers. This loss may readily be repaired by sowing in a frame an early Cauliflower of the Snowball or early forcing section. Cabbages sown thinly on a mild hotbed will give plants ready to put out, and thus form a succession to the autumn sown, or in case of loss of the last named, by sowing a small early kind, that loss will be less felt if the plants when in the rough leaf are again pricked off on a warm bed of leaves or litter and sheltered from cold winds and severe weather. A few early sprouts are always useful, and now is

the time to sow a few to come in if desired early. Onions may likewise be sown for a few large bulbs for special purposes. Lettuce is often specially required early in the season, and when raised in a frame is much better able to resist cold than when sown in stronger heat. If a number of Autumn Giant Cauliflowers is required, the first lot may with advantage be raised under glass and treated as advised above. When leaves or leaves and litter are the heating agency, care should be taken to have the fermenting material well incorporated. Free ventilation in fine weather is also essential when the seedlings are above ground, covering the glass at night to retain the warmth. Sowing thinly, airing carefully, and frequently dusting the seedlings with dry wood ashes will check the spread of mildew and other diseases.—G. WYTHES.

SPRING SALADING.

ALL the while Endive keeps good, the principal ingredient in a mixed salad is not wanting. Directly it fails there is in very many cases a blank, as far as a presentable salad is concerned, till the earliest Lettuce can be cut in the open. Now it is earlier in the spring when salads are most needed in many establishments, this being especially the case where the family is in town. Fourteen or fifteen years ago this difficulty, as regards a scarcity of good Lettuce, was not easily surmounted, though even in those days something could have been done in the way of sowing Lettuce seed rather thinly in pans and cutting the plants over when 4 inches high or thereabouts. With the introduction first of the Early Paris Market Cabbage Lettuce, and some time since of Veitch's Golden Queen, forcing Lettuce has become a comparatively easy matter. It is now possible to cut excellent hearts of either of these superior varieties in from eight weeks to ten weeks of the date of sowing, and that, too, without much trouble being taken in the matter. One sowing of seed should be made in December or early in January thinly in a pan or box, and this being placed on a shelf or light stage in gentle heat, sturdy little plants would be, or, at any rate, they are in my case, available for pricking out where they are to grow by the first week in February. About the latter date rather more seed should be sown thinly and placed in gentle heat only, the aim being to have abundance of sturdy little plants that will not require any further preparation in the way of pricking out for either frames or sheltered borders. For the earliest raised batch a mild hotbed ought to be formed either in a pit (if heated so much the better), or in a warm position and surmounted by a frame. My plan is to utilise both pits and frames at about the same time, the Lettuce grown in the latter affording a close succession to those obtained in a heated pit. The hotbed, as before stated, must be mild and should be surfaced over, on this being placed a layer of the shortest or more decayed portion of manure used, 6 inches of good loamy soil on the top of this being then ample. The aim should be in all cases to raise the bed well up to the light, though good Lettuce can be grown on the floor of a light house, that is to say, well away from the glass. Directly the soil is warmed through and before the plants much exceed a height of 2 inches, pick out as many as there are room for about 6 inches apart each way. Give a gentle watering, keep rather close, unheated frames being matted over every night till the plants are growing strongly, when more air must be given, the forcing being gentle, as with vegetables generally in frames, or otherwise there will be a number of great flabby leaves and but poor hearts. Keep them uniformly moist at the roots, and when they begin to press rather hard against each other, commence cutting for use. Every other plant only should be cut cleanly out, the rest being left to attain their full size, and remarkably fine, close, tender and well-blanching hearts will thus be had. If there are any surplus plants from the first sowing, take the first favourable opportunity of pricking these out either into handlights or on raised beds at the foot of sunny

walls, protecting them roughly for a time. They will pay well for the trouble taken with them, and last spring some that were planted early on a sheltered border and not protected in any way hearted in more quickly than did plants of other varieties that had survived the winter. The later-raised plants may be pricked out in frames among early Peas, in frames in succession to Radishes or other extra early crops, cold frames, and in the open, abundance of Lettuces, superior in quality probably to anything grown during the rest of the season, being the result. Both varieties named succeed well grown thinly in boxes of rich loamy soil under glass, but if wanted in quantity, these puny efforts are unsatisfactory.

Mustard and Cress ought also to play an important part in the formation of a spring salad. Strange to say, private gardeners as a rule are not very successful in growing these small salads to perfection, or, say, to equal in quality and appearance those seen in Covent Garden Market. Sufficient importance is not attached to the necessity of having both Mustard and Cress with long well-blanching stems. More often than not the stems are quite green and very short, this being largely owing to their being grown from the first in full daylight. Another even greater mistake is that of using the same soil for a second sowing. The boxes ought to be emptied of the stale soil and refilled with rather rich fresh compost, old Mushroom-bed manure answering well, and there would then be no complaint of feeble growth or wholesale damping off. The two kinds should be sown in separate boxes. Mustard or Rape, for that is largely sown as a substitute, is the first fit for use and the soonest past fitness. Sow this thickly on the surface of the previously well-moistened soil and press the seed well into it, the Cress being merely sown rather more thickly on perfectly smooth moist soil. Place in gentle heat well away from the hot-water pipes, and shade heavily with either brown paper or mats, keeping this well clear of the soil. No water ought to be needed nor the shading removed before the salading is about 1½ ins. long, after which gradually expose to the light and give less heat. In this manner only can Mustard and Cress be had with stems long and well blanching, perfectly clean, tender, and mild in flavour. It ought to be cut over with a sharp knife and used quickly, a fresh sowing being made every four or five days.

Young Onions are required in some instances for flavouring salads and also for serving whole. For this purpose the White Lisbon or one of the quick-growing white Italian varieties is to be preferred, and seed should be sown in boxes of rich soil two or three times during the first three months in the year. Placed in a newly-started Peach house or vinery the seed will not be long in germinating, and if the plants are kept not far from the glass, but still in gentle heat, tender young Onions will be ready for use till those first raised in the open are available. A few Tarragon shoots are always appreciated, and these can soon be had by lifting enough flakes of roots to fill one or two ordinary bedding plant boxes, gentle forcing being resorted to. It is not often that Radishes are included in mixed salads, but they are in great demand for the breakfast-table. They ought to be quickly grown and quite young when eaten, or otherwise they are unwholesome and indigestible. The small forcing Turnip varieties are the quickest to attain a serviceable size, and with these may well be grown the French Breakfast or one of the other very pretty, crisp, and sweet Olive-shaped forms, while if larger, longer roots are desired, Wood's Frame best meets the case. The only way of keeping up a constant supply of tender young roots is to sow seed on a mild hotbed about every ten days, a single light at a time being enough in most cases. If need be they may be sown midway between rows of Horn Carrots, these last not being less than 8 inches apart, or if preferred both kinds may be sown broadcast and the seed covered with sifted soil. It is a great mistake to sow Radish seed so thickly as to necessitate much thinning out of the plants. If sown broadcast let the seeds go about 2 inches apart

each way. Nearly or quite all will germinate in heat, and if the soil is kept uniformly moist and enough light and air admitted to keep them sturdy, the roots will swell quickly without much further trouble being taken. M. H.

ROSE GARDEN.

YELLOW ROSES.

If there is one colour among Roses more popular than another it is the deep golden yellow found in such varieties as Maréchal Niel, Perle des Jardins, Harrisoni, and others. Rosa Harrisoni here figured, one of the Austrian Briers, was introduced from America by Mr. Harrison in 1830, and is still one of our most popular yellow Roses for garden decoration. As shown in the engraving, it is far more double and globular than the Persian Yellow, another very old favourite introduced in 1838.

HARRISONI is a beautiful golden yellow, but the growth is not so vigorous nor the flowers so deep

particularly free and hardy. Among other small yellow Roses we must not omit the

YELLOW BANKSIAN. I am acquainted with more than one garden where Banksian Roses grow well, but do not flower satisfactorily because they are injudiciously pruned. The Banksians flower early, and all the necessary pruning should be done at midsummer or soon after. Long shoots that have flowered should be entirely cut out, thus letting the air and light into the remaining growth and assisting its maturation during the autumn months. These Roses grow very late, and are much more tender than many; hence the need of getting the growth as early as possible, and a dry border to encourage early ripening. In the spring the only necessary pruning will be the removal of frost-bitten wood.

FORTUNE'S YELLOW (syn., Beauty of Glazenwood) is another beautiful semi-double variety that deserves much more extensive cultivation. It is said to have been discovered by Robert Fortune in a rich mandarin's garden at Ningpo, and was introduced to this country by him in 1845. Like the Banksians, it does best in a warm and rather dry situation, and, like them, requires careful summer pruning. It is only semi-double and

During recent years many grand additions have been made to this colour, one of the most popular being

WILLIAM ALLEN RICHARDSON, which was sent out by Ducher in 1878. For some time it was not much grown, having probably shown its uncertain growth. It is a peculiar feature in this grand Rose that one plant may do well, and another in the same position and apparently under similar conditions will be far from satisfactory, growing scarcely at all. This same peculiarity is often found in Maréchal Niel, but not quite so frequently. It requires the same treatment as Maréchal Niel, viz., little or no pruning of the wood made the previous season. Its colour is difficult to describe and varies very much. Golden yellow, orange-yellow, yolk-of-egg yellow are all found; sometimes a bloom will be produced with only one of these colours, at other times two, or all three may be found in charming confusion, while it is not uncommon to find a flower pure white. As a general rule they are golden orange with a lighter edge. Small, perfect in shape while young, and a good Rose to last, this variety is undoubtedly one of the best climbers for a south wall or under glass. In the latter position I have secured from 500 to

700 blooms from a single plant, and have found it equally as certain as well-grown specimens of Maréchal Niel. Mme. Carnot, a seedling from W. A. Richardson, is somewhat similar, and also a grand variety.

L'IDEAL, of similar habit, is one of the most distinct and attractive Roses we have. Not very full, but of good shape when young; it is decidedly one of the six sweetest-scented Roses grown. Its colour is also very variable, being metallic-red and yellow, splashed and tinted with a golden and coppery yellow.

DUCHESS D'AUERSTADT.—The flowers of this are pure yellow when young, but partake of a nankeen shade as they open. They are large and full, but not of so good shape as those of Henriette de Beauveau, a bright clear yellow, very free blooming and sweet-scented.

BELLE LYONNAISE is a pure canary-yellow of the Gloire de Dijon type, but not quite so hardy.

REVE D'OR is a typical yellow Rose, almost evergreen, and of extraordinary vigour.

MME. FALCOT is too well known to need more said of it than that from 1859 to the present time it has been the best of its colour.

ISABELLA SPRUNT, a fixed sport from Safrano, is a pure canary-yellow of hardy constitution, very free, and a good button-hole Rose.

JEAN PERNET, a sport from Devoniensis, is also exceedingly pretty, but, like its foster parent, it is not sufficiently reliable. Perhaps the best pure yellow Rose among the dwarfer growing Teas and Noisettes is

MARIE VAN HOUTTE. Some of my readers may question my designation of this grand variety as a pure yellow on account of its being frequently tinged with deep rose, especially towards the edges of its petals. But these are merely sun tints, and may be found more or less in many other varieties—Niphetos, for example. Marie van Houtte is a most excellent grower, hardy, and certain to produce several crops of good flowers during each season.

SUNSET is of a different shade, having a deeper yellow for ground, with an apricot-coloured centre. It is a grand autumnal Rose.

MME. HOSTE is a pale yellow of great purity. The blooms are well built up and of great substance and size.

The title "yellow Roses" gives us rather a wide scope among these flowers, but I have endeavoured to keep within bounds, even by



Rose Harrison's Yellow. Engraved for THE GARDEN from a photograph sent by Mr. J. McWalters, Armagh.

in colour as in the case of the Persian Yellow. I have more than once known the two varieties confused, but when seen together they are quite distinct. These two varieties are amongst the earliest flowering Roses we have, and I have a vivid recollection of how grand they were in this neighbourhood last spring. They are good growers, hardy, and almost certain bloomers. The chief point is to thin out all weakly growths, and so encourage the more vigorous shoots. If these are bent down slightly they will almost invariably bloom throughout their whole length. By bending them down slightly after pruning a more even break of the flowering eyes is secured. In pruning it is only necessary to thin out the weak shoots and remove the tips of strong and well-ripened growths. Weak growth is of little value upon the Austrian Briers. In the same class we have two single yellow Roses,

THE AUSTRIAN YELLOW and the **AUSTRIAN COPPER**. Both are good, the latter being one of the most superb single Roses grown. It is of vigorous growth, and possesses deep tints of bright copper, terra-cotta and metallic-red. Once seen in their full beauty and freshness these blooms are seldom forgotten. We also have the

YELLOW SCOTCH ROSES, which, although pale and very small, are almost perfect in shape and

varies much in its colour, sometimes being a pure orange-yellow, and at others striped and flaked with carmine in very uncertain quantities. The yellow Abyssinian Rose Eca is also very pretty. This was introduced by Messrs. W. Paul and Son about 1883; it is small and very pale yellow in colour.

CLOTH OF GOLD (or Chromatella) was sent out in 1843, and was somewhat extensively grown until eclipsed by Maréchal Niel. It is a very vigorous grower, and too tender to thrive satisfactorily unless on a warm and very sheltered wall. The blooms are large, double, perfect in form, and of a deep sulphur-yellow with darker centre, but unfortunately it is a difficult variety to grow on account of its extreme tenderness. I have only once been fortunate enough to see it growing well, and that was in a Rose garden completely sheltered by specimen shrubs. Being so tender, it rarely starts well into growth until too late in the season for its vigorous shoots to get matured. It was a seedling from Lamarque, and Nabonnand has succeeded in getting a seedling from Chromatella which much resembles the parent, and is supposed to be hardier; he has named it Comtesse de Beaumetz, but it still remains to be proved, and I doubt if it will ever become so popular as Maréchal Niel. The above, with Solfaterre, Ophirie, and Celine Forestier, are the best of our old yellow Roses.

omitting such grand varieties as Comtesse de Nadaillac, Anna Ollivier, Jean Ducher, Princess of Wales, Francisca Kruger, Gloire de Dijon, Kaiserin Friedrich, Bouquet d'Or, Mme. Berard, &c., all of which might justly be styled yellows of different shades.

RIDGEWOOD.

Rose William Allen Richardson.—In fairly sheltered situations this Rose does exceedingly well as a standard in the west of England, but whether it would be hardy enough for growing in that form in a colder climate I do not know. As a standard it certainly is an attractive Rose, especially in the autumn, when the examples I am acquainted with produce more flowers than in the early part of the season.—J. C. C.

Roses and the late weather.—We have been having a very trying time for Roses of late, often over 20° of frost and not sufficient snow to afford them any protection. Varieties that are not particularly hardy have been frost-bitten rather severely, and I find much of the pith is brown and dead. Standards have come through the ordeal rather better than I anticipated from the condition I found several dwarfs in. Much of this is no doubt owing to the more judicious selection of varieties now grown as standards. These should always consist of strong or free growers and with hardy constitution. Formerly many weak growers were cultivated in this form in preference to dwarfs, because they otherwise had such an insignificant appearance. The folly of this has been amply proved, weak growers not being suitable for cultivating in standard form, as they have not strength and vigour enough to draw sufficient sap through the Brier stem to maintain themselves. In some few cases autumn-planted Roses may have a blank or two among them. They should be looked over, and such gaps filled during the present month, weather permitting. I believe it is much best to plant Roses in the autumn or early spring. On no account would I plant in December or January. The frost in this district (mid-Sussex) is barely out of the ground, and for a long time many of our Roses were either surrounded with freezing water or ice from 1 inch to 3 inches up their stems. A rapid thaw and rain set in during the day, and as the soil was so frozen beneath, the wet could not soak away. This froze again at night, from slight surface frost combined with the mass of frozen soil beneath. Few things are calculated to do more harm than this, and I am gratified to find my Roses looking so well. True, it is early to decide how far they have been injured.—R.

THE BEST ROSES OF 1861 TO 1881.

In a recent article I mentioned the best Roses of the last decade, those which I believe are held in the greatest estimation for exhibition purposes; and I think when I say they are the best for that purpose, a grower who has no desire to become an exhibitor may without much risk of disappointment also plant them for ordinary garden use, the only absolutely essential requisites being careful planting in the most suitable positions available and the winter protection of the more delicate varieties of the Tea class, the latter precaution being necessary unless a garden be situated to very exceptional advantage, which is of rare occurrence. I now mention the best Roses produced from 1861 to 1881 inclusive, those which are still considered of high merit for exhibition, and I only mention the best Roses because it is useless to recommend or repeat the names of many kinds which practical rosarians have long since discarded as being of slight value, or which in many cases have been superseded by better varieties introduced in recent years, and I also make a few remarks which may be of use to Rose tyros:—

HYBRID PERPETUAL ROSES.

Name	Introduced by	Date	Remarks
Abel Carrière	Verdier	1875 .	A difficult Rose to grow; a good dark red.
Alfred Colomb	Lacharme	1865 .	A variable, but good Rose; rather too like Marie Baumann.
Alfred K. Williams . . .	Schwartz	1877 .	Shares with Charles Lefebvre the supremacy in dark reds.
Annie Wood	Verdier	1866 .	Not always satisfactory.
Baroness Rothschild . . .	Pernet	1869 .	A very beautiful, but scentless pink Rose; indispensable in a good collection.
Beauty of Waltham	W. Paul	1862 .	A good grower and still useful.
Captain Christy	Lacharme	1873 .	One of the most tantalising Roses—sometimes beautiful.
Charles Lefebvre	Lacharme	1861 .	Has never yet been surpassed.
Comte de Raimbaud	Roland	1867 .	A very fine dark Rose and a good grower.
Countess of Oxford	Guillot	1869 .	A good, but variable Rose.
Duchess of Bedford	Portans	1879 .	A very difficult Rose to grow; beautiful colour.
Duke of Edinburgh	Paul and Son . . .	1868 .	Still maintains its high position; best as an autumnal H.P.
Duke of Teck	Paul and Son . . .	1880 .	Also a very good Rose; very bright colour.
Dupuy Jamain	Jamain	1868 .	Very fine Rose; won the N.R.S. medal at Crystal Palace, 1892.
Eclair	Lacharme	1883 .	Very fine, dark red, but very difficult to grow.
Etienne Levet	Levet	1881 .	Not always easy to grow successfully.
Eugène Furst	Souper	1875 .	A good grower and a handsome dark red Rose.
Fisher Holmes	Verdier	1865 .	A good Rose on heavy land.
François Michelin	Levet	1871 .	Very large, rose-coloured.
Horace Vernet	Guillot	1866 .	A splendid red Rose, in form exquisite, but not easy to grow.
La France	Guillot	1867 .	One of Guillot's greatest triumphs, and second to none in sweetness and form.
Lord Macaulay	W. Paul	1863 .	Still considered a valuable dark velvet Rose.
Louis van Houtte	Lacharme	1869 .	Is not to be depended on, but is worth growing.
Mme. Gabriel Luizet	Liabaud	1877 .	Shares with La France the premier position for scent, and is of an exquisite shade of pink.
Mme. Isaac Perrier	Margottin	1880 .	A very strong grower and very useful.
Mme. Montet	Liabaud	1880 .	Exquisite in colour and scent; deserves to be better known, and is well worth growing.
Marie Baumann	Baumann	1863 .	A universal favourite, beautiful colour, large, and sweet-scented.
Marie Finger	Raimbaud	1873 .	A good Rose, rather like Pride of Waltham.
Mrs. Jowitt	Cranston	1880 .	Difficult to grow well, but has a magnificent flower.
Paul Neron	Levet	1869 .	A giant amongst flowers; grows well.
Pride of Waltham	Wm. Paul	1881 .	A good Rose, and worth growing.
Prince Arthur	Benj. Cant	1875 .	A good dark Rose.
Prince Camille de Rohan . .	Verdier	1860 .	Still maintains its position as one of the very best dark velvet Roses.
Sultan of Zanzibar	Paul and Son . . .	1876 .	A good dark Rose, but not easy to grow well.
Susanne M. Rodocanelli . .	Verdier	1880 .	A most beautiful Rose of a brilliant colour; it, unfortunately, lacks the quality of scent.
Ulrich Brunner	Levet	1881 .	When first introduced considered perfection; not now so highly thought of, as it is a coarse Rose.
Xavier Olibo	Lacharme	1864 .	Still stands in the front rank of dark red Roses.

TEA ROSES.

Anna Ollivier	Ducher	1872 .	One of the best Tea Roses, and hardy.
Catherine Mermet	Guillot	1869 .	Is unsurpassed under glass, but although of a most exquisite colour and form, not easy to get of first-rate size out of doors.
Comtesse de Nadaillac . . .	Guillot	1871 .	No Rose surpasses this one in its lovely tints of yellow tinged with copper, and its form is perfection.
Comtesse Panisse	Nabonnand	1877 .	Of good form and of a flesh colour tinged with copper. I have grown this Rose for fourteen years; it is only useful in a very warm dry season.
Etoile de Lyon	Guillot	1881 .	Only useful when grown under protection.
Francisca Kruger	Nabonnand	1879 .	A deep yellow; a good Rose in warm seasons.
Innocente Pirella	Ducher	1878 .	In my opinion the most beautiful of the cream-coloured Tea Roses, of exquisite form and a good bloomer.
Jean Ducher	Ducher	1874 .	Absolutely useless unless grown in a warm situation and protected from damp weather.
Mme. Cusin	Guillot	1881 .	A beautiful Rose, somewhat similar to Mme. de Watteville in colouring; has become very popular in recent years.
Mme. Lambard	Lacharme	1877 .	When of good form not easily surpassed. It is very remarkable for the numerous shades of colour its blooms assume.
Marie van Houtte	Ducher	1871 .	One of the most popular of the Teas and a very beautiful variety. A very hardy Tea Rose.
Perle des Jardins	Levet	1874 .	Not to be recommended for general use, as it is not always successful in the open.
Souvenir de Paul Neron . . .	Levet	1871 .	A good Rose and flowers freely; not always large enough for exhibition purposes.

NOISETTE ROSES.

Bouquet d'Or	Ducher	1872 .	A great improvement on its parent, Gloire de Dijon; one of the hardiest of all Roses.
Caroline Kuster	Pernet	1872 .	A very beautiful light canary colour; does well with some rosarians. Our champion amateur grows and exhibits it especially well.
Maréchal Niel	Pradel	1864 .	The finest yellow Rose which has ever been produced, but it is one of the varieties which require either a south wall or the protection of glass.

By a comparison of the preceding varieties with those named in my article on the "Roses of the last decade," published in your issue of December 10, 1892, it is evident that almost every good Rose which is now frequently seen at our great Rose exhibitions has been produced in the last three decades. In the foregoing list it will be noted that the French rosarians up to 1881 were very markedly in advance of ours in the extent and superiority of their productions, but, as I have also shown by analysis on other occasions, our own rosarians since the year 1882 inclusive have made the most remarkable strides in the hybridisation and production of Roses. If the changes in the next quarter of a century be of the same marked character as they have been in a similar period in the past, we may expect with our present experience and progress to find that England by that time will be the true country of her national flower, and then we shall look to our own hybridisers alone for all our requirements in its cultivation.

Croydon.

C. J. GRAHAME.

ORCHIDS.

ORCHIDS AT BURFORD LODGE.

THE display of Dendrobiums here just now is marvellous, one side of a large house being full of flowering plants. Noticeable were *D. nobile* in various forms, crassinode, the rare crassinode album, Wardianum, and the fine species called primulinum. Amongst the hybrid forms there were fine varieties of *D. Ainsworthi*, *Ainsworthi roseum*, and *splendidissimum*. The Burford hybrids were numerous and very beautiful; amongst them especially noticeable is burfordiense. I have seen this likened to a bad nobile, but there is nothing like nobile about it, whilst it is a very free bloomer. The sepals and petals are white, flushed with rosy pink at the tips, and the apex of the lip is also of the same colour. This, a specially noticeable plant, has for its parents *D. heterocarpum* and *D. Linawianum*, but the others, I believe, are all from *D. Findleyanum*. From these I have selected the following half-dozen kinds: In the form called pallens the flower is of a pure white, the tips of all the organs being marked with a faint tinge of lilac-mauve, and at the base of the lip just a suspicion of lemon-yellow. The plant is very free flowering. In striking contrast to this stands a plant with larger flowers, the colours being very marked. The sepals and petals are white, tipped with rosy purple; the lip is white, having its tip also bright rosy purple with a large blotch of deep maroon-crimson, which is bordered with tawny yellow, into which the crimson runs in short streaks. It is a charming flower. *D. chrysodiscus* is another beautiful flower, but smaller than that of the previously named kind; the sepals and petals white, flushed towards the upper part with tinge of lilac; the lip white, slightly tipped with lilac, the base having a blotch of rich yellow on which there is a small blotch of deep maroon-crimson. *D. melanodiscus* is a very striking flower, white, the points of the segments faintly flushed with a rosy tinge, the lip ornamented with a large blotch of blackish purple, which has short radiating lines running out upon a faint sulphur-coloured zone. *D. xanthocentrum* has the segments white, distinctly tipped with rosy lilac; the white lip has a coloured tip and a distinct blotch of golden yellow, with a small dark blotch at the base. Besides these I noted the beautifully coloured *D. nobile Cooksoni*, the charming *D. Cassiope*, the curious *D. nobile Tollyanum*, good plants of the old *D. Pierardi*, the small green-flowered *D. O'Brieni*, and the pretty *D. micans*. These plants have

grown well, as is shown by the size of the pseudobulbs, and each and all of them are flowering most profusely. This speaks well for their potting and treatment, which Mr. White tells me has been somewhat different from that usually carried out. For instance, the plants are not potted in peat, none of this material being used. They are potted wholly in Sphagnum Moss, into which the plants have rooted well. In the matter of water, Mr. White says he considers about twice in the week is quite often enough to look over the plants in the summer-time and once in the winter. The plants, if found to be dry, should have a good soaking. Of course, if at any time a plant may be noticed that is dry, water should at once be given it.

Amongst Cattleyas, I noted that *C. Percivaliana* was still in bloom, several fine forms being still in evidence. Several flowers of *C. Trianae* were opening, whilst the pure white *Trianae alba* had several blooms open; *Laelia harpophylla* was just opening its brilliantly coloured flowers, and *Laelia anceps Veitchi* was just past. These white forms of *L. anceps*, Mr. White tells me, have been very good this season. *Cypripediums* are a very great feature in this collection, and here I saw in flower the fine form of *C. Morganiae*, which was raised by Mr. Spyers and named burfordiense, a heavily spotted and a highly-coloured form of this grand variety; *C. leucorrhodum* was also grand. *C. Elliottianum* and *C. Rothschildianum* were both promising well. A seedling, a cross between *C. niveum* and *C. superbiens*, having something of the colour of *C. Marshallianum*, but yet distinct and beautiful, was also in flower. *C. Stonei platytænium* is growing robustly, and I hope to see it blooming shortly. The Masdevallias were looking remarkably well. Some few are now flowering, the chief being good plants of *M. ignea*, which is always bright and cheerful; *M. Hincksi*, whose flowers change colour as they age; the giant *M. macrura* and *M. Heathi*, which appears something like *M. Veitchi*, but lacking the beautiful shading of purple which is so conspicuous in that species. Other Orchids in flower were *Angræcum eburneum*, *A. pellucidum*, the latter with flowers of a creamy yellow, not of the translucent white which I have usually seen in this species; *Ansellia lutea*, *Vanda tricolor* in different coloured varieties, the fine form of *Ada aurantiaca*, the small, but beautiful *Oncidium Phalenopsis*, and *Cymbidium Lowianum*; the fragrant *Maxillaria Lehmanni*, which comes very near to *M. grandiflora*; the leaves, however, appear to be narrower and the flowers larger, the sepals and petals pure white, the pouch-like lip stained and veined on the outside with rich chocolate-brown, the front lobe being pale yellow. The curious *Pleurothallis Roezli*, a remarkable species of this genus, having a long raceme, which bears numerous pendent flowers of a very deep claret colour, having a large, hairy, tongue-like lip, was also in bloom.

WM. HUGH GOWER.

Orchids from Cheltenham.—From Mr. Cypher comes a nice gathering of Orchids, including a very highly-coloured *Dendrobium nobile nobiliss.* It is truly a noble form of this fine plant. Next comes a flower of the pure white *Lycaste Skinneri alba*, which I recognise as being exactly like the form I flowered in the collection of Messrs. Jackson at Kingston in 1856, but it is not the best variety I have seen. It measures 6 inches across, but the sepals are somewhat narrow, and hence the flower appears starry. *Oncidium Cavendishianum* is a plant which is not seen so frequently as it deserves; the flowers are very showy, the lip being rich yellow, the sepals and petals

greenish yellow spotted with crimson; the spike grows from 2 feet to 3 feet in height, and bears numerous fragrant flowers. It is nearly sixty years since it was first found by Mr. Skinner. Among the forms of *Zygopetalum* which come to hand the most notable are *Z. crinitum* and *Z. rostratum*. The latter Mr. Cypher tells me has been blooming for the last three months. *Oncidium Phalenopsis* is always a charming flower, as also is *Odontoglossum blandum*, especially such a fine spike which is branched and bears twenty-two of its very highly fragrant flowers. The flowers sent for *Laelia acuminata alba* are not the variety alba, but the typical plant, and its right name is *L. rubescens*, the sepals and petals of which are white, the lip also stained with creamy yellow in front, and with a deep rose-coloured blotch at the base. In the variety alba this blotch of colour is entirely wanting. The *Cattleya chocoensis* is a fine form with the flowers more expanded than usual, the sepals and petals pure white, the lip having a broad blotch of magenta in front, and the throat marked with orange. Some grand flowers of *Dendrobium Leechianum* make up the lot; this very fine hybrid approaches splendidissimum, but it is rather narrower in its sepals and petals, which are white tipped with rosy mauve, and a large rich purple blotch on the lip.—W. G.

NEW ORCHIDS CERTIFICATED IN 1892.

DURING the past year there has been no lack of Orchids to which either a first class certificate or an award of merit was given. Although the *Cypripediums* of hybrid origin have been perhaps the most plentiful, I think they must for once yield the pride of place as regards distinctive merit to the splendid *Cattleya* or *Laelio-Cattleya* hybrids shown from time to time, and for which Orchid lovers are greatly indebted to the firm of Messrs. Veitch and Sons, who are still pre-eminent in the raising of hybrids of all kinds of Orchids to which they have turned their attention for this purpose.

In January were shown *Laelio-Cattleya Cassiope* (*C. exoniensis* × *L. pumila*), a grand hybrid of compact growth, the flower large in proportion thereto, and of a rosy crimson colour; *Epidendrum Endresio-Wallisi*, its origin denoted by its name, which was shown again at the recent meeting; *Laelia purpurea* (Lucas's var.), a fine form of this species, deeper also in colour; *L. anceps Ballantianiana*, a grand variety, the lip particularly fine; *Cypripedium Calypso* (*Spicerianum* × *Boxalli*), a very fine cross of vigorous habit and splendid flowers; *C. gigas* (Lawrenceanum × *Harrisianum*), the dorsal sepal of which is remarkably fine; *C. enfieldiense* (Hookeræ × *Lawrenceanum*), another distinct hybrid with richly coloured flowers; *Odontoglossum Rossi albens*, a pale form of a well-known Orchid.

In February the following were shown: *Odontoglossum crispum nobiliss.*, a grand form of this lovely species, one of the finest yet seen; *O. Pescatorei Schroederianum*, a richly marked form, very distinct; *Cypripedium Juno* (*Fairrianum* × *callosum*), an extra dark hybrid, and an acquisition in its colour; *Zygopetalum leucochilum* (*Burkei* × *Mackayi*), a superior and distinctly marked hybrid, the lip very fine; *Cypripedium Hera* (*Boxalli* × *Leeanum*), as distinct a cross as could well be obtained, having the good properties of both parents; *Lycaste Youngi*, flowers of medium size, rich golden yellow in colour; *Odontoglossum Ioplocon*, the flowers small and of a dark purple shade; *Cypripedium Ceres* (*hirsutissimum* × *Spicerianum*), a dark and vigorous hybrid; *Dendrobium Cassiope* (*japonicum* × *nobile albiflorum*), a lovely hybrid with pure white flowers, save a claret-coloured blotch on the lip; *Cypripedium insigne* (Cambridge Lodge var.), a distinct form; *Dendrobium splendidissimum Leeannum*, a superior variety of a good Orchid.

In March the following varieties all require notice: *Odontoglossum Pescatorei* (Jackson's var.), a very richly coloured dark variety; *Cypripedium Ianthæ*, a very distinct hybrid, appearing to have an affinity with *C. barbatum*; *C. Brysa* (*Sedeni*

candidulum × Boissierianum), which is a marked acquisition to its class; *Dendrobium Phalænopsis Schröderianum* (Shipley Hall var.), a decidedly fine form of this, a most variable Orchid, the colouring very rich indeed. Another and quite a pale variety was also shown at the same time and from the same source called *delicatum*. *Moorea irrorata* (Rolle), a very novel and distinct Orchid, not unlike a *Peristeria* in form; *Dendrobium infundibulum* (Cassio Bridge var.), a superior form, otherwise not differing from the species, were also shown.

During April the following were shown: *Cypripedium Chamberlainianum*, a very remarkable and distinct species, which created a deal of interest amongst Orchid growers present; it is now so well known as to need no further comment, save to say that by the frequency of its appearance later in the season it appears to be a free-flowering kind; *C. Lawrebel* (*Lawreceanum* × *bellatulum*), a singular and very distinct cross between two species far removed from each other, the colour of the spots of the last-named parent suffusing the entire flower, thus making it darker even than in the other parent; *Dendrobium Euryclea* (*Wardianum* × *litiflorum*), a choice and very distinct hybrid of rich colour, fine in size and form, being a decided acquisition; *Odontoglossum Pescatorei* (Linden's var.), a very vigorous variety, bearing some appearance to *O. crispum* in size and form, but with the markings of its type; *Cypripedium Swinburnianum*, a very dark variety of distinct appearance, probably an imported species; *Lælio-Cattleya Marriottiana* (*C. Skinneri* × *L. flava*), a hybrid with the habit of the latter and more of the features of the former parent in the flowers; *Cattleya Burberryana* (*imbricata* × *superba*), a choice and beautiful hybrid, pale pink in colour, with the form of *C. superba*; *Odontoglossum Wendlandianum*, after the style of *O. Andersonianum*; *Odontoglossum Owenianum*, a very distinct *Odontoglossum* in its markings, paler in colour than some, but beautiful; *Oncidium Gravesianum*, which comes near to *Oncidium crispum* in its habit and in the colour of its flowers, but is, nevertheless, quite distinct from it; *Cattleya Philo* (*iricolor* × *Mossiae*), a choice hybrid, intermediate between the two species, having the form of the first named with the colour of the latter parent; *Cypripedium Exul*, also shown as *C. insigne siamense*, which would probably still have been its better name, as denoting its relation to that species.

In May there were a considerable number of exhibits as follows: *Cattleya Victoria Regina*, a remarkably fine imported species, of vigorous growth and great freedom of flowering, as denoted by the old bulbs, the colour a rosy pink suffused with violet, the lip much darker renders it a very distinct variety; *Lælio-Cattleya Phoebe* (*C. Mossiae* × *L. cinnabarina*), a lovely hybrid, coming very near to, if not identical with *L. Hippolyta* (Veitch), the colour a rich apricot, partaking greatly of its *Lælia* parentage in this respect; *Lælia Latona* (*L. purpurata* × *L. cinnabarina*)—this handsome hybrid has an even deeper shade of apricot than the foregoing. These two singularly attractive hybrids were quite the features of this meeting, causing an immense amount of attention to be bestowed upon them. *Cattleya Philo* var. *albiflora*, a pale, but lovely form of a hybrid just previously noticed; *Cattleya Mendeli* (Quorndon House var.), an almost pure white, is very chaste and beautiful. In the same month at the Temple show the following were the certificated varieties: *Phaius Sanderianus*, as vigorous as *P. grandiflorus*, with even larger flowers, very distinct in its colouring, especially in the lip, which is mostly white, whilst the rest of the flower is brown; *Odontoglossum crispum Sanderæ*, a very fine form, rosy crimson in its shading, a choice variety; *O. Bleui splendissimum* (*vexillarium* × *Rozei*), the flowers large, pure in colour, with traces of both parents, very distinct; *O. Lowryanum*, a vigorous looking variety, bearing a fine large spike; *Cypripedium southgatense*, a very dark variety with some affinity to *C. bellatulum*; *C. Vipan* (*C. lævigatum* × *C. niveum*), a beautiful hybrid between these distinct species, pure white with

veinings of a rosy purple; *Cattleya Mendeli* (Cookson's var.), very large and fine, almost approaching *C. gigas* in size, rich in colour; *C. Chamberlainianum* excellens, a lighter form; *Cymbidium Lowianum viride*, which is minus the dark crimson stripes on the lip; *Lælia purpurata Hindleyana*, a large and fine form with broad lip; *Odontoglossum Wilckeanum nobilissimum*, a pale, but lovely variety.

In June was shown *Warscewiczella Lindenii*, a singularly beautiful pure white variety. *Cypripedium Alice* (*C. Spicerianum* × *Stonei*) is a clear proof of the facility of hybridising in the Slipper family, the parents being totally dissimilar in all respects; the offspring is a handsome variety; the former parent leaves its tracing in the dorsal sepal, as might be expected, the rest of the flower tending largely towards *C. Stonei*. *Lælia grandis tenebrosa*, an extra fine variety of a grand Orchid, deeper in colour; *Odontoglossum crispum Wolstenholmiæ*, an extremely handsome light form, the spike large; and *O. crispum Rex*, another quite unique variety, very richly marked, were all remarkably fine. *Sobralia Lucasiana* is a species of very dwarf growth with pale coloured flowers, distinct. *Cattleya Empress Frederick* (*Dowiana* × *Mossiae*), as might be expected from two such parents, is a grand hybrid, probably the finest hybrid *Cattleya* yet raised; the lip deep velvety purple, the sepals and petals pure white. *Cattleya Amesiae* has extra large flowers, the lip only having a yellow blotch, the rest of the flower pure white. *Cattleya princeps*, resembling *C. granulosa*, but with more colour; *Dendrobium Souvenir d'Alec*, a pure white variety of *D. transparens*; *Cattleya Warneri marmorata*, distinct in that the sepals and petals are prettily marbled; *Oncidium lanceanum* var., a very dark form of this old variety; *Grammatophyllum Seegerianum*, which bore a strong spike, the flowers freely spotted on a light ground; *Cypripedium Telemachus* (*Lawreceanum* × *niveum*), the flowers of which incline much towards the first-named parent, the colour, however, being richer; in the growth one could see *C. niveum* tracings; *Lælia purpurata* (The Dell var.), the lip of which is of a bronzy red rather than purple, were also noteworthy.

ORCHIS.

SHORT NOTES.—ORCHIDS.

Lælia anceps Sanderiana (Mr. Rogers). This appears to be the name of your variety; it is very much in the way of *Dawsoni*, but is I think a little inferior to that plant in the richness and colour of its lip. G.

Oncidium leucochilum (T. Johnston).—This is the name of your specimen, and it is a very fine variety. The present flower, from a spike 6 feet long, has the sepals and petals greenish yellow, profusely barred with dark chocolate. The flowers last a long time in perfection. The plant thrives best in the cool house.—W.

Disa incarnata.—Messrs. W. L. Lewis and Co., of Southgate, send me a nice spike of bloom of this elegant little plant. The spike is many-flowered, the blooms being of a deep coral-red, more or less dotted with reddish crimson. This plant is a native of Madagascar, but I do not know of what particular part. The Messrs. Lewis treat it to a warm temperature.—W. H. G.

Oncidium Cavendishianum (J. Oswald).—This is a very fine variety of this plant, and having specimens from various correspondents I am enabled to compare them; the flower is rather larger than usual, and the ground colour of the sepals and petals is of a bright yellow almost as the lip. The sepals and petals are thickly spotted with crimson, whilst the lip is clear bright yellow.—W.

Bamboos at Kew.—An interesting feature in the Royal Gardens is a plantation of Bamboos in the lower part of the grounds near the Rhododendron walk, and a few types have stood the recent severe weather. The well-known *Bambusa Metake* is full of health and vigour, and represented by several fine masses. *B. Simoni* is also

uninjured, the large examples of this graceful Bamboo having been little touched by winter frosts. The heavy masses of rich green growth are remarkably effective, and in the variety *striata* we get a distinct variegation. This is a fine hardy Bamboo, and the same may be said of *B. viridis glaucescens*. A large group of this is delightful in the garden and hardy. It is one of the most elegant and pleasing of the Bamboos. *B. nigra* is very dense in growth, and seems little touched by the weather. Although less elegant than such a form as *B. viridis glaucescens*, it is a handsome kind, the leaves of a full green colour. One labelled *Phyllostachys bambusoides* has made splendid growth, the leafage pale green, spreading, and very handsome. It is apparently very hardy. A graceful Bamboo is *B. Quiloi*, compact, and forming a fine mass. Two of the most interesting kinds are *B. tessellata* (synonymous with *B. Ragamowski*) and *B. Veitchii*. Both are dwarf in growth, spreading out in a dense mass. The former has superb leaves, fully 4 inches broad and 14 inches in length, the colour full rich green. At Kew the plants form a bold group and have a telling appearance. Those who wish for a good dwarf Bamboo should make a careful note of this kind. *B. Veitchii* is of similar habit and a charming species. The leaves are broad, not so long as in *B. tessellata*, rich green with a deep creamy white margin—a distinct and bold contrast. Its variegation is not weak, as we get a rich contrast—deep green against creamy white.

GARDEN FLORA.

PLATE 896.

THE SCARLET MARIPOSA LILY.

(WITH A COLOURED PLATE OF *CALOCHORTUS KENNEDYI*.)

THE genus *Calochortus*, although a large and very important one, numbering over thirty good species and numerous varieties, has not been so popular with the growers of hardy plants as it deserves to be. So far as our experience goes, the *Mariposa* Lilies are perfectly hardy in English gardens, easily cultivated, and when well done, few hardy flowers are more beautiful or interesting. Some of the species, the *venustus* forms especially, are very richly marked. The *Calochorti* may be managed year after year by simply lifting when the stems die down, well drying off in a light airy place, and replanting in autumn. They require a light sandy soil and a sunny position, a southern exposed border for preference, as here the bulbs get ripened before lifting, and never fail to give an abundance of bloom.

The subject of our coloured illustration, *C. Kennedyi*, first described in Coulter's *Botanical Gazette*, ii., 79, and found in Kern County, California, in the spring of 1876 by W. L. Kennedy, is the most brilliant and striking of all the *Calochorti* known to us; the dazzling scarlet of the flowers suggests the iodide of mercury, and as the plant proves to be what is called a good doer, it is certain to become popular. It has proved perfectly hardy in England, the bulbs having been in the open border during the last three winters, and flowers have been produced in abundance during the summer. It grows about 18 inches high. The flowers are produced in umbels of four or five, the outer segments being pale green on the outside, with white scarious margins. The inside is brilliant scarlet-red, the inner segments also brilliant scarlet except for a purple spot just above the base, bearded with a few tufted hairs; the

* Drawn for THE GARDEN in the Royal Gardens, Kew, by Champion Jones, July 6, 1892. Lithographed and printed by Guillaume Severeys.



CALOCHORTUS KENNEDYI

anthers are dark purple. It is by far the most brilliant member of the genus we have seen, and although increasing slowly by offsets, it is likely to produce seed freely. It is figured in the *Botanical Magazine*, tab. 7264. A full description of the cultivated species was published in *THE GARDEN* of February 13, 1892, to which readers can refer.

D. K.

THE WEEK'S WORK.

ORCHIDS.

TAKING a careful look around the Orchid houses this morning, I find many things requiring attention. The *Masdevallias*, especially the pretty little *M. towarensis*, may be increased to a large extent by division. The plants it is intended to divide should be turned out of their flower-pots or the pans in which they have been grown. Remove all the loose decayed compost from the roots and gently pull the plants to pieces with the fingers. Repot them quickly and do not use large pots for them. All or nearly all the *Masdevallias* can readily be propagated by division, and it may now be done. *M. ignea* and others are throwing up their flowers, and, of course, in their case it would be well not to disturb them. Choice *Cattleyas* and *Lælias* may be increased by division if it is necessary to do so. The process is very simple, but rather slow. The growth of such plants consists of a succession of pseudo-bulbs formed year after year. A plant may have only one "lead," as it is termed, and in that case it will go on year after year, producing one each year, the back bulbs remaining dormant, although buds or incipient growths may be seen at the base of most of them. These buds seldom start into growth as long as they are connected by the rhizomes to the leading growth, but if the rhizome is severed in front of one of these back growths, the bud at its base will start to grow, and in the course of two seasons will form an independent plant. The cut must not be made too close to the leading growth. It is better that at least three bulbs should be left behind the leading growth. A good time to perform the operation is just before the plants start to grow. Larger plants with several leads may be cut in more places than one. When *Cattleyas* or *Lælias* are very vigorous they will sometimes produce two growths from one lead. All this care is necessary only in the case of choice varieties. It is cheaper to purchase imported plants of the commoner species than it is to propagate them. The back growths after removal must not be disturbed until they have made a year's growth. It is very interesting amusement for the amateur to raise seedlings. The hybridisation of Orchids is not at all a difficult process, especially with the larger-flowered species. The pollen masses can readily be found at the top of the column, and a little lower the part where the pollen grains should be placed is distinguished by the glutinous substance on its surface. It is very easy to get seed-pods upon *Cattleyas* and *Lælias*, but the plants when obtained take a long time to grow into a flowering size. Perhaps the best class of Orchids for amateurs to begin with is the *Calanthes*; the seed-pods ripen quickly, and when the seeds are sown they soon vegetate, and produce flowering plants. I have sometimes suggested to amateurs when they have been inspecting our Orchids that they should turn their attention to the raising of seedlings, but have generally been met with the reply that they have not patience to wait. According to this view of the matter, there is no pleasure in growing Orchids unless they are in flower; whereas to a true lover of the plants, the interest in them never ceases, and in the production of seedling plants there is a ceaseless round of instruction and pleasure from the time the flower collapses, after it has been pollinised, until the seedling blooms. Those who are dealing with seedlings need to keep a sharp look-out amongst them. The seed is usually sown on the surface of

the compost in which the other plants are growing, and the tiny seedlings are sometimes smothered in the Sphagnum, or they will perish if too much exposed upon a wedge of dry fibrous peat, so that the right place comes to be the medium between the two. A little Sphagnum is necessary to protect them; too much may smother them. In less than a year after the young plants appear they may be taken from their seed-bed and be transferred to very tiny flower-pots, and when in a small state some of them may require to be repotted twice a year—all of them once a year. They seem to delight in fresh peat and Sphagnum. A careful watch must be kept against slugs, and baits of Carrots or Potatoes should be set if any of these marauders are thought to be in the vicinity.

As I write these lines we are surface-dressing with clean freshly-gathered Sphagnum, *Vandas*, *Aerides*, and *Angræcums*. Before doing so, as much of the old rotten stuff as can be removed is taken away, as also are the old potsherds and charcoal, both being much sodden by wet. The fresh material—clean washed Sphagnum, new potsherds, and fresh charcoal—is carefully worked in amongst the roots without injuring them. Sometimes it is necessary to repot some of them by cutting off a portion from the base of the main stem and letting the plants deeper into the pots. This is frequently necessary with some of the *Vandas*, as they have a tendency to lose their lower leaves, even with all the care some of the best growers can bestow upon them. In the best managed collections certain plants will not progress so freely as others; one or two will get into bad condition and be left far in the rear by their more healthy vigorous neighbours, and when it is seen that a plant which can easily be replaced is in a very bad state, it is far better to destroy it. In the case of a choice plant, of which it is not possible to obtain another, if it gets into poor condition every effort must be made to bring it round again. I have had good results by washing the roots of such a plant and replanting it in a smaller clean flower-pot.

J. DOUGLAS.

THE KITCHEN GARDEN.

LARGE LEEKS.—If large or early Leeks are required the seeds will have to be sown now thinly in a pan, which should be placed on a gentle hotbed or in a slightly heated pit. As soon as the seedlings are large enough pot them off singly into 3-inch pots, the soil being loam with a part each of leaf-mould and decayed cow manure rubbed up finely. Plunge the pots in a gentle hotbed, which will cause the seedlings to grow freely. As soon as fairly rooted repot into 6-inch pots, using the same kind of soil, but rougher. Plunge the pots again, giving them plenty of space. When the plants are well rooted feed up with liquid manure, that made from fresh cow manure and soot being the best. Keep the lights over them until the early part of May, ventilation being given according to the weather.

FORCED TURNIPS.—Turnips may be forced readily with ordinary care, and come in very useful at a time when a change is very desirable. Even with a good supply on hand of old Turnips an attempt should always be made to have young roots. What is wanted is a gentle hotbed from 2 feet to 30 inches deep, with a fertile rooting medium. On this place a two or three-light frame, which if deep should have other litter placed inside. This with 6 inches or 8 inches of fertile soil will bring the surface well up to the glass. The seeds should be sown very thinly in drills, and directly the seedlings appear give air according to the weather, as Turnips will not stand hard forcing or a close, high temperature. Later on ventilation must be applied more freely, and during the warmer part of fine days the lights may be drawn off altogether. The soil must always be kept in a fairly moist state or the Turnips will not be good. Early Milan is a good variety for forcing.

FORWARDING TURNIPS WITHOUT THE AID OF GLASS.—Before it was the custom to forward Turnips under glass it was done with an open air hot-

bed, and may be resorted to where frames are scarce. A bed should be marked out 4 feet in width and of any desired length in a sheltered and sunny spot, and the soil taken out to the depth of a foot and placed on each side. Inside this space place the fermenting material, which should be trodden in firmly. A layer of fertile soil must be spread over the surface and pressed down lightly with the back of a fork. On this sow the seeds thinly, and cover the surface with a thin film of long litter. Directly the seedlings appear take off the litter, and for affording protection at night-time and during inclement weather cover the whole surface over with mats or dressed canvas, which should be removed during the daytime unless the weather should be unfavourable.

JERUSALEM ARTICHOKE.—These having been left in the ground during the winter to preserve the flavour, it is advisable that the whole should now be taken up and sorted over both for further use and planting. Those for use should be either placed in a very cool shed or covered over with clean soil behind a north wall. Allowing them to grow naturally without replanting is not the best method, as they do not gain that size they otherwise do when means are taken to cultivate them properly. It is not at all necessary to devote an open position to them, as they will succeed very well in partial shade. They will also succeed in the same position year after year if the ground is annually well manured. After the tubers are taken up I give a good dressing of old tan and leaf soil, a little also being sprinkled along the drills at the time of planting. Plant them similarly to Potatoes in rows 3 feet apart. One or two rows 30 yards in length are sufficient.

FORMING FRESH RHUBARB PLANTATIONS.—Not only for increasing stock for forcing, but for general use, it is not advisable to allow the stools to remain too long in one place, as after a time the produce declines in vigour, and it is not of that quality obtained from younger roots. The plantation of Rhubarb should be well open to the sun. For forcing this position is very essential, to ensure the crowns ripening off early. Rhubarb being a gross feeder, the site for the bed must be deeply worked and well manured. The best time for planting is just as the eyes commence to burst, as these form roots and start away at once. Large pieces are not needed, in fact it is an error to use them, as they do not take to the soil so kindly as the smaller roots. The ground being ready for planting, cut the stools into pieces of two or three eyes, rejecting those with a rounded appearance, these being flowering stems. Plant out in rows 3 feet or 4 feet apart, allowing an extra foot between the rows. Arrange the eyes just beneath the surface, pressing the soil well around them. After planting, mulch with short litter and leave them alone. Do not attempt to pull any stems the first season, as this would weaken the plants. The next season pull the stems as required. Plants intended for forcing should be left alone for two years. Hawke's Champagne is a capital variety for forcing, of excellent quality, it also being the best for pulling early in the open. Victoria is the best main crop variety.

OLD PLANTATIONS.—A good dressing of rotten manure should now be spread about the crowns, the stems rising all the better for this timely aid. A little clean litter should be spread over the crowns of the earliest as a protection from frost. Pots and boxes may be placed over others, these being surrounded with dry litter if the weather should not be favourable for growth taking place without other aid.

A. YOUNG.

FRUIT HOUSES.

EARLIEST GRAPES.—Pot Vines, notably those grown last season from "cut-backs," broke evenly and strongly, but not so those grown into a fruiting size straight from eyes. Older Vines planted out also present a somewhat irregular appearance, some of the laterals having taken a decided lead. In order to check all such strong early breaks, which are apt to develop at the expense of later breaks, their points should be pinched out as

soon as this can possibly be done, stopping at the first joint beyond the first strong bunch that shows. In the case of there being no bunches on these extra strong leads, and this sometimes happens, pull them clean out of their sockets, and trust to later breaks to produce bunches. This timely attention diverts the sap to the more weakly shoots, an improvement in the vigour quickly becoming apparent. It may be necessary to stop a few shoots every day, and the process of removing superfluous buds should also be timely and carried out piecemeal. Should the bunches all run to tendrils or be lost from other causes, an occurrence that has to be reckoned with in some localities, completely denude the rods of young shoots, and if the next break only gives a few bunches, it will be better than a complete failure, while no harm will be done if the second break also fails to give a crop of bunches. Pot Vines that are to be trained up the roof ought always to be uncoiled and properly fastened to the wire before the shoots are far advanced in growth, or it will not be possible to straighten the latter. Permanent rods should be early slung straight up the roof, allowing about a third of their length to drop down considerably till it is seen that the lower shoots are nearly as strong as those near the ends. In order to run no risk of snapping off strong laterals it will be advisable in many cases to merely sling the rods loosely to the wires, deferring tying them up closely till after the flowering period when they will stand a little rough treatment. Keep Vines with their roots in pots or confined to small borders well supplied with weak liquid manure in preference to occasional strong doses of the same, and now is a good time to give a rich top-dressing. Supposing the night temperature at the start was kept at from 50° to 55°, with from 5° to 10° increase in the daytime, these figures may now be advanced from 5° to 10° all round, the higher figures being recommended for mild weather. On bright days ventilate so as to keep the temperature at about 75°, closing early enough to run the heat up to 80°, overhead syringing and damping down being resorted to as before. When the flowering period arrives the night temperature should be kept at about 60°, a little air being given early in the evening, a fall of 5° on very cold nights not being injurious.

SUCCESSIONAL AND LATE VINES.—Early in February is a good time to start successional Vines and Muscats generally, the produce from the former being fit for use, without much hard forcing, during July; while if Muscats are well ripened by the end of August, they will usually keep plump and good till mid-winter or later. Be content to start with rather low figures, the night temperature ranging from 50° to 55°, rising to 60° or 65°, according to outside conditions on dull days; while no harm will be done if there is an increase of 10° on these figures on warm, bright days. Maintain a moist atmosphere, freely syringing the rods two or three times daily, and the walls and floors at the same time. Disbud early, so as to prevent any waste of energy, and attend closely to the stopping as advised in the case of early Grapes. If Black Hamburgh or Madresfield Court is desired late in the season, or say from October to mid-winter, set the house containing these wide open, a few degrees of frost doing good rather than otherwise, and do not keep it any warmer till the buds are bursting. Retarding them in this fashion may necessitate a free use of fire-heat in the autumn in order to thoroughly ripen both the wood and crop, but it is the only way of having them late, short of forcing a second crop out of the rods in less than eighteen months, and which they will only stand once. If there are any bunches hanging on the late Vines, cut and bottle these at once. All the pruning ought now to be completed, the rods being put into good order for starting afresh, the glass and woodwork cleaned and the walls white-washed. Keep the houses quite cool, a sharp frost not being excluded, the Vines starting all the stronger for this enforced rest. The first week in March would be a good time to start them into active growth.

MELONS.—Plants raised early in January are

very feeble, there not being sufficient light and sunshine to strengthen them. All the same, good care must be taken of them—at any rate, if ripe fruit is wanted in April. Before they are at all root-bound, shift from small-sized into 6-inch pots, using nothing but strong fibrous loam previously warmed. Keep them in brisk heat and raised well up to the glass. Their fruiting quarters should be got ready at once. For the earliest crops pot culture answers best, pots ranging from 13 inches to 17 inches in diameter being suitable, though Melons can be successfully grown in still smaller ones. Rather strong clayey loam with or without any fibre in it, to every bushel of which is added a 6-inch potful of bone-meal and the same quantity of slaked lime, is a very good mixture, or better than anything else that can be recommended for Melons. Plunge the pots in a hotbed of leaves or leaves and manure, drain lightly, and fill with the soil soon enough for this to get well warmed through by the time the plants are ready for planting in it. Early Melons being expected to produce fruit at the first break do not require much room, and the pots may therefore be ranged closely together. If preferred, a ridge of soil may be placed along a hotbed in a forcing house, or even on a slate staging not far from the hot-water pipes, the plants being turned out into this 18 inches apart in the row. Those who adopt the plan of sowing seed in 4-inch pots partly filled with soil, giving the plants a top-dressing of loam when well into rough leaf, should have plants quite strong enough for placing direct where they are to fruit. Always plant rather high with a view to keeping the collars well above the rest of the ridge of soil, this being a good preventive of canker. More seed of approved varieties should now be sown, the plants, and which are certain to be much stronger than any raised earlier in the year, being made to produce ripe fruit in May or early in June. Melons delight in plenty of heat, the night temperature ranging at about 70°, with a rise of from 5° to 10° in the daytime, this being accompanied with plenty of atmospheric moisture. Given a good light position, there is little likelihood of the plants growing too spindly, even if no air is given for some time to come.

PRACTICAL.

PLANT HOUSES.

STOVES.—GENERAL POTTING, &c.—This work should now receive attention, but prior to making a start, it is quite necessary to have all needful materials in readiness. The preparation of soils has been alluded to previously; these should be got into the warmth of the stove, or a house nearly approaching to it in temperature. It is not many of us who are favoured with heated potting sheds; therefore, at this season the place best suited for repotting stove plants is in the house itself. This can be done with good management so as not to occasion any inconvenience. A movable potting bench is a very handy thing and saves a lot of trouble and mess also; it need not be a large one, as various mixtures of soil can be made away from it. If the pots be new ones, they should have a few hours' soaking previously; it is surprising what an amount of water they will absorb. Use no pots that are still wet from the cleansing they have had. In repotting, one general mistake is that of overpotting; there is nothing rational in this; it does not tend to the building-up of a permanent plant. It may hasten growth, it is true, in the case of very free and quick-growing plants, but there will come a time of reckoning later on with the roots around the sides of the pots, the more central portion destitute of them, and consequently soured by repeated waterings.

FLOWERING PLANTS.—Plants of a deciduous character may in most instances be considerably reduced at the root when it is not desirable to increase the size of the pots. Thus, Allamandas, Bougainvilleas and the Clerodendrons (climbing varieties) may be sufficiently reduced when in fairly large pots to allow of sufficiently fresh soil for them to re-occupy the same size again. Even

if potting these plants into larger pots, it is advisable to reduce somewhat so as to encourage a more even break of fresh roots. Such plants as the Clerodendrons (shrubby varieties) should be considerably reduced, and then be repotted into smaller pots. Plants for instance that have occupied pots 12 inches or 14 inches in diameter may be put into those of 8 inches and 10 inches, being re-potted later on as may be found necessary. The stove Vincas come under the same treatment as the foregoing type of Clerodendrons both of which are rarely seen in first-rate condition now. If they be given too much root room at the start it is seldom they do so well, but give them two or three shifts so that the roots are obliged to lay hold of the soil as they grow, then may these fine flowering plants be grown most successfully. Evergreen or semi-evergreen plants should be more carefully dealt with in repotting. Ixoras, for instance, should be potted if possible into larger pots with but little reduction at the roots. If they have to be reduced to again occupy the same size of pots, then the pruning of the shoots should correspond with that of the roots. Rather than reduce them too much, I prefer to grow on a young stock. Dipladenias need to be dealt with cautiously; if not, the plants will receive a check. Do not pot these plants just for the sake of potting them; if in need of a shift give it them, but only a moderate one; if not needed let them alone. Where the soil is sour so as to require any reduction at the roots the work should be done cautiously, so as to preserve as many as possible of the roots. Gardenias may very well be treated in a similar way to the Ixoras, save in the case of the early flowering plants. These latter should not be touched until they have flowered, when after pruning (where needed) they can be started afresh. Francisceas come under the same category as the Ixoras, but Hoyas will thrive well for several years without any fresh potting whatever; in fact they often flower best when pot-bound. Small or growing plants of *Medinilla magnifica* should be potted on, large ones being left as they are for the same reason as in the case of the Gardenias. It is never advisable to reduce the *Stephanotis* to any extent, but pot on if possible. Large plants if potted well will last for three or four years in good condition. There is plenty of time to re-establish the *Tabernaemontanas* before they flower, but if overpotted they often grow too luxuriantly. *Tillandsias*, *Vriesias*, and *Billbergias* should all be treated like Pine-apples as to potting, save that much smaller pots will suffice for them. The *Rondeletias* are very fine plants when well grown; they only need to be potted when of good size every second or third year, they being plants with very fine roots.

SOILS AND PRUNING.—The soil in the majority of the cases cited should consist of peat and loam, using leaf-mould also, or in place of the former when dealing with such fast-growing subjects as Allamandas. Ixoras, Dipladenias and *Rondeletias* should all have good fibrous peat, so should the *Bromeliads* and Hoyas, the only other addition being sand with charcoal (nutty) if the peat be not over-fibrous. Pot firmly and well in every case; work done properly in the way of potting lays the foundation for future success. In the case of all plants that have been kept dry through the winter, a soaking should be given previous to potting, as in the case of Allamandas, for instance. Pruning should all be done in advance of the potting; to withhold the knife in some cases is a mistake altogether, whilst in others it is needful to be more cautious. *Bougainvillea glabra*, Vincas and Allamandas all bear hard pruning, so does the shrubby section of Clerodendrons, with the *Hibiscus* family, and that most severely. Other climbers require a more moderate treatment, thinning out rather than a general pruning. The *Rondeletias*, to flower them well, require to be hard pruned when a well-formed plant has been obtained; this fact often escapes notice in their treatment. Francisceas, the *Tabernaemontanas*, and the *Medinillas* must be dealt with after flowering, a fresh growth afterwards being made for another year.

J. HUDSON.

FLOWER GARDEN.

THE ROCK GARDEN.

PREPARATORY WORK.

WHETHER our rock garden is to be on a large scale or of modest proportions, a certain amount of preparatory work will at all times be necessary. The extent of such work must vary, of course, according to the site chosen.

If the selected ground is already an irregular pit or dell, little preparation will be required beyond taking off the surface soil, ensuring perfect drainage, and perhaps making a few recesses to increase the irregularity. The excavated good surface soil and that of inferior quality should, of course, be kept separate, and though both kinds may be again required for raising other portions of the ground, it will at all times be found an advantage not to deposit this soil too near, where it would be in the way when arranging the stones, but just near enough to be thrown behind the stones as required. I do not favour the theory advanced in some books that to make a rock garden the soil should be filled up first and the stones put on afterwards. I believe, on the contrary, that the soil should be supported by the stones, and not the stones by the soil. If the site for the rock garden is an almost level piece of ground, more extensive and deeper excavations will be required in order to produce the desirable irregularity. A sunk rock garden has many advantages, which will be pointed out further on. Deep recesses for caves or other features should be taken out much wider than really required, so as to allow plenty of scope for a picturesque arrangement of the stone. Where water is to be in connection with the rock garden, either in the shape of a pond or streamlet, the position should be carefully marked out and excavated at the first, and in arranging for the size, due allowance must be made for the thickness and depth of cement, concrete or other material used for securing the sides and the bottom. As such portions would, naturally, be in the lowest part of the rock garden, all elementary work, masonry, drainage, &c., should if possible be completed before the actual rock building can commence, as that latter work also must of necessity be begun at the lowest level, especially if the rock garden is to be somewhat extensive or if the ground is sloping. For the construction of a small rocky bed little preparation is needed beyond a slight excavation and perfect drainage. Before beginning the actual work of constructing the rocks, it will also be found an advantage to have at least the greater portion of the stones, soil, and often even some of the plants in readiness and close at hand. When stones are procured in small quantities only as the work proceeds, it will be found much more difficult to make the most of them, and it may often happen that the stones arriving last include pieces which could have been used to much better advantage had they been available during an earlier stage of the work. The stones should, if possible, be deposited on the higher side of the field of operations, as it is much easier to move them down hill as required. It is advisable to procure a number of good strong planks on which they may be rolled into their places. For moving heavy stones, there is no better means than a low trolley as used by builders, and generally made of strong planks measuring about 4 ft. in length and 3 ft. in width, having a strong pole which furnishes at the same time an excellent lever for loading heavy pieces. The wheels of this trolley should be very strong and not more than about 12 ins. in

diameter, so as not to project above the trolley, where they would be in the way when loading stones. Extrasized stones, weighing a ton or more, are best shifted by means of planks and rollers in the following manner: The stone should be placed on a strong plank, say 2 feet wide and 6 feet to 8 feet long. Beneath this plank should be placed round pieces of wood or iron to act as rollers, which, again, should run on a kind of tramway made of planks lying flat on the ground, and so placed as to be easily shifted if required. It will be found very easy to propel in this way by means of iron bars or other levers stones even as much as 2 tons in weight. Three rollers are required for this mode of transport, but only two would be used at a time, keeping the other in reserve for placing it in position as soon as the plank on which the stone rests has left the last roller. If heavy stones have to be moved to a higher level than could be safely effected by means of rolling them on an inclined plane made of planks, it would be best to hoist them by means of blocks and pulleys.

The soil required for the rock garden should, as already stated, also be in readiness at the commencement. It would be advisable to procure a quantity of loam, gritty sand, peat, leaf-mould and broken stones, depositing them in separate heaps and mixing as wanted, according to the requirements of the plants to be used. A little old mortar or chalk will also be found a very desirable material for mixing with the soil intended for the lime loving alpine. A small quantity of Sphagnum Moss might also be obtained, as it will be found a valuable article for all plants requiring a moist and spongy soil. It is of the utmost importance to know, before the stonework is proceeded with, for what class of plants the rock garden is to be made, and as many of the alpine are best planted during the progress of the work, it would be as well to have such plants close at hand. These plants, wherever possible, should be procured in pots and might be plunged close by and selected as required. This is particularly desirable in the case of all plants which have to be inserted sideways into upright or slanting fissures, as they could never be planted so easily after the stonework has been completed as during the progress of the work, when the soil used for filling in behind the stones might be specially adapted to their wants. F. W. MEYER.

Exeter.

(To be continued.)

NOTES ON HARDY PLANTS.

Lithospermum prostratum.—I fear it is but too true that in severe winters old plants are liable to be killed. There is additional risk in the case of plants, however strong they may be, that have become hardened in the wood about the collar. It is at this part generally where frost injury occurs, as if the grain of the wood when ripe could not resist rupture. It is a good plan to keep this plant dry in winter, though in summer it loves plenty of moisture. Referring again to the way in which old plants die whilst young ones under the same conditions live, it is not by any means peculiar to this plant. You see the same thing largely in the Sun Roses (*Helianthemum*), some of the *Hypericums*, Wallflowers, and Lavender, and many other small shrubs that have wire-like wood and thin self-peeling bark or skin, and it is precisely this class of plant that is benefited more by shelter from wet than shelter intended to otherwise keep off the cold.

Lilium giganteum.—My experience of this is but very slight; it is true it has existed with me for many years, though it has not flourished. As I have often said, I fear my soil is too dry for Lilies. The peculiarity about this Lily is that the offsets

come very near the surface, and yet according to my experience they may not be allowed to remain there during the winter safely; 20° of frost will take them wholesale, though the bigger and deeper set parent bulbs have not been killed.

Coronilla varia.—The commonest form of this is that with a blend of white and rosy purple in the clustered flower-heads, but even in a single specimen the colours are not uniformly disposed; indeed, the specific name may in this case be said to have a threefold application. The species itself is variable, the rosy purple being more or less present and sometimes quite absent in different specimens. Then it may apply in the sense of various colours being present in the flowers, and also again, as already mentioned, in the flowers of a given cluster being variously coloured, as say some white and some rose. There has of late been considerable inquiry for this species; why, I do not know, but it is that fact which has in part suggested this note. Possibly it may be that something has occurred to largely cause its death in many gardens, for it is no uncommon thing for some of the leguminose species to go off in this way during some winters. For instance, a year ago the white Goat's Rue (*Galega officinalis alba*) largely died in all parts of the country—an interesting fact worthy of attention. With regard to this *Coronilla*, however, I must not speak in excess of my own experience, and it is this, that I never experienced its loss otherwise than by a most vigorous intention to destroy it. Once it gets a good root-hold you may find it springing up strongly anywhere 3 feet or 4 feet from its previous year's tops. After all it is a showy and even beautiful plant, especially when not kept in bounds or given a place where its rampant habit can have scope. In short, this rapid spreading plant of a stature of a foot or 18 inches and a procumbent habit is most fitted for the semi-wild garden, where, however, it may have plenty of sunshine. *C. iberica* is decidedly tender.

Silene acaulis.—"Do you get this to flower well?" From the frequency of this question one may almost infer that in many gardens it is a sparse bloomer. As a matter of fact I know it to be so, and it is equally certain that in other gardens it flowers profusely. You get it to grow far better and also flower more freely if given plenty of limestone chips amongst its roots. It is also a plant that clearly shows its love and preference for the thin air of the mountains, and although I am unprepared to draw the line of the cause of flowering and non-flowering specimens on these conditions, I believe that observation will confirm the theory that pure air and lime are all but essential for not only good flowering specimens, but for vigorous foliage; indeed, generally where the plant is well grown there is not much cause for complaint at the absence of flowers. It may also be of interest to know that in the western highlands of Scotland this plant abounds in peaty soil in flaky layers on big rocks mixed with the pretty little *Thalictrum minus* and the dainty *Loiseleuria procumbens*. Of course, in such habitats the plant has the benefit of purer air than when under cultivation.

Omphalodes verna.—I would not attempt to plant this until a couple of months hence. The offset roots from the outer edges of big specimens, which will be the best for transplanting, will be better left on the parent plant until March. It is true they may then be showing flowers, but this will not matter, the object being to establish in the shortest space of time bold groups; besides, if the offsets can be transferred with a goodly portion of soil to their roots, they may flower in their new quarters just as well as if they had not been detached. The plant likes partial shade, but is not particular about soil if not actually stiff or clay-like.

The double white Rocket.—I do not think that we have any reason to find fault with the hardness of this plant as a cause for its dying off in some gardens every winter. It is well known to be perfectly hardy, and, indeed, to be happier nowhere than with our Scotch friends in some of the coldest districts. It is, however,

better for annual propagation by division of the stalks and crown buds. What I mean by this is that the bulky buds which push into growth in the autumn at or near the ground-line may be slipped off singly; such as have roots and those higher up the stem may be taken with all or a portion of the stem slit downwards so as to include a part of the old root. These rooted offset buds and divisions of the older stem should be planted in rich soil not later than early September. Old plants should be stopped by cutting them overhead to induce the young foliar growth as soon as possible. This enables the propagator to secure free growth and well-established plants before the cold sets in, and stock so prepared is much more reliable. I believe, as I have before said in these columns, that the chief enemy is the grub or caterpillar which enfolds itself in the very heart of the young foliage, so that when it does not actually kill the plant it so weakens and destroys the point of growth, that at the best but weak plants and indifferent bloom can be expected. Now this pest is one of the most persistent I have ever had to deal with amongst flowers. You think you squash it, but it remains active, doing injury all the winter months, and when it gets larger in spring in a very short time it is capable of eating off both old and young leaves. There is very visible evidence of its presence in the form of a white matted web securing the younger leaves, rolled in the midst of which it is found to nestle. Hardly anywhere can you find the double white Rocket, or for that matter the double purple, free from this enemy, and often when you may think you have cleared a plant thoroughly, it may be again found to be infested as bad as ever in a week or two. Still all you can do that I am aware of is to relieve the plants by hand-picking from time to time.

Inula Hookeri.—Raised from seed this is very near to *I. glandulosa*, so much so, that some plants can only be recognised when grown side by side with the older form. A well-marked distinction is its taller and more erect growth. Generally speaking, it does not form underground stems, like *glandulosa*; and yet it would not be correct perhaps to say that it does not run at the roots at all, for I have proved it to do so in a small degree in the case of plants that have been left three years undisturbed, and grown in a light soil and warm situation. I daresay that some people will wonder why I grow a plant like this in a sunny place and light soil, for it is well known that no plants are more distressed by a hot summer's day than the *Inulas*. My chief reason is that from want of space I cannot give all plants exactly the conditions that would most suit them, and certainly the *Inulas* are capable of being perfectly revived after powerful sunshine. Should the buds, however, or heads be considerably developed, they may be rendered blind by a hot, dry day. I would certainly sooner plant the *Inulas* in a fairly stiff loam of a retentive character.

Hepatica angulosa.—This in our cold Yorkshire climate flowers contemporaneously with the winter Aconite and earliest Snowdrop. At present it is doing so after the severe spell of frosty weather, mostly without the advantage of snow. How slow many of our flower friends are to practically recognise this the earliest and the largest flowering of the *Hepaticas*. As a rule the varieties implied by the name *Hepatica* are the varieties of *triloba*, and rarely is this larger species asked for by its name, as it should be. It is earlier by a month than the varieties of *triloba*, and by two months than some of its varieties. This should be reason enough for commendation. We can well do with a few more reliable midwinter flowers.

Woodville, Kirkstall,

J. WOOD.

Callas.—No doubt the planting out of the roots in the summer is an easy way of growing these, especially where the plants are required of large size for decoration and where labour is scarce, but where a quantity of blooms is needed by Christmas, the plan of keeping *Callas* in pots is calculated to give the best results. I find that where

the *Callas* were put out in the summer, potted up at the end of September, and grown in a moderately warm greenhouse, the leaves soon become lanky and drawn if, as it often happens, the plants are some distance from the glass. The Messrs. Drover, Fareham Nurseries, who are large growers of this Lily, now keep their plants in pots the whole year. One season they had a span-roofed house containing 1000 plants mainly in a centre bed. These were planted out in heavy soil in the house, but evidently the plan was not considered satisfactory, as next season pots were again employed.—E. M.

THE FROST OF 1892-93.

WE had a frost beginning with Christmas Day, and lasting for more than a fortnight, ending as usual with snow. It is interesting to see the effects on the out-door garden to-day, the last day of January. It is surprising to notice the rapid advance of early flowers after enduring 20° of frost, and being bound up in frozen earth as hard as a stone. *Anemone blanda* is in flower, and only waiting for a sunny day to expand fully its beautiful purple blossoms; it is a perfect treasure in the early year. *Anemone fulgens* has been frost-bitten, but will evidently soon come into flower if this mild weather continues. One of the finest beds of mixed *Anemone coronaria* I ever saw was in flower on Epiphany (January 6), but that was near Modbury, in South Devon. Here we shall have to wait some time for our *Anemones* of that species, but *Anemone apennina* will soon be beautiful; it grows in every nook and corner of my garden, and seems to spread freely every year.

Primula cashmeriana has suffered a good deal from frost and snow, but is already recovering. *Primula sikkimensis* died, though sheltered in a cold frame; I had some fine plants and I consider them a great loss. *Primula rosea* is beginning to start, after being almost invisible. It is in a cold, damp place out-of-doors.

Helleborus atropurpureus is in flower and has been ready to open its purple buds since December. *Maximus* and *niger* are unaccountably late with me this year. I am glad to see in THE GARDEN of last week that others have failed with the common Christmas Rose in tubs as well as myself; I nearly lost some plants by growing them in that way. I attributed the failure to the soil being too stiff. I am inclined to try them in tubs again with more sand and leaf mould. The pretty leaves of *Helleborus trifolius* are, of course, perfectly free from any harm by the late frost; they are undoubtedly useful fine-foliaged plants, and the flowers are interesting.

Iris reticulata is looking unusually strong and just showing colour. After reading what was said about this *Iris* last year, I debated in my mind whether to take it up in summer, or leave it in the ground. I decided upon the latter alternative, and it has answered well. It has now been left undisturbed in the same place some years. I took up *persica* and dried the roots and replaced them. I am sorry to say they are not yet showing above ground as they ought to be. *Hispanica* is looking well and strong. It is one of my favourites.

Hundreds of *Snowdrops* will be in flower in a day or two; I wish I could say thousands. The common yellow *Crocus* is opening to-day. The pretty flowers of the Winter Aconite (*Eranthis hyemalis*) have been out for a week, making good companions for *Anemone blanda*. *Allium neapolitanum*, which is just now a useful greenhouse flower, is trying to grow in the open, but having been well advanced before the frost, it is severely cut, but will, nevertheless, evidently come on and flower later in the season. I thought this year I would try how early I could get the Paper-white *Narcissus* to flower out-of-doors. The buds came on rapidly in December, but the frost pinched them, and it is doubtful now whether they will open or not. If they do, they will be very much earlier than any other kind. Of course they are over in the greenhouse, where they were deliciously sweet at Christmas-time.

Since the frost I have been able to gather a bunch of Marie Louise Violets, but although they were carefully covered with mats in the frame during the severe weather, they have suffered a good deal from frost.

Bambusa Metake seems to be absolutely impervious to any amount of cold. It is indifferent to snow or frost, and holds its own as if no alteration of weather had taken place. Not so with *Arundinaria falcata*, which suffers a good deal, but being deciduous it does not destroy the beauty of the plant next year, when it pushes up fresh rods, and some of the old rods are clothed anew with its beautiful leaves. It is a singularly handsome Bamboo in my opinion, and has lived out-of-doors and increased in size with me for many years, while *Pampas Grass* has been ruined, though not absolutely killed by snow.

Cyclamen hederifolium collapses during the frost, but as soon as it is over, it revives and becomes at once fresh and green again, nestling, as it loves to nestle, among the roots of some tall forest tree. *Chimonanthus fragrans* is flowering abundantly, and its little yellow blossoms taken off the tree and placed in a saucer with some water scent the room. *Olearia Haasti*, about which there has sometimes been a question as to hardiness, has stood the extreme weather perfectly well and looks as fresh as it did in September.

A GLOUCESTERSHIRE PARSON.

EVERGREEN HARDY PLANTS.

WHEN hardy plants are merely grown as isolated specimens in mixed borders, it is impossible to realise the possibilities special things possess for creating fine effects. The mixed border, treated in the orthodox way, is a very bald and bare expanse during winter, for it must be made to conform to certain false notions about tidiness; so every stem is cut to the ground, and sticks and labels are the prominent features during winter. We are improving on this—in the first place by making particular selections, and thereby using fewer subjects in greater quantity, grouping instead of isolating; and the plants that retire to rest beneath the ground, such for example as the *Starworts* and *Knotweeds*, are not cut down, but their graceful nut-brown stems are permitted to stand through the winter. A clothed surface is better than a barren one, and a plant's own stems denote its individuality and whereabouts infinitely better than stakes and labels. Something still better may be had, however, by selecting those hardy plants whose leaves are persistent, and grouping them in beds or borders near the house if required.

The *Yucca*, with its bold pointed leaves, is at all times a striking plant in the garden, and worthy of prominence. In places where it is liable to suffer from the severity of the winter, the sheltered border near the house would be a fitting place for it. The *Megaseas*, or broad-leaved *Saxifrages*, which rank high among evergreen hardy plants, are of easy culture in any place or position, at least one pretty way being to use them as a groundwork or carpet to colonies or groups of *Yuccas*. Their normal colour is green, but in certain soils and situations they take on during winter most glowing hues of crimson and retain them till active growth commences in spring. *Hellebores*, or Christmas Roses, have handsome leafage, especially those whose flowers are the least ornamental. *H. niger* and its varieties, flowering throughout the winter, attract us chiefly by their flowers, but the rich glossy leafage is pretty also. Much finer are the leaves of the later flowering red-coloured species. The Oriental kind (*H. orientalis*) has immense tufts of leaves borne on stems 2 feet in length, and which stand up boldly. In a rich deep moist soil it is a truly striking plant, and would be prized by many if it never flowered. There are some others of this character, but none quite so fine. There are other species well adapted for bold groups in the garden or to furnish bare sandy banks of poor soil where little else would grow. Our native species (*H. foetidus*) is typical

of these. It makes quite a large specimen, for whilst other Hellebores are truly herbaceous, this has a shrubby habit of producing long stems, which are richly clothed with dark green digitate leaves. It has a rather unpleasant odour when handled, but as seen growing is very effective. *H. viridis* is also of merit, and still more striking is one we have under the name of trifolius, a name, by the way, happily descriptive of its characteristics. It has a bushy habit of growth, and the leaves consist of three large broad leaflets terminating the leaf-stalk. They are rather oval, serrate, and spiny looking upon their edges, looking more like the leaves of a Mahonia than those of a Hellebore.

Till the advent of *Heuchera sanguinea*, little notice was taken of the family, for the species

bronzed during the winter. Ferulas can hardly be called evergreen, but their season of rest is a short one; for, dying down at the end of summer, they appear again before the year is closed. The finely-cut, tender green leaves look ill adapted to withstand winter's frost, yet they suffer not, but afford the richest bit of verdure imaginable. The blue Indian Poppy (*Meconopsis Wallichii*) is not a plant for every garden, but a group of a dozen plants that we had two years ago was charming throughout the winter, the leaves being nearly a foot in length and thickly covered with yellow hairs. *Morina longifolia* might be mistaken for a strong Thistle, so great is the resemblance of its leaves; they are very long and prickly. A group should be disposed where one

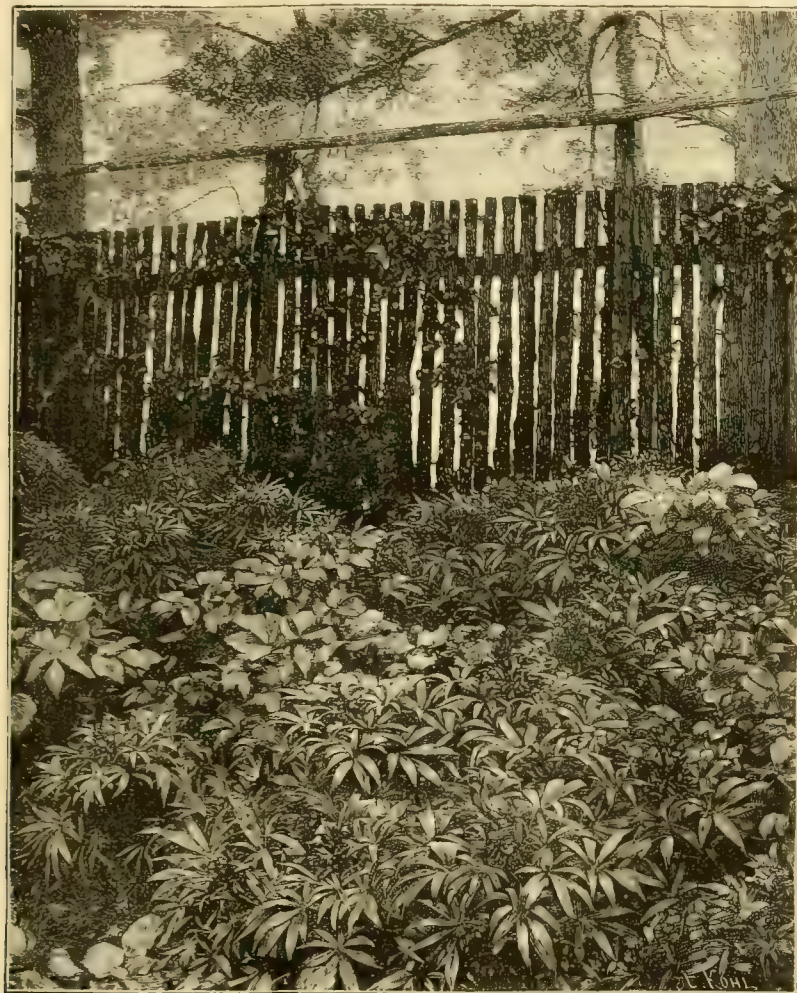
this Snowdrop growing on the rockery, a position it appears to enjoy immensely, judging from the manner in which the bulbs increase and the luxuriance of the foliage. The soil is rather heavy and deep.—E. M.

Tuberous Begonias in distinct beds.—

While approving of having one colour only in a bed, we must not lose sight of the fact that this plan is only practicable in large gardens. In small gardens this plan cannot well be followed, or many lovely shades now obtainable in tuberous Begonias would have to be left out. It is really necessary in small places to confine the Begonia beds to say two at the most; in that case a mixture is necessary. In public parks and large gardens, beds of one colour I approve of very much. What could be more effective than a whole bed of the darkest or brightest red-flowered variety edged with Begonia Princess Beatrice?—S. P. H.

A BORDER OF HELLEBORES.

THE accompanying illustration depicts a charming bit of garden, attractive even in the depth of winter from the rich luxuriant leafage of the Hellebores. In many gardens such a position would be left bare—an eyesore and a receptacle for rubbish, but planted with the Hellebores it is clothed in beauty, the oaken fence partially clad with Ivy and the trees beyond composing an interesting feature. One wants variety in English gardens. Little thought is given to certain types of plants peculiarly adapted for positions often considered unsuitable. A very striking plant at this season of the year is *Helleborus foetidus*, which may be used with excellent effect in such a position as that portrayed in the illustration. One may get much enjoyment from a bold group of it, the leafage richly coloured, luxuriant, and beautiful in the winter season. When naturalised the plants make splendid growth, and very early in the spring the greenish flowers appear, a decided contrast to the deeply coloured leathery foliage. This native Hellebore may be grouped on the rougher parts of the rockery and in the woodland, exactly the positions in which the fine leaves and flowers are seen to the best advantage. It is useful also for clothing a rough bank, minding not even the poorest soil. Another noteworthy kind is *H. viridis*, which has very deep green leafage and also pale greenish flowers. A colony or group of this native species in the wilder parts of the garden or in front of a shrubbery possesses much beauty. *H. lividus*, introduced from Corsica about 1710, and *H. Bocconi* may be added. Such fine species as *H. foetidus* may be grown in odd corners where it is difficult to coax anything else to thrive. I was in a garden recently in which bold clumps of it were planted in a narrow border skirting a house, and where nothing else would succeed. But in the moisture, shade, and ordinary soil the Hellebore spreads out into a luxuriant mass, a picture of winter colouring, the leaves intense green—in perfect agreement with the heavy head of bloom. It costs little to get good winter effects, and, easily grown as is this type of Hellebore and the Christmas Rose, very little use comparatively is made of them in gardens. On the rockery at Kew bold clumps of the Christmas Rose are in full beauty, the mass of pure white flowers against the dark brown tree stumps standing out clearly. By the side of a little brook or ditch, as in the garden of Mr. G. F. Wilson at Wisley, the Hellebore thrives to perfection, spreading out into luxuriant tufts and giving welcome handfuls of bloom in the winter season. Shade, moisture, and to be left alone are the chief requisites. Hellebores dislike frequent disturbance at the root, and should be left alone to grow into bold handsome



Growth of Hellebores in the winter.

in cultivation had no floral beauty, the colour of their flowers being chiefly green; but when grouped or massed they give us a delightful effect of leafage in shades of bronzy green and crimson. Carpet beds of tender, bright-leaved plants are hardly wanted during the summer season of lovely flowers, but a spreading mass of *Heuchera* is a picture at the present time, and goes a long way to prove that winter need not be quite a dreary, lifeless and colourless season among hardy garden flowers. Some Irises have ample leafage throughout the winter. There is a variegated form of *I. pseudacorus* of special beauty and distinctness, whilst *I. foetidissima* is very attractive at the present time, with the added merit of being able to hold its own and make itself conspicuous in wild and grassy places. *Phlox* *samita* carpets the ground with verdure, whilst the whorled flower-stems of last summer stand up erect. The leaves of *Epimediums* have become beautifully veined and

might brush against it and fill the air suddenly with the sweet spicy odour at all times present in the leaves or flower-stems. Tufts of the Dropwort (*Spiraea filipendula*) are hardly less graceful than the Ferns that we shelter beneath glass; whilst, descending to plants of lowlier growth, such as the many alpiners which thrive as well in our lowland gardens as upon their native mountain slopes, how numerous and varied are the evergreen types. With Saxifrages, both mossy and encrusted, Sedums, Sempervivums, perennial Candytufts, Sandworts, Speedwells and Gentians, a border of evergreen hardy plants need not lack variety, and that of the choicest and best.—A. H., in *Field*.

Galanthus Elwesii.—Last season the first bloom of this Snowdrop opened on December 26, while a flower was not to be seen until just one month later this year. We have a large patch of

masses, attractive for their beautiful leafage in winter and white flowers. Of course, the most useful is *H. niger* and its varieties, about which notes have recently appeared in *THE GARDEN*, but one must also bear in mind that other section which blooms later in the year, March and April, and popularly known as Lenten Roses. A group of *H. orientalis* is very beautiful, the flowers purer in colour than those of *H. olympicus* and of finer shape, the rich green leafage deeply cut, and amongst the forms of *H. colchicus*, which represents the crimson-flowered section, one can get many richly coloured varieties. *H. colchicus* is a beautiful Lenten Rose, the flowers deep purple in colour, the dark green leaves spilt up into several bold leaflets. When well grown the growth is remarkably robust, the richly coloured flowers standing up boldly above the base of foliage. One may get much enjoyment from the forms of this fine Hellebore, some flowers, as those of *punctatus*, being beautifully freckled and spotted, whilst those of *coccineus* and *roseus* are scarlet and rose respectively. Much has been accomplished of late in raising up a distinct and handsome progeny, the outcome of crossing *H. guttatus* and other types, and we get in the more recent hybrids finer form in the flowers and variety in the colouring. The foliage must also be taken into account, and it is the chief attribute in every case, the leaves invariably of fine appearance, making the Hellebores, even when out of bloom, attractive in the winter season in particular.

There is no lack of variety in the Hellebore family. One may choose the white-flowered *H. niger* or its many forms, or the Lenten Roses, not forgetting the type represented in the illustration. *H. abchasicus*, *atro-rubens*, *olympicus*, *purpurascens*, &c., deserve a place where it is desired to form a good collection. A border of Hellebores might be made in a garden where space could be spared. It would prove an interesting feature and provide a succession of bloom over the darkest season of the year, the earliest blooming varieties of *H. niger*, then *H. foetidus* and the Lenten Roses to close the season of the Hellebores. Bulbs (Daffodils in particular) might be planted between the clumps to help to produce a gayer effect, the various shades of yellow harmonising well with the deep green leafage. Although the plants thrive in ordinary soil, in the case of new or special kinds, whose likes and dislikes are not well understood, it is safer to prepare a light loamy staple with which a fair proportion of well-decayed manure has been incorporated. Moisture is necessary, but not stagnation at the roots, and some growers of hardy flowers seem to find some difficulty in discovering a distinction. If the ground is not in good condition at the commencement, it pays to prepare it well, as many years may elapse before it is necessary to disturb the luxuriant clumps of foliage.

During visits to gardens and nurseries, notes are made of the finer varieties of the Lenten Rose for planting to give beauty to the bed, border, or rockery, as the case may be, and to supply cut bloom. A few of the more noteworthy comprise *Commerzienrath Benary*, the flowers snow-white, of excellent form and spotted with purplish red at the margin; *Willy Schmidt* is a white variety, the flowers of large size; whilst also of merit are *Apotheker Bogren*, purple-rose, bright and effective; *F. C. Heinemann*, deep purple, spotted and veined with the same colour; *Abbin Otto*, white, beautifully spotted with red in the centre; and *Gretchen Heinemann*, purple and rose, streaked with carmine colour. Bold and handsome are

these flowers for cutting. Unfortunately, the flowers do not last so fresh when cut as those of the Christmas Rose. C.

THE CULTIVATION OF LAVENDER.

UNTIL within the last few years Lavender was largely grown in that part of Surrey of which Mitcham is the centre. At that time it was no unusual sight to see whole fields of twenty acres full of Lavender. Owing, however, to various causes but little Lavender is now grown. Foreign competition has reduced the cultivation of home-grown Lavender. A few years since Mitcham oil sold at £10 per lb., while last year £2 to £2 10s. per lb. was a fair price. Another reason for the decrease in cultivation is that many plantations have been injured heavily by the late severe winters and by a peculiar form of disease which attacks the bushes at various ages and kills them. The only remedy appears to be prompt removal for fear of contagion. Some say it is owing to exhaustion of the soil through growing the crop too long in the same ground, but that is a mistake, because I have had plants go off in a similar manner when but a year planted in ground on which Lavender had never been grown. The fall in price, too, may have made cultivators careless to battle with the disease with a view to discovering its origin and cure. In the neighbourhood of Sutton, not far from Mitcham, many fields of Lavender have been dispensed with during the last three years owing to the wholesale manner in which the plants have died. This, however, was mainly owing to the wrong selection of soil. Although the soil on the surface is light and sandy, the subsoil is a stiff clay, and consequently retentive of moisture during the winter and spring. Under such conditions the plants were unable to withstand the severe frosts.

There can be no doubt whatever that Lavender culture can be made to pay a fair return where the conditions are favourable, especially if a home distillery can be adopted. Not only is this a saving of expense in carriage, but where it is not possible to dispose of the flowers in bunches they can be distilled without loss.

SOIL.

Lavender culture in a district where the soil and situation are suitable would be a very good enterprise for allotment and cottage-garden holders; the distillery could be managed on the co-operative principle, and with success. In growing Lavender for profit the best sort should be chosen. This is undoubtedly the English variety *spica*, commonly known as Mitcham Lavender. Authorities do not agree as to the exact name and description. The best kind for commercial purposes is easily recognised by its upright growth and larger flowers, which are deeper in colour than those of the French variety, which is perfectly useless as an oil-producer, although this sort answers very well for the growth of the bloom to sell in bunches. Last August I cut over five hundred flower-spikes from one three-year-old plant of the French sort. Another point in its favour is that it is hardier than the English kind. The growth is more spreading, the leaves are larger, much more grey or mealy in appearance, the flowers also being smaller. The situation is important, that which is elevated and with a southern and western exposure being the best. Shelter from the north and east is most essential. In seasons like 1887 the yield of Lavender oil will be good, the hot sun and drought of the summer being productive of much fine oil. The subsoil must be dry during the winter and the surface soil of a calcareous nature. Where a loamy soil overlies chalk, though this be at a distance of 2 feet from the surface, all the necessary conditions to success are met. Some say that the soil must be poor to grow good Lavender, but, like most other crops, a fairly luxuriant growth gives the best crop of spikes, and from these a better yield of oil is obtained than from small puny flowers, the result of poor half-starved land. A soil too rich would induce luxuriant growth, which is not favourable

to withstanding severe frost. The kind of soil will influence the time the plants will continue in good bearing condition. In some instances eight years is not too long for them to remain on the same ground, while in others a period of four years is long enough. In preparing the land for the plants it ought to be well worked, ploughing it 6 inches deep if possible, following with a subsoil plough in every trench, afterwards crossing the top spit to break up the clods.

PROPAGATION

is effected at first by the aid of cuttings, or, what is perhaps more correct, slips are usually employed to increase the stock, except where sufficient can be obtained by dividing existing plants down the middle. I have tried both cuttings and slips. Much greater success is obtained by the latter. Pieces with three or four growths attached are the best. These, slipped off the plants by a sharp downward tug, contain a small portion of old wood attached to the base commonly called a heel. From this part roots are first formed. Some pull old plants in pieces and with pruning shears or a small bill-hook sever the cuttings squarely across about 3 inches below the growth shoots from the main stems. In this case roots are first made from the sides of the cutting, not direct from the base, as in the case of the slips.

Opinions differ as to the best time for inserting the cuttings. I have tried the early part of October and also February. The greatest success has been obtained during the first-named time, especially if the position is a sheltered one. There are several methods adopted in putting in the cuttings. Some cultivators dibble them in in rows 1 foot apart and the same distance from each other. The following October the plants are thinned, removing every other. The next year, after a second thinning, they will stand 3 feet apart, which is the maximum distance allotted for the permanent plantation.

I consider the best plan of inserting the cuttings is to select a piece of ground with a slope to the south if possible and well sheltered from the east. Take out a trench at one end and commence to dig it over, chopping out a trench about 4 inches deep; on the bottom of this spread a little sand. Place the cuttings in the trench 4 inches apart, making sure that the base rests firmly on the bottom of the trench. Fill in the trench with the soil in digging for the next row, treading it firmly about the cuttings. These then stand upright. The next row comes 1 foot from the first, and so on until all is completed. The following September the plants should be put out permanently, or if land is scarce 18 inches apart for two or three years; then remove every other. Directly new growth of 2 inches is made, the point of each shoot should be pinched out with a view to induce side shoots to form, making a more compact and larger bush. This operation should be performed at least three times the first year when the growth is free; otherwise twice will suffice. A wonderful difference is manifest in plants so topped as compared with those allowed to grow without molestation. In the case of impoverished soil, a dressing of farmyard manure should be ploughed in previous to putting out the plants. The ground should be kept well stirred and free from weeds at all times. A horse hoe answers capably where the plants are 3 feet apart. It is wise not to allow the plants to flower even the first year after they have been put out.

Some growers slightly earth the plants up in the autumn on both sides with a plough, especially where the land is wet; it answers as a protection to them. The soil is again levelled down in the spring with the horse hoe.

To keep up a full stock of plants, a few cuttings should be inserted every year. Directly a plant shows signs of decay it should be destroyed.

HARVESTING

commences directly the first flowers open if the Lavender is to be sold in bunches. The manner of disposing of the flowers must be taken into consideration. In some markets about 25 flower-

spikes are required in a bunch, while in others from 300 to 500 is the rule. Full-sized plants will produce on an average 200 spikes each. By commencing to cut the flowers early, a longer season is gained; if the spikes are left until the bulk of the flowers has expanded, many of the forward ones drop in removal.

Harvesting for distilling requires much more care and judgment in determining when the cup at the base of each flower is well charged with oil; it is not the actual flower that produces the oil, as some inexperienced persons are apt to think. When about three parts of the blooms on each spike have expanded some few of the oil cups at the base of each flower-head will begin to drop. Examine the ground about the plants daily; when these are found no time should be lost in harvesting the whole crop. At the same time many of the buds at the point of the flower-spike will not have opened. Those at the base, however, are more important, being so much larger and better filled with oil. Last year the flowers were not ready for cutting for distilling until the first week in September, owing to the summer being rather cold and damp; consequently the yield of oil was small. If a properly made Lavender hook is employed, the work of cutting is much facilitated. This differs in shape somewhat from an ordinary reaping hook by being narrower and more bent in the middle. An expert person will clear a whole plant at one sweep. The cutter lays the flowers carefully on the top of the plant from which they were cut. They are then collected if sold green; if for distilling, they are left lying on the plant for a day or two, being turned once to hasten the drying. The aim is to dry the flower-stems in a similar way to the making of hay, so that they do not mildew when stored away. It is not always convenient to have the oil distilled as soon as the flowers are ready; the still may be engaged, as it is sometimes, for ten or twelve weeks in advance, when one distillery is employed for the whole neighbourhood. Indeed it is not necessary to distil the flowers even the same year; they will keep quite well until the next season without deteriorating in oil-production, provided, of course, harvesting has been properly done. If, however, there is the slightest trace of mildew or damp when the Lavender is stored for the winter the whole crop will be rendered useless. After the flower-spikes have lain on the plants for a time and been turned once to equalise the drying, they should be collected in ordinary Russian mats, spread out thinly and exposed to the sun, but not allowed to become wet. If the weather is fine, ten days will be sufficient to dry the spikes thoroughly. In the case of the first or the second year of cutting the flowers, the plants may not be large enough for laying the flowers on the top of each; in that case they should be spread thinly on the mats, elevating these 1 foot above the ground. The cost of distilling Lavender is about 22s. for the use of the still once; a full-sized still will hold as much Lavender as can be rolled in twenty-five full-sized Archangel mats. It is difficult to give even an approximate idea of how much oil is produced from a given number of plants or acreage, as the quantity depends upon the state of the weather for a month before the flowers expand; 25 lbs. of oil would be considered a fair yield from one acre of full-sized plants. If the harvesting of the flowers is well done the plants need little attention afterwards in the matter of pruning. An instance of reckless pruning of Lavender bushes came under my notice a few years since. A grower had allowed his plants to get uncommonly tall in their early stages of growth; in consequence they did not produce nearly as many flower-spikes as if they had been kept dwarfer and consequently broader. After the flowers had been gathered the first year, the plants were cut hard back into the old wood, so much so that they bled profusely, and severe frost following killed nearly the whole of the stock.

E. MOLYNEUX.

Early Snowdrops.—I gathered the first Snowdrops this year on January 23. These were from a situation where the bulbs never get a bit of sun during

the summer, being overhung with big forest trees. They are growing on a dry hard ledge beside a water-fall, and must get very dry during the summer. I have observed in this situation the bulbs go to rest the first and are the first to bloom. —J. C. F.

PURPLE IN FLOWERS.

TO THE EDITOR OF THE GARDEN.

SIR,—I trust you will allow another short communication upon this subject, because were the controversy to close at this point, I conceive that an injustice, almost grotesque, would be done to Mr. Engleheart.

I am wholly prepossessed in favour of anything emanating from Mr. Ewbank on matters horticultural, and though I have felt bound to agree generally in what Mr. Engleheart has written upon this matter, especially with his last letter, I should not have sought to add a word, but that my senses, both of justice and of logic, are "shocked" by the of course unintentional, but complete misrepresentation of the question at issue, impliedly conveyed, as it seems to me, by Mr. Ewbank's letter (appearing in your issue of January 28).

The case seems to me very simple indeed, and stands thus, as anyone reading the correspondence with you may see, but as, I have no doubt, Mr. Ewbank has, in material part, forgotten.

Mr. Engleheart described as being purple a flower which is admittedly violet. Was he wrong, as Mr. Ewbank originally maintained with great vigour that he was? *This was and is the issue between them in the matter.*

Yet no one can read Mr. Ewbank's letter of the 28th ult. without concluding, as indeed he evidently now believes, that the question was and is something completely different, as, for instance, whether the word has not acquired a second and "more specific" as well as a general meaning, which is a question wholly subsidiary and incidental.

It is impossible to avoid pointing out that Mr. Ewbank now admits that the word has the more general meaning in which Mr. Engleheart used it, though he claims (let us for argument's sake presume that he rightly claims) that it has a secondary and more restricted one.

But if a word has two meanings, surely the man is not wrong who uses it in one of them, and this *à fortiori*, if he uses it in that one of the two which is most general and undisputed. And this becomes none the less true if it be admitted that another man be equally right in using it in the second and disputed sense. Thus, as it seems clear to me, Mr. Ewbank now admits that his original "indictment" against Mr. Engleheart's English fails.

I have been watching in wonderment whether anyone else in the world, even encouraged by Mr. Ewbank's great authority, would be willing to play junior to him in supporting it. I collect that Canon Ellacombe would not do so. But what might be done by Mr. Ewbank's laconic and anonymous friend if (as may charitably be doubted) he deliberately wrote for publication the note with which Mr. Ewbank's letter ends, it is impossible—and if possible would be distasteful—to surmise. I cannot conceive that Mr. Ewbank himself would have thought it fair or safe, as his sole contribution to the controversy, to denounce *ex cathedra* as a "fad," even if or while he doubted its truth, Mr. Engleheart's "notion" that any violet hue is without inaccuracy called purple. I am quite certain myself that notion is shared by the enormous majority of educated persons.

The matter is perhaps well enough ended by the practical abandonment of the original complaint. But it is—or would be—a little hard that, this abandonment notwithstanding, the last utterances in the matter should be the publication of opinions from two eminent authorities, given *ex parte* upon another issue, but taken and tendered, albeit with evident *bona fides*, as evidence upon the real one.—H. SELFE LEONARD, *Hitherbury, Guildford*.

—Allow me to suggest the following as a solution of this question, viz., purple is a generic

title; but we have picked out all the pretty and glossy shades and given them specific names, as mauve, heliotrope, violet, plum, &c., and thus purple, properly generic, has been left to specify all the unspecified ugliness.—W. SHIRLEY.

In justice to one who for a dozen or more years has been helped to much knowledge from friendly correspondence in THE GARDEN you will, I am sure, allow me a brief reply to Mr. Ewbank's quite unexpected letter of Jan. 28—unexpected, because in print and in a communication to myself he had said he would "under any circumstances" not continue the subject. Nor was it my own intention to write again had I not been accused of a "love of controversy." I must feel some diffidence in entering upon any discussion, however interesting, in your paper, unless you will kindly let me say, as I may truthfully, that I am fond of controversy only in this sense—that I am a believer in the ancient Socratic method of discussion as the best way of eliciting and imparting knowledge.

As to any personal feeling, let me assure Mr. Ewbank that to me he has been and is simply X, an unpersonal quantity, who touched upon a topic in which Y, myself, had long taken interest—a topic, if X prefers that more graceful expression, which is "a fad" of Y's.

Critique sua in arte credendum. I propose, not at present, but later on, with your permission, to meet X's authorities with the opinions of some of those whose profession it has been to make the science of colour a special study.

Meanwhile, I will say briefly that I do not feel duly crushed by the observations of the quoted Fellow of the Royal Society. Indeed, my humility is less than that of the preacher who is recorded to have begun his sermon with "Paul says, and I partly agree with him." I cannot agree at all with the F.R.S. He violates the elements of logic, which perhaps is not his speciality. My denial that a certain class of words cannot be used both generically and specifically is not a denial that any words can be thus used. And the instanced double employment of a term in scientific classification is altogether apart from the ordinary usages of language of which alone I was speaking. Moreover, in classification the term is repeated, specifically, in juxtaposition with its generic use; the analogue is that we should call a particular shade "purple purple." I fail to find in Nicholson (whom I by no means admit to be an authority in the accurate use of colour terms) mention of a really specific use of purple. Why does he need, on the F.R.S.'s own admission, to qualify purple by the additional adjective "bright" when he wishes to indicate a specific use of purple? Where does he use purple alone, meaning a particular variety of purple?

As to the specialisation of colour, both X and his supporter, the F.R.S., fail to perceive a logical and necessary distinction. It is perfectly true, in one sense, to assert that purple has become specialised. The subtle varieties of colour connoted by and included under that term have become distinguished, separated, named; this is specialisation. But for the generic term, the word "purple" itself to become specialised is another thing altogether. It has not become, and by the immutable laws of thought and language it never can become specialised, but must retain its exclusively generic signification. When the word purple is spoken or written it brings to the mind an image of violet, magenta, mauve, and an endless variety of kinds of purple, separately or collectively. It can never bring an image of one special variety of purple only and exclusively. To maintain that it can and does still seems to me "a confusion of both thought and language."—G. H. ENGLEHEART.

Winter-blooming Galanthus.—I am sending a portion of plant and flower of a winter-blooming Snowdrop imported by me from Albania, and which I have had in cultivation here for the last two years. It has been blooming outside since the third week of November, and save the protection afforded by the hedge, at the foot of which the bulbs have been planted since August, the plants

did not receive any protection whatever since that time. The severe frost which we lately experienced here (5° Fahr.) laid the plants quite flat down to the ground; they have been battered by every possible kind of rough and bad weather, but, nevertheless, they look as fresh and happy as they did a month ago. A peculiarity of the autumn and winter-flowering Snowdrops is the whitish, glaucous line running down the centre of the leaves. Flowering at the very dullest season of the year and evidently being of a very hardy and vigorous constitution, this Snowdrop, the specific name of which I soon hope to ascertain, is certainly one of the most valuable of the little group of autumnal and winter-blooming *Galanthuses*.—C. G. VAN TUBERGEN, JUNR.

STOVE AND GREENHOUSE.

DOUBLE-FLOWERED FUCHSIAS.

THOUGH opinions may differ as to whether single or double-flowered Fuchsias are the more beautiful, there can be no doubt whatever that the double flowers are admired by many, and the demand for them is, I think, greater than for the single forms; consequently among the new varieties sent out within the last few years there is a preponderance of double-flowered kinds. Some of the earlier doubles were rather apt to run up tall, and were therefore not so well suited for growing in the shape of little bushes as many of the single ones; but this cannot now be urged against them, as the accompanying illustration of Frau Emma Topfer will show. Few classes of plants lend themselves to so many different modes of treatment as the Fuchsia; for instance, they may be grown as bushes, pyramids or standards, employed for covering roofs and furnishing pillars, or for beds in the open ground. For all these varied purposes suitable varieties with double blossoms are to be found among the numerous forms now in cultivation. These double-flowered Fuchsias are not so popular with the market grower nor for exhibition as the single forms, for, owing to the blooms being much heavier, they are far more liable to drop when shifted about than those of the single-flowered varieties are. In making a selection of the best double-flowered Fuchsias, I should be inclined to give a place to the following with light-coloured corollas:—

FRAU EMMA TOPFER, a free-growing, freely-branched variety, with a very large corolla, of a kind of pinkish white, deeper towards the base of the petals. The sepals of this are of coral-red, and, in common with many large-flowered varieties, they do not appear of sufficient size for the huge corolla. The blooms of

MISS LUCY FINNIS are something in the way of those of the last, except that the corolla is pure white and the plant is not so free in growth. This when first sent out (about 16 or 17 years ago, I think) attracted a large amount of attention. It makes a good pot plant, but as the branches are weak and the flowers heavy, ample support must be afforded them.

MME. JULES CHRETIEN forms a fine large specimen and is suited for furnishing a pillar, as it grows quickly, while the flowers are bold and effective. The corolla is large and pure white, and the sepals are more conspicuous than in either of the preceding.

MOLESWORTH is a good variety for any purpose, and one that has become popular with our market growers. The corolla is large and pure white, while the bright coloured sepals are of a proportionate size and reflex in a very pleasing manner.

BUFFON, a somewhat upright-growing variety, is noteworthy from the peculiar pinkish-tinged

corolla. The last variety to mention of those with white corollas is

DUCHESS OF EDINBURGH. Of this I have had but a limited experience, but still sufficient to lead one to think it will turn out one of the very best of this section. It was raised by Mr. George Rundle, so well known in connection with the Fuchsia, and was announced as a cross between Molesworth and Mrs. E. G. Hill (one of Lemoine's varieties). At all events the new-comer, for it was only sent out last year, seems full of promise. It is a large bold flower, while the petals are unusually thick and wax-like.

Of dark-flowered varieties there is a great number, many of which differ in little else but name from each other, though of course there are some very distinct forms:—

AVALANCHE, which was sent out about twenty years ago, is still one of the best, the habit being good, while the flowers are freely borne.

especially noteworthy from the corolla being of a very distinct lilac-mauve tint. We have had two or three of this class lately from the Continent, another being

OCTAVIE FEUILLET, a good deal like the last, but with more of a rose tinge in the corolla.

CHAMPION OF THE WORLD, a gigantic flowered variety, whose massive corolla is of an intense dark purple. This does not bloom so freely as many others, and the flower-stalk is of unusual length, so that it is useless for blooming in a small state, but as a pillar plant in the conservatory or in some such a position it will often prove to be one of the most striking of all Fuchsias. This variety is by no means new, as it received a certificate from the Royal Horticultural Society in 1875, but it is now not much grown. About twenty-five years ago a variety was sent out under the name of Norfolk Giant, that attracted a good deal of attention from the size of its flowers but it was



Double-flowered Fuchsia Frau Emma Topfer. Engraved from a photograph sent by Miss Hélène, Hampstead, N.

PHENOMENAL flowers profusely when small, yet the blooms are with one or two exceptions among the largest of all Fuchsias. The corolla of this is of a deep violet-purple colour, marked with rosy crimson at the base. It is a good variety for growing in the shape of little bushes.

NOUVEAU MASTODONTE has a large purple corolla, flaked more or less with red. This latter feature renders it when well marked very attractive.

COMTE LEON TOLSTOI is notable from the closely packed corolla being of a deep bluish purple, without markings of any kind. The habit of the plant too is very good.

LA FRANCE has large well-reflexed sepals and a distinct tinted corolla, which has been described as blue, and though a long way from that colour it is a very distinct shade.

SIR GARNET WOLSELEY is a good variety for any purpose, with a large plum-coloured corolla.

GUSTAVE FLAUBERT, one of the newer French varieties, is of good habit, free-flowering, and

much inferior to Champion of the World, although from the many points of resemblance there is, I should think, but little doubt that this last was a seedling from the older one.

Of light-flowered Fuchsias, that is to say those with white tube and sepals and coloured corolla, there are, as far as I am aware, none with double blossoms. The Fuchsia is a good illustration of the varying fashions in flowers, for from 1880 to the present time only three garden varieties have been noticed by the Royal Horticultural Society, viz., Mme. Galli Marie 1880, Mrs. Rundle 1883, and Dorothy Fry 1889, while in the ten years previous to that no less than forty-two varieties received certificates. H. P.

Begonia manicata.—This Begonia has long been grown in our gardens, and though the individual blooms are not particularly showy, it yet pos-

sesses many desirable features. The flowers are small and pink in colour, but they are very freely borne on large branching spikes, and this light arrangement of the inflorescence causes it to be a very valuable plant for grouping. The large, bright, shining green leaves are very ornamental, while a rather singular appearance is presented by peculiar fleshy scale-like hairs of a brownish colour that are freely borne on the undersides of the leaves and also on the leaf-stalks. This Begonia is well worth growing for the sake of its foliage alone, but the fact that it produces a great number of blossoms during the first three months of the year is also greatly in its favour. There is a variegated form in which the leaves are marked with creamy blotches, as in *Farfugium grande*, but this is rarely seen in good condition, as the plant shows a great tendency to revert to the normal green-leaved form.—H. P.

SOCIETIES AND EXHIBITIONS.

THE GARDENERS' ORPHAN FUND.

THE annual general meeting of subscribers to the above fund took place at the Cannon Street Hotel on the 3rd inst., Dr. M. T. Masters, F.R.S., one of the vice-presidents, occupying the chair, the attendance being very small. The notice convening the meeting and the minutes of the last annual meeting having been read, the report of the committee was then submitted. This set forth the fact of the close of another successful financial year, and bore testimony to the continued prosperity of the charity. During the past year fifty children have been receiving the benefits of the fund, and the committee recommended the election of eight that day, bringing the roll up to fifty-eight. Two of the children who have hitherto enjoyed the benefit of the fund, having attained the age of fourteen years, have, in accordance with rule xiii., ceased to be a charge upon it. A slight falling off occurs in the annual subscriptions, which the committee make known with great regret, as they form the chief source of income. A strong appeal is made by the committee for more earnest support from the gardening community generally, in whose interests the fund was established and is maintained. The cash statement for the year ending December 31 last showed that the receipts from general subscriptions amounted to £460 5s.; general donations, £294 9s. 3d.; thank-offering from Mr. and Mrs. H. J. Veitch, £500; receipts from annual dinner, £998 4s. 10d.; general card collection, £134 3s. 1d.; advertisements in annual report, £31 16s.; from collecting boxes, £17 17s. 6d. These amounts, with the balance in hand of £1229 19s. 1d. at the beginning of the year, and dividends on stock and interest on deposits—£143 17s. 7d.—brought the receipt side up to £3810 12s. 4d. On the expenditure side, the sum of £625 17s. 6d. had been paid as allowances to orphans; working expenses, £134 9s. 8d.; cost of annual dinner, £167 10s. 2d.; printing, &c., £26 13s. The sum of £1945 13s. 6d. had been paid for £2014 worth of 2½ consols, and the balance on hand, including a deposit at the bankers, amounts to £867 2s. 10d.

In moving the adoption of the report and cash statement the chairman congratulated the meeting upon the satisfactory character of the report, but said there were one or two points calling for comment. The fact of the Princess of Wales having become patroness of the fund is very gratifying, and so is the special donation from Mr. and Mrs. Harry Veitch. That fifty children should be enjoying the benefit of the fund in so short a time after its establishment is very gratifying, but did the fund receive adequate support from the gardening community, many more children should be upon it. It is to be regretted there should be a slight falling off in the amount of annual subscriptions, and it would be the business of the committee to cover that deficiency by increasing the number of subscribers. It is not creditable to the gardeners of the United Kingdom such a paragraph should

appear in the report. Mr. William Marshall, in supporting the motion, alluded to the cash statement as decidedly of a congratulatory character, though it contained one weak point—the decline in general subscriptions. It is a matter for surprise the gardeners of the country do not take more interest in a fund established solely in their interests. The annual dinner was a great success, and the cost incurred was repaid over and over again. The committee had now over £6500 invested in stock, and with a balance of £300 on deposit at their bankers, their financial position was eminently satisfactory. The motion for the adoption of the report and cash statement was then put and carried unanimously. On the motion of Mr. Harry Turner seconded by Mr. John Wills, Mr. T. B. Haywood was unanimously re-elected treasurer. On the motion of Mr. A. W. G. Weeks, seconded by Mr. B. Wynne, Mr. J. Fraser was re-elected auditor. Mr. A. Outram proposed the re-election of the retiring members of the committee: Messrs. Head, Laing Nicholson, Poupert, Smith, Walker, and H. Turner. This was seconded by Mr. A. J. Brown, who deplored the fact that many gardeners took large sums of money in the form of prizes, but did not support the fund. In the district in which he resided (Chertsey) there were only about one or two who subscribed. If they would inquire into the cases of children placed upon the fund as he had done they would see what a good and praiseworthy work was being carried out by means of the institution they were met that day to support. The chairman moved the re-election as secretary of Mr. A. F. Barron, who had the full confidence of the gardening community, and was pre-eminently the man to fill the position of secretary to the fund. This was seconded by Mr. William Marshall, who said he had worked with Mr. Barron for two years, and he felt it was impossible to say too much in praise of the manner in which he carried out the duties of his office; he had become a necessity to the fund, and it would be very difficult indeed to replace him. On the motion of Mr. J. Wright, seconded by Mr. G. W. Cummins, Sir James Whitehead, Bt., M.P., and Sir Edwin Saunders, President of the National Chrysanthemum Society, were added to the list of vice-presidents. Mr. W. Marshall proposed and Mr. H. Turner seconded a proposition that Messrs. R. Dean, Poupert, Weeks, and Wynne act as scrutineers for the election. The meeting then adjourned until 4 p.m., when Mr. William Marshall occupied the chair, and the result of the election was declared to be in favour of Frederick Price, 445 votes; Nellie Ede, 254 votes; Ada Beddoes, 228 votes; John Mitchell, 227 votes; Emily Kate Neve, 220 votes; Otto Kosbab, 217 votes; Philip Arthur Stevens, 216 votes; and Minnie Rapley, 195 votes.

One most noteworthy feature in connection with this fund is the investments of the year, these amounting in the aggregate to nearly £2000. The total investments now stand at £6570 6s. 10d., with £300 on deposit at bankers. These investments are excellent, and speak well for the progress of the fund since its commencement; but the sooner they stand at £10,000 the better will it be for the orphans of our gardeners. I regret to see by the report that there is a slight falling off in the annual subscriptions. This should not be, and when the gardeners of the United Kingdom see this fact notified, they should for their own sake endeavour to support such a deserving charity to the utmost of their ability. Those who make it an excuse that one guinea per annum is too much to subscribe to the Gardeners' Royal Benevolent Institution (a poor excuse, it is true) cannot, in the case of the Orphan Fund, find any such ground to stand upon. Subscriptions are as low as 5s. per annum—only a little more than 1d. per week. One hundred such subscriptions are better than one-fourth of the number at £1.

Turning to the election of orphans on the present occasion, there is a lesson to be learned. The most successful workers for the children are those who displayed the most energy in seeking for votes. Five out of six who appeal for the first time are elected, whilst the sixth stands well upon

the list. Of the nine who appeal the second time three are elected. Regarding the six who are unsuccessful, I fear there was not the amount of energy shown that should have been. I should have liked to have seen a dozen at least elected, rather than eight; but it could not be, whilst so many gardeners are so apathetic in regard to rendering assistance. ONE INTERESTED.

ANTHRACITE COAL AND GARDEN BOILERS.

THERE must be something wrong with the setting of the boilers if this coal will not burn, as "G. C. L." at page 98 says. More draught is needed to burn this coal than any other, and, in my opinion, it is by far the most economical fuel that can be had. Where many persons make a mistake in burning anthracite is in always poking the fire. The bars ought to be thoroughly cleared of ashes and clinkers by allowing the fire to burn low in the early part of the afternoon when a sharp frost is threatened, for instance. If a good quantity of coal is thrown on, the fire should not be again touched until more is required. Even then, nothing beyond thrusting the poker right to the far end of the furnace next to the bars, to free them and admit the air, and levelling the unburnt fuel in the furnace is required. If the coal is broken into pieces about double the size of a cricket-ball that is all that is required. The small coal—of which there is but little—should be burnt along with the lumps, as alone it is liable to "cake," owing to the want of a free air passage. I find 2 tons of anthracite equal to 3 tons of coke. Three years ago I had a remarkable and convincing proof of the advantage of anthracite over coke. A new saddle boiler with water-way back was put in to heat parts of the dwelling-house. The furnace would not hold sufficient coke to admit of the damper being left far enough out to maintain a certain heat during the night, even when attended to at 9 p.m. In the morning the fire was burnt out and the heat correspondingly low. Now, with the aid of anthracite, the fire can be made up at 5 p.m., and at 7 o'clock the next morning there will be a good fire and the heat good. This, in my case, is most conclusive as to the value of anthracite as fuel. Another point is its smokeless character. Where the garden is situated near the dwelling-house this is a boon. I have tried smokeless steam coal, but do not find it so lasting or so productive of heat as anthracite. I am at a loss to understand why "G. C. L." should think it necessary to remove the boilers. He cannot have the right kind of anthracite. That from the South Wales coal-fields is considered the best. The further away the boilers are from their work, the less efficiently will they act. Does "G. C. L." burn refuse from the house or elsewhere with the coal? If so, some smoke must of necessity come from that.—E. M.

—I should strongly advise "G. C. L." (p. 98) to have his boilers reset where they are if there is something amiss with them instead of taking them fifty yards away, as this means, even with one flow and return service pipe, heating 300 feet of pipe to no practical purpose, besides the trouble involved if the underground pipes go wrong while additional time and fire with boilers so far away from their work are necessary to get heat up quickly. What are the boilers? Trentham or one of the many types of saddle? I have neither experienced nor seen any difficulty in dealing with anthracite with these; indeed the chief aim is, as a rule, to restrict draught sufficiently to cause a steady fire. It is perhaps a trifle presumptuous to hazard a decided opinion without knowing all the circumstances, but it seems to me a question of altering existing arrangements so as to make the boilers burn the coal in their present quarters. Anthracite is a grand fuel in the hands of a careful stoker, and much less fire is required with this than with coke to keep up a strong heat. The natural inference to be drawn from this is that anyone intending to burn nothing but anthracite should never go in for very large boilers of the

plain saddle type; thus for 1500 feet of pipe a Chatsworth or Trentham 4 feet by 18 inches will be much better for anthracite than a plain saddle 5 feet by 2 feet. The question of the relative cost of this coal and coke is simply one of locality; at a level figure the balance would be entirely on the side of coal, but in many cases extra cost compels an opposite conclusion. Anthracite costs us with cartage a little over 25s. per ton, and coke is often delivered at 16s. (per ton, not chaldron). No one at these figures could maintain the coal was the cheaper fuel of the two, and unless delivered in cobble form the labour of breaking is very considerable.—E. BURRELL, *Claremont*.

NOTES OF THE WEEK.

Two early shrubs.—Now that berries are nearly all gone, and very little blossom of any sort as yet to be seen, it may be well to note the enlivening effect of two pretty shrubs in bloom in the grove during the last week of January—*Hamelis arborea* and the white *Daphne Mezereum*.—M. A. R., *Liphook*.

Lent Lily from Oakwood.—I bring you a truss of a Lent Hellebore I had from M. Fröbel, of Zurich; it has been in bloom for about a week. He named it *Helleborus caucasicus giganteus*. I think both the colour of the flower and shape of the truss very pretty. It blooms earlier than most of its kind.—G. F. WILSON.

The tree form of the common Ivy named *arborescens* is conspicuous in the winter season for its profusion of black berries, which add interest to the wealth of rich green leaves. We saw recently a large group of plants quite a winter picture, and one was struck with its richness and beauty. The growth of the Ivy is strong and bushy, and a fine set off to the flowers of the Lily or Galtonia, bulbs that may be planted between the Ivy masses with excellent effect.

Iberis stylosa.—This, I believe, is the dwarfest and earliest of all the Iberises. In Exeter it has now been in bloom for more than a fortnight. The flowers, pale blue with just a tinge of lilac, are less than 3 inches above the soil, resting on a neat cushion of densely crowded leaves. It has been planted out for two years, and there can be no doubt about its being perfectly hardy. It was planted in stony soil on a slope with a southern aspect which it seems to enjoy.—F. W. M.

The curatorship at Glasgow.—We are well pleased to hear that Mr. Dewar, of the Royal Gardens, Kew, and who is well known to many readers of THE GARDEN, has been appointed to the management of the Botanic Gardens, Glasgow. Mr. Dewar's good knowledge of hardy plants will, we hope, have full scope in his new charge, where, if we remember rightly, the soil is favourable. Many of the best articles on hardy flowers in THE GARDEN have been written by him, and we hope will long continue to be.

Fremontia californica.—The notes that have appeared on this shrub point to its being somewhat rare. I saw one with several fine flowers upon it a few years ago in Major Gaisford's interesting garden at Offington, Worthing. That was towards autumn, and I was informed that it had been flowering for months. The *Lapageria* was flowering on the wall outside at the same time, and this indicates how favourably situated the garden is. The *Fremontia* was a young plant, but if still alive no doubt it has made considerable progress since I saw it.—A. H.

Hedera acuta.—The varied forms of Ivy are exceedingly numerous, but one of the most distinct that we have seen for a long time is that which bears the above name. The plant in question was growing upon the wall in Messrs. Wood's nursery at Maresfield, and there was more of it in pots. It belongs to the large-leaved kinds of which *H. dentata* is a good example, and, like this species, it has large simple green leaves, but their length is much greater than their breadth, and they taper sharply towards the point. It is doubtless a good kind with a truly descriptive name.

Apple Annie Elizabeth.—At page 85 of THE GARDEN, E. Burrell asks the opinion of growers on the above-named Apple. I can speak very favourably of it as grown here, where many varieties that do well in other places fail to succeed. The tree is a good grower, clean, and free from canker, a disease which we suffer from much, the climate being so moist and changeable. Like many other varieties, it does not produce much small spray, so does not want much pruning, but grows upright. Its fruits in a young state and is a constant cropper, but rather thin, this being an advantage, as the fruit is very large, heavy, and keeps well.—W. O., *Fota*.

Grape Gros Maroc.—I send you a small bunch of Gros Maroc Grape, which I think has kept well, for with some growers it does not keep nearly so long. The Vine was grafted on the Golden Queen, the berries always taking on a splendid bloom, which I do not get on Gros Maroc planted in another house. The two look quite distinct when the fruit is ripening. Perhaps you will kindly give me your opinion.—J. F. WILKINSON.

* * * The flavour was quite gone, and worse than gone, as it was most unpleasant to the taste. We cannot see any advantage in keeping this Grape up to the present time. It is really a midseason Grape.—ED.

Peaches from the Cape.—"J. C. B.," in your issue of the 4th inst., states, "It is the opinion of the Covent Garden salesmen that Peaches from the Cape will bring prices down to so low a point that Peach-growing in this country will soon become extinct." I do not know who his informant may be, but I should like to ask him this question: How is it possible for any produce reaching this country during the first three months of the year to affect like produce grown in this country during the summer and autumn months, viz., May to October? It does not appear generally known that nearly all the fruit that has hitherto reached us from the Cape has belonged to the clingstones, therefore could not possibly compete with the varieties generally grown here, even if received at the same time. Size also would lower their value.—J. WEBBER, *Covent Garden Market*.

The Rose controversy.—I notice that you have, in common with your contemporaries of the garden press, received and published an attack made on me in a circular letter written by the Rev. J. H. Pemberton, which is called a "friendly criticism." This letter is apparently written with the intention of trying to show my unfitness to give opinions on the subject which is now being discussed in the gardening papers, and also, according to Mr. Pemberton, my ignorance of Rose culture. As I have replied fully to Mr. Pemberton in one of your contemporaries, I will merely say here, that as Mr. Pemberton's whole argument is based on erroneous premises, the main part of his reasoning is thereby valueless. Mr. Pemberton has boldly, and he must pardon me for saying ignorantly, stated that as, according to him, I only joined the National Rose Society in 1889, I have no lengthened experience. I might argue this point, as I cannot agree with him in the assumption of anyone requiring to join our society to be an expert Rose grower, but the unfortunate part of Mr. Pemberton's argument is that it is wholly untrue. I joined the N.R.S. in 1878, and have been a grower of Roses since 1877. I think I need not further trouble you with a reply to the rest of his "friendly criticism."—CHARLES J. GRAHAM.

The weather in West Herts.—Tuesday last proved the warmest day that we have had here since the middle of November, the temperature in the shade rising to 54°. On the other hand, several nights lately have been very cold, and during Saturday night a thermometer exposed on the lawn indicated 15° of frost. On Thursday, the 2nd inst., the wind was higher than at any time for a twelvemonth (direction W.S.W.), showing how calm the present winter must have been, as on that occasion

the wind at no time exceeded a moderate gale. Since the beginning of the month, seventeen hours of clear sunshine have been recorded. The first fertile flowers appeared on a sheltered bush of the common Hazel on the 5th inst., or ten days earlier than last year, and twelve days earlier than in 1891.—E. M., *Berkhamsted*.

Open spaces.—At the monthly meeting of the Metropolitan Public Gardens Association, 83, Lancaster Gate, W., Sir William Vincent, vice-chairman, presiding, it was decided to expend £20 in preparing maps and plans illustrating the work of the association at the forthcoming exhibition at Chicago. A grant of £100 from the Clothworkers' Company was announced. In accordance with plans and estimates presented, sums of £130 and £380 were voted for the laying out of an open space in Bermondsey and St. Thomas's Square, Hackney, and £100 towards the acquisition of five acres, formerly part of Wandsworth Common. Letters were read from the Tottenham Local Board accepting seats for High Street, Tottenham, and from Mr. Wilson Noble, M.P., sending £200 for tree-planting in thoroughfares in "London over the border," otherwise Barking. The secretary stated that only about £700 was now required to complete the purchase-money of the Hilly Fields, Brockley, 45 acres in extent. It was decided to apply for the occasional opening to the public of the Hon. Artillery Company's drill ground in the City Road, and to write to the First Commissioner of Works respecting the possibly irreparable injury which might be caused to Kensington Gardens by the proposed underground railway. It was also agreed to endeavour to secure some amendment to the Disused Burial Grounds Act and the London County Council General Powers Bill in order to afford additional protection to open spaces.

Names of plants.—*D. Hamill*.—1, *Aphelandra Roezli*; 2, *A. Liboniana*; 3, *Ruellia macrantha*.—*J. T.*—1, *Oncidium cucullatum macrochilum*; 2, *O. Phalaenopsis*; both cool.—*T. Marchant*.—1, *Cypripedium Bullenianum*; 2, *C. insigne nitens*; 3, *Dendrobium Ainsworthii*.—*Constant Reader*.—*Cattleya Percivaliana*.—*J. Buller*.—Both forms of *Odontoglossum maculatum*.—*J. Birkenhead*.—*Adiantum fragile*.—*F. C. W.*—1, *Laelia rubescens*; 2, *L. harpophylla*; 3, *Cattleya Trianae*, ordinary form.—*F. D. L. S.*—*Fittonia rubro-nervia*.—*E. Castle*.—We cannot undertake to name *Crotons*; Orchids next week.—*W. Harding*.—1, next week; 2, *Goldfussia isophylla*.

Names of fruit.—*T. Colliston, Steyne, Bembridge, I.W.*—1, Lord Derby; 2, Brahmot Bellefleur; 1, Court of Wick.—*Oakenhead & Co.*—1, Northern Greening; 2, not recognised.—*Anon.*—Forelle or Trout Pear.

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No. 1109. SATURDAY, February 18, 1893. Vol. XLIII.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare.*

ORCHARD AND FRUIT GARDEN.

PHASES OF PEACH "YELLOWs."

WHEN the tips of young Peach and Nectarine shoots do not assume a rich green colour in due course, but are rather of a sickly yellow hue, the tree is said to be affected by the "yellows." Unless somewhat drastic remedies are applied the trees go from bad to worse, and are soon unworthy of the space they occupy. Whether these yellows are curable or not is a moot point, and if we accept the view of American observers with whom I have had a discussion on the matter, they are not, or at any rate not in all cases. In my opinion, however, very much depends upon what causes the disease, if such it may be termed, and also upon the time when proper remedial measures are first attempted. I repeat proper measures, as I have proved that what answers well in one case fails completely in another. In most cases the sickly state of the trees is due to a deficiency of something that goes to make a soil suitable for the growth of Peach and Nectarine trees. Restore these constituents, and if the trees are not already half dead, there will soon be a welcome change in their health and appearance. In America the trees rapidly attain a highly productive size, are cropped for a few years to their full extent, and are rooted out directly they give signs, in the shape of the yellows, of complete exhaustion. Labour is too scarce and the idea too slow for any attempt to be made in the way of renovating the greatly impoverished soil, but in this country circumstances are very different. We prefer to keep our trees in a productive state for as many years as possible, and, as a rule, succeed in doing so three times as long as they do in the Peach-growing States in America.

The remedy most often recommended and very generally applied for "yellows" is wholly or partially lifting the roots of the affected trees. It is the surface soil that absorbs most of the food supplied to the borders, and the further down the roots descend the worse they fare. If the bulk of the roots is deeply located, the foliage soon indicates that something is required more than reaches it, the "yellows" being the usual outcome. There are chemicals which, if they could be placed within reach of the roots, would to a certain extent correct the unhealthy top-growth; but the first proceeding ought in all cases to be root-lifting. Wholly lifting and raising the collar well above the level are sometimes most beneficial, this being especially the case when the trees had previously sunk several inches below the level. Bringing up the roots to near the surface and relaying them in quite fresh compost is not unfrequently a perfect remedy for the yellows, but not always. Soils vary so considerably in their composition, that one very important constituent may be either missing or not strong enough, unless acted upon by some other element, to restore the proper balance. I have lifted trees and replanted them in quite fresh compost, and yet not cured them of the "yellows." A tree of Peach Bellegarde in an early house was partially lifted in the autumn of 1889 and to a cer-

tain extent restored to better health. Being regarded as a supernumerary, it was heavily cropped the following summer, and still more heavily in 1891. In spite of good attention in the way of supplying water and liquid manure, the yellowness of the leaves became only too apparent, and last February, when the leafy growth commenced, this was as yellow as the tips of properly blanched lily-white Seakale. Curiously enough, a large tree of Peach A Bec on one side of it and Nectarine Lord Napier on the other were in a most satisfactory condition, or as green as could be desired. So bad was the condition of the tree, that I decided to either kill or cure it. A 12-inch potful of newly-slaked lime was spread over an area of about 7 feet by 5 feet—this being the space principally occupied by the roots—and duly forked into the surface, a good soaking of soft water following. The effect was almost magical. Before the leaves were fully grown they became beautifully green in colour, the tree also making good growth, as well as ripening an extra heavy crop of fruit. Most probably the lime (made from magnesian limestone rock), acting chemically on the rather strong loamy soil, liberated potash previously locked up therein, and these elements, that is to say, potash, lime and magnesia, supplied the missing links. If there is little or no chlorophyll in the leaves they cannot possibly perform their functions properly, and unless the deficiency in the soil is made good or corrected in some way, the tree is bound to gradually dwindle away. Where, therefore, newly-started trees present a somewhat sickly appearance from the first, and it is known that lime has not reached the soil about the roots for two or three years or longer, the effects of a good dressing, well washed in, should be tried at once in preference to either tampering with chemicals about which not much is known or, worse still, doing nothing at all. If lime does little or no good, its employment in moderation will certainly not be harmful, unless it comes into contact with quite fresh farmyard manure, soot, or chemical manures, in which case it might generate ammonia to such an extent as to be injurious to the young foliage overhead.

A light attack of the yellows may in the first place be due to poverty at the roots, and if the soil of the border is naturally very poor, a dressing of lime would perhaps only aggravate the evil—that is to say, make it after a short time still more impoverished. The remedy in this case is plain enough, and consists in feeding at the roots more frequently than previously. Gardeners seem to be afraid, or else think it wasteful, to use liquid manure for the trees either during the winter or just prior to their starting into active growth. More often than not they wait till the trees are well advanced in growth or till the greatest strain is put upon them by the fruit; whereas they would do well to commence very much earlier. Exhausted borders should at least have a soaking of moderately strong liquid drainings from a mixed farmyard or that in which urine abounds, the roots being less likely to be injured before they are active than afterwards. The presence of ammonia—that is to say nitrogen—in the soil in appreciable quantities favours a stronger top-growth than would have been the case if at all deficient, and the winter supplies being supplemented by spring applications of liquid manure, the healthy start is well sustained, better crops of fruit resulting as a matter of course. All are not in a position to use farmyard liquid manure or even the drainings from horse stables, but that is no excuse

for starving Peach and Nectarine trees into the yellows. Perfect chemical manures are advertised and supplied at comparatively cheap rates in when the trees are started and subsequently now-a-days, and if these are freely applied and washed in quantity, as advised by the vendors, there will be no marked absence of chlorophyll in the leaves, unless red spider is allowed to gain the mastery. Both native and Peruvian guano are very good fertilisers for Peach borders, and so also are fish-bone manure and such like.

There is yet another cause of the trees presenting a sickly yellow appearance, this being none other than a manure-sick border. It once fell to my lot to take charge of a large Peach house that had for several winters previously been heavily mulched with solid manure from a mixed farmyard. Drainings from the same yard, and which were very strong, had also been very frequently and liberally used, with the consequence that the naturally retentive loam of which the border was principally composed had become poisoned by manure. The removal of some of the much-trodden soil down to the surface roots is desirable in most cases where the trees are large and bear heavy crops annually, a moderately rich compost being substituted. If instead of this mixture of loam and solid manure a good thickness of farmyard manure is used, this is apt to keep the border too cold as well as rich, as it effectually excludes warmth and air, and is about the worst form of mulching that can be used. The remedy, as I soon found, for over-richness of borders is a dressing of lime and a change of treatment generally. Apply this at once at the rate of a 5-inch potful to every square yard of border, lightly fork it in, and then give a soaking of soft water. In the worst cases this application should be repeated two or three seasons in succession, and then cease for about three years.

W. IGGULDEN.

Seedling Gooseberries—A most unusual feature in any garden is found in seedling Gooseberry bushes. I saw a batch of about 100 of these, though yet not much beyond yearlings, in the kitchen garden at Titsey Park. I learned from Mr. J. Dean, the gardener, that he saved the seed indiscriminately from a number of varieties, dried and matured it, then sowed it in the autumn of 1891 in pans. The seed lay dormant the whole of the winter, then began to germinate irregularly in the spring. After being hardened off in a cold frame the seedlings, carefully lifted, were dibbled out into the border where I saw them growing. One only had fruited this year, producing fruits of the Whitesmith character. Not a few show the character of one parent—the Red Warrington. Tied up to stakes the stems were clean, and had generally broken into side shoots at from 12 inches to 15 inches high. Most probably the bulk will fruit during the ensuing summer. It is very doubtful whether there will be material variation from the parent sorts, as to produce variation some intercrossing is needful, and most unlikely insects affect Gooseberry blossom to any appreciable extent, as it opens so very early in the spring. The fact that seedling Gooseberry bushes can be so easily raised may encourage some to try their hands at the more difficult task of intercrossing, although it is not easy to determine in what direction very much good can be accomplished. We have literally a wealth of good Gooseberries, but whilst flavour seems to be chiefly allied to smallness of fruits, very heavy croppers and large fruits are rather deficient. Such sorts as Lancashire Lad and Whinham's Industry may be intercrossed with advantage with Ironmonger or Champagne in the hope of securing in the former higher flavour, but then we may but get in return something allied to Red Warrington. This variety, however, is notorious for the excessive

number of its spines, and for that reason makes a capital fence plant. Still there is room for intelligent effort in the direction of raising more and, if possible, improved sorts of Gooseberries.—A. D.

Apples on chalk.—The experience of Apple culture on chalk which Mr. Molyneux has at Swanmore is of the utmost value to all in his district. He seems, however, to be in better state than Mr. J. Dean at Titsey Park, East Surrey, who is also growing Apples largely on a warm sheltered hill-side looking nearly due south, but has only the merest surface of soil, hardly more indeed than 9 inches, and on which it is naturally much more difficult to induce trees to grow than is the case in the rather deeper and stiffer soil at Swanmore. The bulk of the trees that constitute the large orchard at Titsey Park are standards on the Crab stock, for there is little fear here of growth becoming too gross on so thin a soil. Necessarily the trees were planted very shallow, indeed, originally almost level with the surface, but with time they have settled down materially. They have been planted from twelve to fifteen years, and generally are both clean and healthy. Very few indeed show evidences of canker, and those are such as will exhibit this disease in almost any soil. The after course of treatment, so far as circumstances will allow, for labour is distinctly at a discount, is to take advantage of hard weather to haul into the orchard a quantity of manure and to lay this thickly about the roots, so that it becomes during the summer a valuable mulch and also materially feeds the roots. As it decays and thus becomes incorporated with the soil, it encourages the roots to keep to the surface. Occasionally, too, accumulated heaps of garden refuse, road-sweepings and trimmings, &c., that have become decomposed are carted on to the ground and spread about. The fruit product is usually an excellent one, so far as quality is concerned, and abundant, though the Apples are not large. They, however, seem to keep well, perhaps because on this sunny slope so thoroughly matured.—A. D.

YOUNG WOOD ON OLD TREES.

THE article by "I. M. H." (p. 59) might be read by those who work on the close pruning system with a great deal of profit. I have held the opinion for some years, that the knife is as much a weapon for evil as for good in the hands of many who prune indiscriminately, and whose only object appears to be to keep the trees in shape and to prevent them from making any headway after they have reached a certain size. Nothing can be more opposed to Nature than the attempted restriction of trees to a small size by the use of the knife and by cutting away year after year all the young wood of the previous season's growth. The character of the young wood made after such severe pruning well shows this, for it protests annually against the treatment by making a great number of gross shoots only to be cut away again. But suppose these gross shoots are left to their entire length, what do we find? Not that they again grow to a similar length the succeeding year, but that they increase only a little, and their vigour is spent in throwing out fruit spurs all along the last year's wood, so that eventually these growths when fruiting can be well compared to "ropes of Onions," as your correspondent says. This giving the trees their heads has, too, a steadying effect on the over-production of useless shoots all along the branches, shoots that come out as regular thickets on a hard-pruned tree. Instead of these we get additional fruit-spurs. Nature, being satisfied by the freedom given at the ends of the branches, does not force so many of these useless young growths to form.

Though "I. M. H." did not point this out, I feel sure that this freedom of growth combined

with free root-action is a great antidote to canker. Canker, it is generally conceded, may be produced by a variety of causes, and I think I have ample proof for saying that over-pruning or over-restriction of root and branch, the latter especially, is one of the most frequent causes of this disease. I know at the present time many Apple trees that were badly cankered, though young, a few years ago, and now on the same trees there is scarcely a sign of canker, while in many cases the trees are more than double the size that they were five years ago. Since that time no digging has been done between them, and three times they have been allowed to "have their heads," and well they have paid for it. Even where it is necessary to restrict the size of the trees this should not be done with the knife, but by working the trees on dwarfing stocks and giving them a fair amount of freedom on these. Of course, it is necessary to use the knife more or less on all trees to preserve the balance and to prevent them from becoming too thick, or making their growths in the wrong direction, also for shortening and thinning old fruit-spurs, but beyond this or for inducing fruitfulness the knife is a failure.

J. C. TALLACK.

WALL FRUITS.

It is always a good plan to get nailing well in hand before Christmas, pending a spell of very sharp weather, for, however active and willing workmen may be, they can make little headway at the nailing or tying with the thermometer several degrees below freezing point. There is a very fair promise of fruit; Peaches and Nectarines, Plums and cordon Pears especially show plenty of buds, and given such fair promise, the fruit grower will not be sorry to get the weather rather on the cold side for another three weeks from now (Feb. 6), as a damp, close February is often answerable for an early plumping of bud and consequent expansion of flower. So far as Peaches and Nectarines are concerned, it is, I think, matter for congratulation that the very early ripening varieties are not proportionately early in the flowering; it seems rather strange that a sort ready by the middle of July should be contemporary in the expansion of bud with another that is not fit until the end of September. These two periods with the intervening time represent a long outdoor Peach season. With sufficient trees in variety, one can get an uninterrupted supply for two and a half months. Hale's Early is a capital Peach to succeed the first earlies and does well outdoors, but I cannot say as much for it inside. Here it is a bud-dropper, and there are few houses where it will not show more or less this objectionable characteristic, even when all other varieties in the same structure may never show any tendency to such a failing. Between the completion of nailing or tying and the time for covering up, it is well, especially on old walls, to keep a sharp look-out for red spider. Given a few sunny days this pest will be putting in an appearance, and should be promptly dislodged with a rather strong mixture of some insecticide vigorously applied with the garden engine, the operator receiving instructions to do the work thoroughly and give a regular drenching to all parts of both wood and wall. Dessert Cherries are also attacked some seasons with the same pest, and I can have a similar drenching before the covering goes up. Whilst on the subject of enemies, I may mention that wasps are already in the field, two having been killed. No quarter should be given these early visitors; all fruit growers suffer from their depredations in late summer and autumn. If fish netting is to be used as a spring protection, the stock already in hand can be overhauled at once and any mending done that may be necessary, for a spell of mild weather will mean a rapid bud opening of our earliest wall fruit, the Apricot. I like to give Apricots the benefit of a net or two if possible, for

covering with boughs is but a sorry makeshift, and unless one goes to a lot of trouble in providing uprights and crosspieces, a sudden and violent gale is apt, by bringing the branches into sharp contact with the trees, to damage the bloom as much as frost. We lost nearly all bloom that remained uncovered last year, except towards the top of the wall, where it was partially protected by the brick coping. If Plums are to be spring covered—and one is never sure of a crop unless this is done—it is a good plan to plant the best and most useful varieties as much as possible together. Early Prolific, a very useful Plum, a good type of Gage; Jefferson, Golden Drop, and Kirke's would certainly amply repay the little extra trouble and expense incurred through spring covering. The Pear is so valuable for dessert, that I should strongly advise it should receive prompt and effectual covering when there is the promise of plenty of fruit. This being the case at the present time, and our cordons only as yet reaching three parts of the way up the wall, I have, in order to economise our netting, fastened some stretches of board 3 inches by 1 inch to other pieces projecting from the wall just above the line of the top of the trees and standing out when finished some 4 inches from the same. By tacking the netting just above the board we thus get it to swing clear of the trees and save a considerable breadth of net which is not required so high as the coping when the upper portion of the wall is as yet unfurnished with trees. Dessert Cherries I always cover, they are a favourite fruit, and one consequently likes to make sure of a crop. In addition to the protection from frost provided by the netting it acts as an admirable shelter against the heavy storms of cold sleet we often get in the spring, and which prove disastrous to the tender bloom of the Cherry when this is quite exposed. If there is any American blight lurking about either on wall, bush, or pyramid trees it is a good plan to look over them before new growth begins. Many different mixtures are recommended for this pest, some composed of six or seven ingredients, but there is nothing simpler or more efficacious than paraffin, and I have known trees badly affected completely cured after the second application. Instances are quoted of the loss of trees through this same use of paraffin, but this arose probably from a careless use of the oil, working it in on old and young wood alike, and very likely soaking the buds; these although dormant would certainly not bear such treatment.

Claremont.

E. BURRELL.

Pear Bishop's Thumb.—We are not overstocked with Christmas Pears, and amongst others this Pear will be found to give satisfaction if always as good as with me, though it has the name of being only of second quality. No doubt it varies on different soils and is better in some seasons than in others, but I consider it one of the best, and can recommend it as profitable for a wall and sure to succeed where any Pear will grow. I have a tree covering the west end of a house against a public road. It is a certain cropper, although with a tendency to bear chiefly at the top or on the young growth. Most people in passing glance up to admire the crop, for in some seasons the Pears will hang over each other like thatch on a rick. This is not a tree that exhausts itself in bloom, which appears so thin that we imagine the crop must be light, but every flower seems to set. It is a long, but not a large Pear; still I have sold them by the dozen, the crop one year realising £3 wholesale. Bishop's Thumb is very hardy and a good keeper, and the tree ought to succeed well as a pyramid or standard, seeing that I have very satisfactory results from extended growth above the roof.—E. W. B.

A good early Plum—Czar.—The market is sometimes overstocked with Plums, but an early variety like the above, suitable for either cooking or dessert, will always be of value. The Czar is rather a new Plum, very hardy and prolific. It will withstand frost better than most kinds and comes in just after Rivers' Early Prolific, but is altogether

superior to that sort, being larger and more highly coloured. As a rule, the fruit grows too thick to come to full size. The large amount of saccharine matter contained in this fruit makes it more wholesome than many other well-known kinds and in great request for stewing and jam-making. The bush form suits it well. On young standards I have sometimes to tie the head together, or the small branches would collapse with the weight of fruit. The Czar is a strong grower, throwing up a straight stem for the standard and making a well-balanced, handsome tree. I am now syringing the Plum trees and bushes with liquid lime containing a little paraffin as an insecticide and a protection from the finches.—E. W. B. Holmer, Hereford.

STORING APPLES.

TO THE EDITOR OF THE GARDEN.

SIR,—I was very pleased, but not surprised with your verdict as to the superiority of our best English grown Apples as compared with foreign importations, for lately I have been testing all the imported Apples I could meet with, and am confirmed in my opinion that the best of them are far inferior to our best home-grown fruit, of which we now have so many late keeping sorts of excellent quality. Nearly all sorts of Apples are capable of being kept much longer than they are credited for in catalogue descriptions if they are gathered at the right time and properly stored. I quite agree with your remarks as to many of our best kinds being spoiled by storing in too dry and hot an atmosphere. I have what I consider an exceptionally good place for storing all kinds of fruit, viz., a tower with walls nearly 4 feet thick, which guards us against all extremes of temperature. All our Apples are left upon the trees as long as they will possibly hang, some sorts, especially Sturmer, Scarlet Nonpareil, Cornish Aromatic, &c., being kept out as late as the middle of November. I never trouble about their being wet or dry when stored, so long as they are handled carefully to prevent their being bruised. All our shelves are formed of slate stones, upon which the Apples are placed from 9 inches to 10 inches deep, each kind to itself, and never touched again till required for use, excluding all light and air as much as possible. Nine people out of ten keep their Apples on straw, which engenders mildew, and soon destroys the flavour of the best of fruit. I attribute the fine appearance of the samples I sent for your inspection to their having been allowed to hang upon the trees as late as possible, when the foliage being less dense gives the fruit a much better chance to colour and mature, and after storing keeping them as cool, close, and dark as possible. In this way I have been able to keep the grand old Blenheim as late as April, though its proper season is said to be from November to January.

There are thousands of acres of orchards in this country devoted to growing Apples for cider, which cannot possibly pay the most careful and skilful manager, for it takes nine to twelve imperial bushels to make a hogshhead of cider worth from 18s. to 22s., thus leaving little if anything over 1s. 6d. per bushel for the Apples after deducting all the expenses of making, &c. Then there are thousands of trees which produce fruit only fit for cooking, and which will not keep beyond the month of October. This must be sold when the markets are glutted and fetch a price that barely pays for the labour of picking and marketing.

I believe that if our existing orchards were carefully managed, the right sorts of Apples grown, and properly stored, there would be little chance for imported Apples in the English mar-

kets, excepting perhaps Tasmanian ones, which though of inferior quality, coming in at the end of our season, will doubtless always find a ready sale. Many of our orchards after being planted are taken but little notice of beyond gathering the wretched produce, many of the sorts being worthless. At the present time many owners of orchards in this neighbourhood have not an Apple left, while all the shops have any amount of imported fruit for sale. I think this is a great disgrace to Englishmen, who have an easy remedy in their own hands. By heading back trees of worthless sorts and inserting from ten to sixty grafts of a really valuable sort upon each tree the loss of time and labour will be well repaid.

W. SANGWIN.

Trelissick, Truro.

CHRYSANTHEMUMS.

STRIKING CHRYSANTHEMUM CUTTINGS.

THERE is, I think, no advantage gained in making a start with these plants before the present month, unless it be that the old stools take up room in our greenhouses which is wanted for other things. Early-struck plants are likely to show flower-buds in the spring months. This is not at all desirable in what may be called the large-bloom system, but, of course, it matters little if bush plants are to be grown. In the former case a free, uninterrupted growth from the beginning should be aimed at. Careful cultivators will make a start with clean pots, the smallest sizes being best for the purpose. Mix a compost of loam, leaf-mould and sand in equal parts for the cuttings, and place one firmly in each pot. In choosing the cuttings it is well to avoid those that grow up the stem of the old plant and also any that may be showing a flower-bud at the tip. Some few years ago not many growers, I imagine, thought of any other place to root the cuttings in than a cold frame, which position still, in most cases, gives the best results. In very severe weather, such as we are now passing through, there is a difficulty in giving them daylight; but it is bad indeed if we cannot let the frame be uncovered for just an hour or two in the middle of the day; 20° of frost and more may be prevented from damaging the young cuttings by covering with mats and straw. What I have noticed in cold frame-struck Chrysanthemums is that they seldom flag, but they must be constantly watched to prevent damp. A little air may be given at times, and if a decayed leaf be seen, be prompt in taking the same away from the rest. A quicker mode of rooting the cuttings is under handlights or lightly constructed frames in a cool house, and here damping may be avoided by occasionally wiping the condensed moisture from the glass. But it is not wise to start the Chrysanthemum plant on its season's work by tenderly striking in fire-heat. Traders, to keep pace with the demand, are oftentimes obliged to root young ones of the new varieties in a high temperature, hence it is so seldom we find out the true qualities of novelties the first year of trial. After the first watering when the cuttings are potted we must be guided entirely by the weather as to when it shall be repeated. In mild sunny times I would prefer sprinkling them overhead to prevent the leaves flagging to shading for the same purpose. But little air will be needed until the plants are rooted. Some kinds being much more free to emit roots than others, the for-

wardest should be taken from the rest and placed into another frame. They may here receive a plentiful supply of air and water and be brought on sturdily. Those, too, that have been rooted in the warmer temperature of a greenhouse should be gradually brought to a cold frame to prevent a spindly growth. A method of striking Chrysanthemum cuttings practised, and not without success, by some is to stand them on shelves or stages and take no notice of the leaves flagging. They appear withered for some time, but by ordinary watering when dry they prick up their heads and make first-rate progress. If exhibiting at shows be an object there are some notable kinds that it may be advisable to defer striking for yet another month. The naturally early ones, as Avalanche, W. H. Lincoln, Anna Hartshorn, Cesare Costa, and I have generally noticed such large-leaved kinds as E. Molyneux, Mrs. Wheeler, and Beauty of Castlewood make comparatively better plants from late cuttings. Again, some of the most esteemed varieties of American origin are very late in showing flower-buds. These, if struck in February or March, will produce very fine blooms if allowed to carry but one on the plant. Besides the better-known kinds, Mrs. F. Jameson and Mrs. E. W. Clarke, Lord Brooke, Harry May, Ruth Cleveland, Robert Flower-day may well be tried on this plan.

H. S.

Chrysanthemum Mrs. L. C. Madeira.—This, referred to in THE GARDEN, February 4, appears to be a capital sort for late flowering; the colour is a very rich orange-yellow, always a favourite; it is deeper in tint than Mrs. Norman Davis, long recognised as one of the best of the late sorts amongst the incurred section. Were it not that the flower of Mrs. L. C. Madeira is so much deeper in colour, it would be difficult to recognise it from that of Mabel Ward, as it has the petal of that now almost obsolete kind, and the peculiar quartering or rib so well known to cultivators of the incurred section.—E. M.

Chrysanthemum L. Canning.—This variety has been a failure from an exhibition point of view, but for late blooming it ranks as one of the best among the white kinds. I have at the present time (January 21) a capital lot of flowers of this and of the purest white, and most useful they are for the decoration of tall vases, as the plants have been so managed to have a sufficient length of stem which renders them so much more useful than they are when the stems are but a few inches instead of at least 1 foot. Those persons who have not given this Japanese kind a trial should lose no time in doing so.—E. M.

A wall of Chrysanthemums.—The culture of the Chrysanthemum on walls is not much considered, judging by the bare spaces that one finds in gardens. Last November we saw in quite a suburban garden, shut in by surrounding houses, a wall covered with Chrysanthemums, not so fine, of course, as in the purer air of the country, but very pleasant to look at in spite of their smoky position. The varieties were not named, but, as far as one could judge, they comprised Jules Lagravere, Jardin des Plantes, Refulgence, and Mrs. G. Rundle, the bottom part of the wall being filled up with pompon kinds. It would be well if more would follow out this plan of growing Chrysanthemums on walls. There is much beauty to be got from thus growing them if the varieties selected are suitable. Good strong plants were put in early in the spring, the soil being well prepared so as to give the Chrysanthemums every chance of producing a creditable display of flowers, and the branches were well trained out, being placed in a slanting direction. Almost every inch of the wall was covered with foliage, occasional syringings being given, also plenty of water at the roots, varied with liquid manure to promote vigorous growth. This is of importance, the syringing in particular, especially

in a hot, dry garden, where the soil quickly gets into a powdery condition. In the autumn disbud, that is if fairly large flowers are desired, as this is the only way to get them of fair dimensions, but of course in the case of the pompons this is not necessary to the same extent. It would be well to have a coping of some kind to protect the flowers from the rains and fogs of November, but in the instance above referred to this was not provided. The result was that, although only just on the verge of full beauty, the flowers were becoming soiled.

GROWING CHRYSANTHEMUMS FOR CUT BLOOMS AND FOR CONSERVATORY DECORATION.

WHILE thanking your correspondents for their information on the subject of Chrysanthemums for market (p. 31) in reply to my query (p. 14), I wish to ask for a short cultural note on growing these plants purely for cut blooms and for conservatory decoration. Nearly every treatise on this plant is devoted to growing them for the sake of one large single bloom for exhibition, or for elaborately trained plants for show. I am therefore in doubt as regards pinching, topping, taking the bud, timing the bloom, and so on. I ask, are all the performances required in the case of plants to be grown purely for the above purposes?—A. E.

* * Assuming "A. E." has made a start with some such collection as advised (p. 31), the young plants should either be rooting or fairly established in small pots. Perhaps it will be as well to notice first the early-flowering kinds—Mme. Desgrange and its sports, Mrs. Burrell, G. Wermig, and Mrs. Hawkins. These being among the most tender of Chrysanthemums in the small stages, therefore require not only a little more warmth, but a soil composed of lighter material than the bulk. Place these on a greenhouse shelf near the glass till well on in March, when they may go with the rest in cold frames. In giving them the first shift into 5-inch pots mix a compost of equal parts loam and leaf-mould with a good sprinkling of sand and broken charcoal or mortar rubbish. The last, of course, is the cheapest, and answers well the purpose of keeping the soil porous and sweet. The final repotting should take place before the plants become root-bound, which will be quite early in May. This time use pots of 8-inch diameter and the leaf mould in a smaller proportion. The Desgranges are rather impatient of manure, and it need only be used in a liquid state, then always weak later on when the bloom buds are swelling. If the plants do not of themselves start branching, they may have each tip taken out when 9 inches or so in height, and being of a bushy nature this probably will be the only topping needed. They generally throw out from half-a-dozen to nine shoots, which are ample to form a compact bush, and if all the buds are left, a fine head of bloom results. They may be disbudded at the will of the cultivator, who has only to take away all but the centre flower-bud on each shoot to get larger blooms. The plants should be stood in the open after the end of April, but again placed under glass to flower. They will bloom outside in September, but it is obvious that the weather may damage them, nor do the colours come so pure as when under glass, lightly shaded during the sunny part of the day.

If not already in frames without fire-heat, place the rest of the young plants in structures where they may receive plenty of air on all favourable days. Here they will become sturdy. Give them the first shift into larger pots before they get in any way stunted through want of root-room, and it is well to bear this in mind when thinking of subsequent shifts. A suitable soil is that where good loam forms the major portion, and instead of the leaf-mould use rotted manure, sand and the mortar rubbish. A 6-inch potful of bone-meal to the bushel is of great assistance to the plants and gives the foliage a healthy tone. Pot firmly. The soil can scarcely be rammed into the pots too tightly at the final potting. When 6 inches high, take out the tip of each plant and again top

each of the shoots when later on they get the same length. This should be enough stopping to induce most varieties to form a bush of considerable size with from half-a-dozen to a dozen leads. These, again, then the crown bud shows itself (which, in the case of plants for a quantity of bloom, should be allowed to go unheeded), should each give three or four more; thus we get a plant of excellent dimensions.

For the pompon varieties an 8-inch pot is large enough for the flowering size; the rest may have those of 9-inch diameter. If it is thought desirable to go beyond this last size, place two plants in each pot. Stand the pots well apart in their summer quarters. Tie the principal shoots to sticks, about a yard long, before they get high enough to be broken by the wind, and never neglect watering. Till well on in the season the plants will not require anything in the way of manure; a dose of soot water once a week after they are well established in the large pots is sufficient. But from the time flower-buds show, stimulating manures become a necessity, and in a weak state may be given at almost every watering. I would not advise the labour-saving practice of plunging the pots in ashes, fibre or other material, for the roots are bound to find their way into such and produce a soft growth, besides resulting in a check to the plants when they become severed. There need not be any bother about taking the bud or timing the bloom. Choose the varieties named to flower at a particular period, do not pinch back the shoots after June, because time should be given for matured growth; then let them bloom naturally. Place the plants under cover quite by the end of September, and let abundance of air pass among them. The necessary checks to green-fly, mildew, and so on need hardly be referred to here, for perfect cleanliness is one of the chief things, yet one of the simplest in the culture of any plant.

H. S.

METHODS OF GROWING CHRYSANTHEMUMS.

Now is the time to decide on what method the plants are to be cultivated for the next flowering season. The most popular style, whether for home use or exhibition, is that which produces large blooms. Although I am in favour of the system which develops a variety thoroughly in every way as to size, form, and colour, I am not an advocate of those blooms which have nothing but mere number of inches in diameter to recommend them. Such blooms do much to disparage the method of large bloom cultivation. When judging at Chrysanthemum shows I invariably attach great weight to those blooms that are remarkable rather for the depth of the blooms than the number of inches in diameter.

Raisers of new Chrysanthemums are turning their attention to dwarf growing sorts of the Avalanche and Mrs. Falconer Jameson style of growth in preference to those of which Mme. C. Audiguier is an example. The finest blooms of the latter ever seen were from plants 12 feet high. Fortunately, this variety is now fast becoming obsolete, owing mainly to the extreme height which the plants reach. It is not possible to obtain blooms of this variety of high-class quality unless the plants are allowed to assume their natural growth. Although some growers manage to obtain very good blooms of certain varieties by topping them at different stages, the most general plan is to allow the plants to grow uninterruptedly from the cutting stage until they make their first natural break, which is caused by the formation of a flower-bud at the point of the shoot. The time of the first break varies according to variety and circumstances, sometimes taking place during April or even in May, and in some cases even later than that. While some varieties will make the first break at 1 foot high, others will grow 4 feet before it takes place. When the plants are allowed some freedom, all their wants are met at the proper time, the growth being then properly

ripened. Badly ripened wood will produce blooms large enough in diameter, but they lack the most essential points—depth and solidity—especially in the incurved section. Some persons say that plants raised from cuttings inserted in February and March will give exhibition blooms, but they have not as yet produced them. The reason is not far to seek, want of time to perfect the growth being the cause of failure. Some growers restrict the number of blooms on a plant to two and some even to one, but this, I think, is quite unnecessary. I have seen others attempt to produce six blooms upon one plant up to exhibition form, but that also failed. For many years three blooms have been considered the orthodox number, and although I have tried more and less, and seen others attempt the same, I have long since considered that number sufficient. When the natural break takes place, restrict the number of shoots to three, allowing one flower to each. I know some growers treat their plants quite differently, topping them at 8 inches high, allowing three shoots instead of one to grow from near the base. From the growths resulting from this topping the blooms are taken, one from each shoot. I have not seen the advocates of this principle take a high position in the exhibition room.

Topping the plants at stated heights with a view mainly to regulate the date of certain buds forming, so as to have the blooms in perfection at a stated time, is attended with so many risks, that it is not likely to be universally adopted. The weather is so uncertain as to preclude the chances of success becoming general even in the Japanese section, and certainly never with incurved varieties. Some sorts in the former section bloom too early for exhibitions at the middle of November when cultivated on the ordinary method. By a judicious method of topping the shoots when a few inches high, the blooms can be retarded fully a fortnight, but in no sense are the blooms of the same quality as when obtained by the usual method. Mrs. Falconer Jameson affords an instance of this. As grown in the ordinary way, the blooms are too early for the date named, but the first blooms are considerably finer in every respect than from plants that have been topped. I am acquainted with a large grower who thought he could improve his previous efforts in the Japanese section by topping the plants. For instance, he operated upon all his stock of Stanstead White, with the result that when November came round he had not a presentable flower of this uncommonly fine white. The somewhat cold and wet August militated against the perfect development of the plants and blooms. Many other instances might be quoted in support of the fallacy of this system.

The next most popular method of culture is that known as the "bush" plan. To small cultivators who wish for a good home show and a quantity for cutting also, this method can be recommended. The plants are topped when 4 inches high to produce additional shoots to form a "bush." Cutting down the plants is a system very much in vogue by exhibitors of groups as well as for conservatory decoration, as it is seldom that naturally grown plants can be tastefully arranged. By cutting down, such varieties as Avalanche can be had 18 inches high from the top of the pot, and those of taller growth may be reduced in proportion, all giving fairly large blooms, but of course not equal to those obtained in the usual way. The plants should be raised from cuttings in the usual way and grown on as though intended for giving large blooms. About the middle of May they should be cut down to within a certain height of the soil, according to the variety. For instance, the dwarf-growing varieties should be cut down to within about 4 inches of the soil, others to 6 inches, 8 inches and 12 inches. The shoots resulting from this will form the future flowering shoots.

E. MOLYNEUX.

The English Flower Garden.—Design, Plans and Plants. Third edition, revised, with many new illustrations. London: J. Murray, and through all booksellers.

FLOWER GARDEN.

LYME GRASS.

(ELYMUS ARENARIUS.)

THIS is a British maritime Grass well worthy of garden cultivation. It is a valuable plant for clothing a bank of loose soil or even sand, as its roots run through, forming a perfect mat and effectually holding in position the soil of the bank. If planted in deep good soil upon the shrubbery margin it grows more vigorously, attaining to 4 feet in height. Its sole beauty is its leaves, which are of a glaucous or blue-green colour, and as the flowers are not very showy they might be removed to preserve the plant in its beauty of leafage for as long a time as possible. It is easily increased by division, and rapidly grows into a large specimen. In a wild



The Sea Lyme Grass (*Elymus arenarius*). Engraved for THE GARDEN from a photograph sent by Mrs. Martin, Bournbrook Hall, Birmingham.

state it is most abundant upon our northern shores. There is also an American representative of this family, *E. condensatus*, which is very ornamental and must be included in a selection of the best Grasses. It is very vigorous, of tufted habit, dense and erect, growing to a height of 8 feet. The leaves are long, arching, and graceful, and the shoots are terminated by a flower-spike 6 inches long and greatly resembling an ear of wheat.

Clematis cirrhosa.—This species of *Clematis* is remarkable from the fact that it often flowers thus early in the year, that is, if the plant has the protection of a south wall. It is not by any means showy, yet at the same time it is a very interesting species, and with the paucity of outdoor flowers, it is far more attractive than would be the case if the blossoms expanded about the same time as many of those of its showy relatives. Another feature is its evergreen character, as nearly all the species of *Clematis* are deciduous. *C. cir-*

rhosa is a medium-growing climber whose clusters of deep green, divided leaves are very pretty, especially during the winter, while the flowers are freely borne for a month or two. They are smaller than those of most of the others, being less than an inch in diameter, bell-shaped, and of a greenish white tint, the exterior of the bloom being clothed with a kind of silky down. It is a native of the south of Europe, and, according to Loudon, was introduced therefrom in 1596; but it is at the present day one of the most uncommon kinds, and numerous lists may be searched for it in vain.—H. P.

THE ROCK GARDEN.

SELECTING THE STONE.

LARGE sums of money are often spent on, what most people call, ornamental rockery stone. The owners of quarries, as a rule, reserve carefully all stones obtained from such

hues show to still better advantage the bright flowers springing up from their crevices? For the interior of caves and similar places, the shining crystals of this so-called rockery stone may sometimes be admissible, but the unfortunately too general practice of using them for outdoor rock gardens cannot be too strongly condemned. Moreover, the brittle crystals when exposed to the weather soon crumble into dust, and the ornament (!) so dearly paid for vanishes from view. Instead of incurring heavy expense for stones from a distance, it would in most cases be far better to use those indigenous to the locality unless they should be of an unsuitable nature.

In order to be able to build good rocks we must study Nature, and, at least a little, geological knowledge is indispensable. Geologists divide all rocks into two great classes, viz., stratified or sedimentary rocks, and unstratified or igneous rocks. The latter are again divided into plutonic rocks, which have been upheaved by heat from the interior of the earth, like granite or porphyry, and volcanic rocks, like trap, basalt, or greenstone, which, it is generally assumed, have been produced by volcanic eruptions during bygone ages. The stratified rocks comprise all the different varieties of our slates, limestone, flint, sandstone, oolite, chalk, &c. All have been deposited originally as sediment from water, and are, therefore, always found in distinct parallel layers or strata of varying thickness, but always in the same order of succession, though by subsequent upheavals the plutonic or volcanic rocks have in many places forced their way through the layers and tilted them. The stratified rocks also include the so-called metamorphic rocks, which have become crystallised in consequence of having been in contact with plutonic rocks in a state of fusion.

If our rock garden is to resemble Nature, it must be of the utmost importance to know which class of stone is to be used for its formation. If the available rocks are of the unstratified class it would be absurd to arrange them in the same manner as stratified rocks, perhaps showing distinct strata, where in Nature none would occur. Generally speaking, granites and other igneous rocks are in Nature found scattered in the wildest confusion, as, for instance, on Dartmoor, Lidford Gorge, and other places. They are, therefore, more suitable for the formation of bold masses of rock in a wild garden or hardy fernery than for an alpine garden where the construction of narrow crevices would be required.

By far the greater number of mountain plants are indigenous to limestone, and if the colour, size and shape are suitable, this material should, generally speaking, be selected in preference to any other. For the few plants which object to limestone, pieces of granite or other rock may be mixed with the soil without interfering with the general design. If, on the other hand, limestone of a suitable kind should be difficult to obtain while good pieces of weather-beaten granite, oolite, sandstone, or any other suitable rock are plentiful, it would be folly to reject the material close at hand. In such localities the rock garden might be constructed with the best stones obtainable in the neighbourhood, adding old mortar, chalk, or even the inferior quality of limestone used for ordinary building, road-making, &c., for such plants as may require it.

THE COLOUR AND SHAPE

parts of their quarries as contain veins of quartz or other glass-like crystals, mostly of a glaring light colour. Sometimes the whole stones are almost white. They are generally broken into pieces convenient for a man to lift easily, and are, therefore, very even in size. I know many cases where such stones as these were obtained from a great distance, and therefore at a great cost. They may by some be considered pretty to look at, and might be a suitable feature in a collection of mineralogical specimens, but for the purpose of our alpine gardens they should, in my opinion, never be used except crushed into small fragments and mixed with the soil. The beauty of a rock garden, whether large or small, should consist in its being true to Nature. But where in Nature do we see glaring crystals in exposed rocks and in connection with plants? Do we not, on the contrary, admire most the rough, weather-beaten surface of boulders which have stood the test of untold ages, and whose dark

of stones used for the construction of crevices underground can be of no consequence, but I should like to give a few general hints for the

selection of the main body of stones which are to form the visible part of the rock garden.

Stones of a glaring white colour, no matter whether flint, spar or limestone, should, I think, be avoided altogether. Not only do they afford little or no contrast to white or light-coloured flowers and are cold and ineffective in appearance, but they also repel and reflect the rays of sunshine in a manner injurious to some of the tender kinds of plants. Dull red, dark grey, brown and yellowish brown are the colours which form perhaps the most pleasing contrast with the verdure and flowers of plants. Sometimes stones having, at least on one side, a rough, weather-beaten surface, perhaps even covered with Moss or Lichens, are easily obtainable, and if so should in all cases be preferred to fresh broken material, as they will impart to the rock garden a character of natural antiquity, otherwise possible only by long years of exposure. The shape of the most eligible stones depends entirely on the nature of the material to be used. If the rocks are of the unstratified kind, their manipulation in the alpine garden must be an entirely different one from that of the sedimentary class. It would be well in this case to have as much variety of shape and size as possible, ranging, say, from half a cwt. to 10 or 12 cwt. Stones heavier than this are rather unwieldy, and should only be used in rock gardens on a large scale, where special arrangements for lifting heavy weights would be required.

If, however, the stones available belong to the stratified rocks, it should be borne in mind that we have to imitate—to some extent at least—the natural stratification in order to give our alpine garden that appearance of reality so pleasing to the eye. In choosing the stone, therefore, as many flat and thin pieces as possible should be selected. These will be found of the utmost importance for the imitation of natural strata, and are also most valuable for the formation of narrow crevices for choice alpine, rocky steps, &c. Even the thinnest slabs will be found useful for this purpose, and whilst unstratified rocks of a size less than about half a hundredweight would be of little use for the main work (excepting the very small pieces required for covering the surface of the soil around alpine), the sedimentary stone, if chosen for rock building, might vary in weight from only a few pounds to say 15 cwt., unless the work is to be of a very extensive character, including caves, waterfalls, &c., which would necessitate some of the stones being still larger. It must not be understood that I would recommend thin or flat pieces exclusively; on the contrary, let there be as much variety of shape as possible, but the flat stones should predominate.

In concluding my remarks about the selection of the stones, I would draw attention to the fact that some kinds of very porous rocks are apt to crumble to pieces by the action of rain and severe frost. It should, therefore, always be ascertained whether the stones selected will stand exposure to all weathers. For a rock garden under glass this may be immaterial, but for a rock garden out of doors it is of the utmost importance. It would also be advisable not to use many different varieties of stone in the same rock garden. One kind is sufficient, unless, for instance, good limestone and good granite can be used, and are separated into different groups. Where other kinds are required for the benefit of the plants, they should, as a rule, be used underground, as already stated. Stones having a surface partly covered by Moss or Lichens require to be handled with extra care throughout the work

to prevent the destruction of that natural ornament, and if they are very large they should be lifted by special gear. As the best contrivance (barring large cranes) for hoisting all large stones I would recommend a tripod made of three extra strong poles about 15 feet long, and secured at the top by a strong movable iron bolt. When double blocks and pulleys, working by means of an endless chain, are attached to this tripod, stones from 1 ton to 2 tons in weight can be lifted quite easily and without injury. For turning over stones of extra size or for dragging them into the required position, an iron winch (generally known by the popular name of "crabb") will be found of great service; but for most rock gardens the method of moving stones by means of planks and rollers, as described in my former notes under the heading of "preparatory work," should be quite sufficient, and such extra appliances should never be required for work on a small scale.

F. W. MEYER.

Eceter.

(To be continued.)

FLOWERS IN IRELAND.

WITH a mean temperature of about 45° Fahr. for the last eight or nine days and no great severity of weather before that, the garden here is showing a most alarming vitality. The winter so far has been singularly free from cutting winds, which may be the cause; but a number of plants appear to be still seeking for that lost summer of 1892. Some genuine spring flowers testify to the mild season. *Rhododendron præcox* and *Eranthis hymalis* have been in blossom for a week. *Chionodoxa* is just opening. The following plants are in blossom or nearly so:—

<i>Cytisus Everestianus</i>	Snowdrops of sorts
<i>racemosus</i>	<i>Aubrietias</i> (several)
<i>Hamelis Zuccariniana</i>	<i>Veronica Andersoni</i>
<i>arborescens</i>	<i>decausata</i> and others
<i>Pyrus japonica</i> (just opening)	<i>Lithospermum prostratum</i>
<i>Vincetoxicum</i>	<i>Campanula fragilis</i>
<i>Primulas</i> , many, but no alpine	<i>Schizostylis coccinea</i>
<i>Saxifraga Burseriana</i> (just opening)	<i>Erica medieterranea</i>
<i>coriifolia</i> (?), do.	<i>cafra</i>
<i>oppositifolia</i> (pyreneic), do.	<i>carnea</i> (just open)
<i>o. maxima</i> , do.	<i>Helianthemum</i> (white)
<i>o. St. Anne</i> , do.	<i>Cyclamen coum</i>
	<i>Primula japonica</i>
	<i>Hellebores</i>
	<i>Bellis sylvestris</i>

Aponogeton distachyon is just out of blossom. It has been continuously in flower in a small pond from Easter till the middle of January. It increases itself very freely by seed. I know no other plant in or out of cultivation with so long a flowering season. But the alarming feature I alluded to is the early growth of all bulbs. All sorts of *Daffodils*, *Lent Lilies*, *Polyanthus Narcissi*, &c., have been above ground, or coming up, since before Christmas, and now, I think, all are showing their leaf-tops. *Maximus* (true) is 6 inches or more in leaf, and so is *Tazetta*. Spanish and English *Irises* are both sprouting, the former 6 inches to 8 inches high. *Pæony* buds are above ground. *Tulips* (*sylvestris* and *Gesneriana*) are well up. Two sorts of *Eremurus* are bursting their great fat buds. *Oncocylus Irises* (of several sorts) are in leaf. *Glaucium luteum* is growing strong, and *Ornithogalum umbellatum* is doing likewise. *St. Bruno's* and *St. Eno's Lilies* are not behind. *Ixias*, *Sparaxis* and *Babianas* are all in growth.

Again, a number of delicate species are more evergreen this winter than is their wont. *Maurandya Barclayana* is still leafy, and there were a few blossoms at Christmas. This year it ripened no seed; last year I could have supplied a quantity. It is evident it never completed its season's growth. *Romneya Coulteri*, *Agapanthus umbellatus*, *maximus*, *intermedius*, *Libertias* (two or three),

Hypericum olympicum, *triflorum* (against a wall), *empetrifolium* are shooting and green. *Woodwardia radicans* has not withered. *Todea superba* is unusually fresh looking. *Lilies* are all above ground. Again such shrubs as *Acacia armata*, *Senecio Fosteri*, *Eupatorium riparium*, several *Ceanothuses*, *Clethra arborea*, *Aster argyrophyllus*, *Margyricarpus setosus* look as hearty as they did at any time in the summer.

I noticed a remark in a correspondent's letter the other day that it was better to plant out young and let things be acclimatised. I find exactly the opposite to be the case. Plant out old hardened specimens and they take a lot of killing, no matter how delicate naturally. I have a large collection of *Nepaul* and *Sikkim Rhododendrons*; this season they seem to be filling out their flower-buds fast. The only one I cannot succeed with is *Nuttalli*. It does not die, but it does not do well. The first *Rhododendrons* to blossom here will be *ciliatum* and *Countess of Haddington*; *glaucum* will run them close. The leaves of *eximium* are magnificent. *Arbutus Andrachne* and *Andromeda floribunda* are in beautiful flower now. A very charming *Daphne* that I got from Mr. Smith, of Newry, as *Daphne "Dauphne,"* evidently a form of *indica* (?), is very content in the open and about to bloom; it is deliciously sweet. I was tempted to write this little report by accounts of the severity of the weather across the Channel. English people do not half realise the merits of our Irish climate, and I wish these remarks may tempt even one visitor to come and see for himself. Both kinds of *Furze* are in bloom in the country here.

H. C. HART.

Carrablagh, Lough Swilly.

FLOWER GARDEN NOTES.

SOME time elapsed after the commencement of the thaw before one could get on the ground, owing to the depth the frost had penetrated. On the majority of soils, however, the surface is now fairly workable, and flower garden work can be resumed in earnest. Besides digging where necessary, mulching over borders, making up gaps in spring-flowering plants, and a general cleaning up of beds, any planting possible may be seen to at once. The system of utilising hardy plants to a great extent for a summer and autumn display is now general, and such planting can be extended or alterations made where existing arrangements were not quite satisfactory. We have a stock of *Lobelia cardinalis* in boxes that will shortly be transferred to beds that were partially filled with *Pinks*. The idea is to plant the *Lobelia* in little clumps about 4 feet apart, leaving the *Pinks* to fill the remainder of the beds. A large batch of new *Violas* will go in on a wide border already thinly planted with double *Peach-leaved Campanula*, and as the last-named is over rather early in the season, I shall reserve an occasional space for a good-sized plant of *Eucalyptus*. We have been lifting and replanting a large bed of *White Swan Viola* that acts as a carpet to some nice clumps of a rosy pink *Pyrethrum*. This is generally a very attractive bed from quite early in the season, as the foliage of the *Pyrethrum*, even when the flower is gone, makes a pleasing contrast to the mass of white. I remember finding *Violas* of great service in a lot of small straight beds which were not easily planted. They were a series of beds about twenty in number, each 8 feet by 6 feet, Box encircled, with about a foot of tiny gravel path between each, and the whole running along by the side of a broad walk. Carpet bedding with such a number was out of the question, strong growing plants of any description out of character, and I found, as I have said, the most satisfactory results from *Violas*. Free-flowering varieties of dwarf compact habit were selected, each bed had its own colour, and the flat surface was broken up by a few plants of *Dracæna indivisa* and *D. gracilis*, some irregular pyramids of *Fuchsia Sunray* and one *Humea elegans* in the centre of each bed. The recollection of the difficulty here experienced in finding suitable plants reminds one that among the points to be specially considered

in all flower garden operations is the selection of suitable plants for different situations. Thus whilst things of dwarf compact habit are so suitable for beds above named, they are decidedly out of character in situations where the object is to secure a telling effect from a considerable distance, and there is no greater mistake made than in crowding in a number of small plants of different shades, however bright the individual colours may be, in beds or borders lying, for instance, at the top of slopes of considerable height, having the principal walk at the foot of such slopes, and from whence the chief view of any operations at the summit is to be obtained. Nothing is better for such positions than simple and yet bold planting in a mass, and if permanent clumps of bold plants already exist, the ground about them can be filled in with something that will present in the distance the idea of a nicely contrasting carpet. Thus *Fuchsia gracilis* may be surrounded with *Chrysanthemum* Mme. Desgrange, *Aster Amellus*, *A. bessabaricus* or *A. acris*. The double perennial Sunflower may do duty as dot plants for bold grouping of *Aster ericoides*, and *Hydrangea paniculata grandiflora* encompass single plants of the new bronze foliaged Maple (*Acer p. atropurpureum*). The above will serve as examples in which bold perennials can be utilised; plenty of similar combinations will doubtless suggest themselves. If such situations are exclusively "summer-planted," a few useful things that may be mentioned are free-flowering Dahlias of the Cactus and bouquet type, Marguerites (both white and yellow), large specimen Fuchsias, and the white-flowering Tobacco. A very easy filling-up that I once adopted, and which was very showy all through the season, was effected by inserting rounds of Pea sticks at wide intervals, confining them at the top as one does for Sweet Peas and sowing Canary Creeper to cover the sticks, all intervening space being afterwards planted with annual *Chrysanthemum* Sultan.

Spring-flowering stuff seems to have wintered well; there are hardly any gaps, and looking through the Polyanthus beds the other day I noticed they were slightly on the move. A large bed that will be attractive presently is planted with a dark strain of this favourite spring flower, with small patches of Star Daffodil John Bull intervening. Very bright beds are made by alternating a primrose Polyanthus and scarlet Tulips. There is not a single miss in the beds of border Carnations—grand testimony, if more were needed, to the unmistakable hardiness of these flowers. I should like, by the way, to enter a protest against the name given to a new border Carnation in a catalogue received the other day. "New dwarf yellow self," it reads, "Comtesse de Paris." Surely the compiler of the catalogue must be aware that one of the very best border Carnations already in commerce bears the same name in, it is true, a more Anglicised form. Anyhow, I think the new introduction should be re-named. E. BURRELL.

Claremont.

Passiflora Constance Elliott.—This plant is not quite hardy, yet in a sheltered position it will stand most winters. In unusually severe weather some protection should be given, especially round the roots. We had one trained round the stone pillar of a porch. This was killed by the severe frost two winters back. Last spring I replaced it with another, and I was agreeably surprised to see the pillar covered in summer, the growth the first season being some 12 feet, and which flowered freely.—E. W. B.

Begonia Worthiana.—Two and three-year-old tubers of this fine bedding or pot Begonia will throw up shortly numerous stout shoots. These taken off when 3 inches in height and inserted into sandy soil in heat very quickly root and so produce fine plants during the summer. If tubers be specially held over in a cool, dry place as late as possible, then be started and propagated, plants can thus be obtained which will make admirable subjects for flowering in gentle warmth till Christmas. There seems to be no indeed why

they may not be induced to flower all through the winter. The considerable employment of this beautiful Begonia at Hampton Court Palace and other places of popular resort has created for it a great demand, and whether employed for bedding or for pot culture it is equally attractive. Plants from cuttings are used the first season for edgings. Then the tubers the second year are not propagated from, but allowed to carry all their shoots, making very fine plants; and then the third season they are used for giving stock for cuttings.—A. D.

Lathyrus splendens.—May I ask your correspondent "D. K.," who writes so exhaustively on Everlasting Peas (p. 88), whether *Lathyrus splendens*, which about a dozen years ago attracted a certain amount of attention (and was then described as a very beautiful member of the family from the mountains of California), has proved to be of any value, for I do not see it mentioned in his admirable article? It is, however, described with other members of the genus in the "Dictionary of Gardening."—H. P.

THE BOG GARDEN.

INTERESTING and practical notes were contributed by Mr. J. Wood to THE GARDEN, Feb. 4 (p. 79), and those who have bog gardens would do well to read them carefully. A bog garden is a delightful feature, and the number of moisture-loving plants that can be grown in a comparatively small space is great, whilst by the side of a small brook or stream a host of plants thrive to perfection. In the bog garden at Cambridge, or in the High Beech nurseries of Messrs. Paul and Son, there is much to be seen in the early summer months especially, and even in comparatively small places a spot can be reserved for the Calthas, hardy Orchids, &c., that need a perpetually damp situation. *Cypripedium spectabile* I have never seen better than in a recess in the rock garden, where the Trilliums and the Primulas delight to grow. *Orchis foliosa* makes a splendid mass under such conditions. The Calthas are a fine group and must have a boggy soil to succeed well. There are now many kinds, both double and single, brilliant masses of yellow in spring, and the forms of *C. monstrosa* bear flowers each like a little rosette, whilst in *C. leptosepala* they are of a rich orange shade. The Cardinal Flowers make a picture of colour in the bog garden, *Lobelia fulgens* Queen Victoria in particular. I have seen this splendid plant make almost double the growth as in the ordinary border simply through the moist peaty soil. The size of its rich crimson flowers is remarkable. The Huntsman's Horn (*Sarracenia purpurea*) is quite at home in such situations, and the Primulas flower with great freedom, *P. rosea* in particular, but one may have many types, as *P. japonica* and *P. farinosa*. Our native bog plants, as *Parnassia*, *Drosera*, and *Pinguicula*, could be grown, and they require little attention. There are many spots in gardens that could be converted into a bog garden, and the plants grown therein would give much pleasure. A brookside may be made, with even a small selection of plants, bright with colour, and by the margin of a lake colonies of various things can be formed. *P. japonica* is a bold flower for such a spot, and when well established, seedlings spring up in great numbers, so that it becomes naturalised. By the lake in Livermere Park, in Suffolk, this fine Primrose grows with great vigour in the more shady spots. The stems rise over 2 feet in height, and the flowers, arranged in tiers, appear for many weeks. One gets a great variety from white to deepest crimson. A very pretty kind has white flowers with a buff salmon eye, and the leafage of all the forms of this Primula is robust. Seen from the opposite side of the bank a large group is very effective. But one need not be tied down to a few plants only. By the side of water or in the bog garden the Japanese Irises, *I. Kämpferi*, *Spiræa palmata*, &c., may have a place. *S. palmata* is never seen to better advantage than when growing in boggy soil, the growth made being very

robust, and the mass of crimson flower-heads lights up the garden with colour. This interesting phase of English gardening is not taken sufficient account of, but from such a feature one may get much pleasure. E.

Varieties of Iris stylosa.—This charming winter-flowering Iris varies much in colour, and some of the varieties have received distinctive names. One of the best known forms is alba, in which the flowers are white or tinted with lilac. It is a delicately beautiful flower, just as fragrant as the type, and in other respects similar. Then there is a kind named lilacina, the flowers lilac, and another called marginata, in which the falls and standards are rich lilac, set off by a paler shade of the same colour. Speciosa has deep blue flowers, and there are variations from the type, but they differ merely in degree. An Iris fancier would covet them, but they are not sufficiently important for a place in ordinary gardens. This variability in the colour of *I. stylosa* increases its interest. The best position for the plant is a thoroughly well-drained border in a warm sheltered spot facing south preferably. A rich soil is unnecessary, and it should be kept dry in the summer months. Sunny, warm nooks on the rockery may also be chosen for it, and the time to plant is the autumn, affording some protection until the roots have got well established. *I. stylosa*, by reason of the delicate beauty of its fragrant flowers, is very charming in pots, and if potted in the early autumn, the bulbs will bloom well.

The Winter Aconite.—This seems almost too common a plant to write of, but at this season, when its charming little yellow flowers in their collar of green leaves appear above the surface of the ground, it is delightful. Although very easily grown, one sees comparatively little of it in gardens. We have been lately in a few places, but, save for a single root here and there, the Winter Aconite was unrepresented. Some years ago we remember seeing a fine garden in early February where the *Eranthis* was planted freely in the half-wild spots, colouring the ground beneath deciduous trees with its yellow flowers, and good clumps of it on the rockery, in the border, or a sprinkling of roots on the Grass make a pleasing winter picture.

Zinnias.—I think those who have grown the superb varieties of double Zinnias now so abundant will agree with me that it is well to have the plants as strong and forward as they well can be so soon as it is safe to commit them to the open ground. It will not be too early to sow seed of double Zinnias next month in gentle warmth. Great importance is attached to keeping the seedlings near the glass and where they can get ample light. To have them weak or drawn is to do them infinite harm. If seed be sown in pans and placed near the glass the seedlings will be sturdy and dwarf. When some 2 inches in height they may be pricked off thinly into other pans or shallow boxes, and then a month later go from these into a frame, where they may become 6 inches in height and be very strong before being transplanted into the open ground. It is not every grower who cares to take so much pains, but when the soil in which Zinnias are planted is well prepared and manured, the result is fine plants and flowers far beyond what come from very ordinary treatment. The double Zinnia is such a beautiful flower and gives some colours that hardly anything else furnishes, so brilliant and beautiful are they, that special good cultivation is amply repaid.—A. D.

Dicentra spectabilis.—Mr. Wood's note respecting the frequent cutting down of the early growth of this by frost induces me to say that at Bedford, where I grew a quantity of large roots, producing during the season very fine clumps of foliage and bloom, I always planted beneath the overhanging boughs of spreading trees, and never found the shoots injured by late spring frosts. This *Dicentra* is peculiarly fitted for wild garden planting, for it lives without replanting for several

years, and only when the plants are strong is its real beauty seen. Still further, no plants show the same noble growth and very long flowering endurance that well-established roots do. The early growths are usually quite safe if the plants have shelter on the north and east, but with overhanging branches of trees I have found the shoots unharmed in any aspect. It is one of the most beautiful of border plants, but exposed is liable to the injury referred to. Even in such cases a large basket or a light framework covered with canvas turned over the plants at night until danger is past will make all safe from injury.—A. D.

The Huntsman's Horn for colour.—We have visited a few gardens and nurseries during the winter, and amongst hardy things the common *Sarracenia purpurea* is conspicuous for the rich crimson colouring of its curious leaves, fashioned in the shape of a horn. A large clump of this in moist peaty soil on the rockery or in the bog garden is a bright feature in the winter season. One must have a good mass of it to get effect from its crimson foliage, and if in a peaty boggy soil, not too wet, it will grow away with vigour, forming a charming mass with its richly-coloured, horn-shaped pitchers.

STOVE AND GREENHOUSE.

TREE OR PERPETUAL-FLOWERING CARNATIONS.

I WAS much interested in the article by Mr. Douglas which appeared in THE GARDEN, February 4, respecting these useful winter-flowering plants. Few, however, have the same conveniences for carrying on their culture so successfully, but even without such exhaustive resources it is surprising what results may be achieved by those who take an interest in the cultivation of these winter flowers. Although so valuable as button-hole flowers, it does seem strange that so little trouble is taken with them in many gardens and so little space devoted to them. I am inclined to think this is attributable not so much to the unsuitableness of the structures gardeners have to deal with as to the want of a proper system or method of procedure. To be successful, an early start must be made in striking cuttings, as unless this is done the plants cannot attain a useful size or sufficient maturity in their growth to flower freely and continuously during the most sunless months of the year. I have adopted for the last few years a similar course to that so well described by Mr. Douglas, and although not many plants were grown, there were but few days in the year when a bloom could not be found; indeed from a batch of not more than two dozen plants I was able to supply a coat flower daily for my employer the whole year.

In growing so few plants I found there was an advantage in keeping a portion of the stock over the second year, as the older plants furnished the earliest autumn supply. This course may, or may not be necessary, varieties differing in point of early flowering very materially, but the plan suited my case so well, that I shall not be inclined to give it up until I have found a better one. After a stock of cuttings had been secured, the best of the year-old plants were selected and placed into pots a size or two larger, removing at the time as much of the old and unoccupied soil as possible by the aid of a small pointed stake. Turfy loam broken fairly small, with leaf-mould and dried cow manure added in good proportion, formed the potting compost, soot, bone-meal, and sharp sand, a small sprinkling of each, aiding its richness and porosity. Cocoa-nut fibre I find a good substitute for leaf-

mould, and there are seemingly few plants that will not root freely in this. Sturdy and short-jointed growths may be gained to some degree by firm potting, although in Tree Carnations tall shoots are naturally expected in many of the best sorts.

To flower them well in winter they must necessarily have some open-air treatment for the consolidation of their stems, which have a sappy tendency when kept permanently under glass. If a good strike is secured in February and the plants grown steadily on, they will be ready for placing into their flowering pots in May or beginning of June, by which time they can be stood in a sunny spot outdoors, and there remain until September. The old plants share a portion of the same space, allowing room for the plants to stand clear of each other, so that a maximum amount of air and sunshine may reach every leaf and stem. The same rule should be followed in the autumn when they are housed for the winter, for if stood thickly together, shaded by other plants, or standing a long way from the glass, they quickly become enfeebled, and disappointment to the grower is sure to follow. Tying and staking must not be neglected. Stakes of sufficient length to support the full-grown plant ought to be put to it early, securing these to strained wires or some other convenient arrangement to prevent them being blown about by the wind. When standing unsecured, they fall about one over the other with the slightest wind, which renders them liable to be broken, and the roots injured by the swaying of stakes to and fro. If the pots are wholly or partially plunged in the ground, or in cocoa fibre or ashes, they are kept steady as well as protected from scorching sun, which, when the plants are in small pots, does a deal of injury to the fibrous roots exposed to the heated surface.

When the soil is well occupied with roots, stimulants should be resorted to frequently in a liquid or dry state, or, preferably, both alternately. Good flowers and a continuous supply cannot be had without the aid of stimulants of some kind. Prepared chemical manures are now so numerous, that it would seem superfluous to mention any particular one as being likely to suit Carnations best; it is a question that can well be left to the discretion of individual cultivators. I would strongly advise the use of liquid natural manures; if these cannot be had from farmyard tanks, resort should be had to some favourite kind prepared in a small slate tank; or, failing this, a petroleum barrel previously freed from oil by charring the inside. Soot in a diluted state is a valuable stimulant for Carnations, and may be employed as a change from cow, sheep, horse or fowl manures, each prepared in the same way.

Seed of good strains is offered by the leading seed firms, and this sown at once and the seedlings treated as advised for cuttings will result in good flowering plants by next winter and spring.

W. STRUGNELL.

Rood Ashton Gardens, Trowbridge.

Libonia floribunda.—In a warm greenhouse the pretty bright-coloured blossoms of this *Libonia* are borne for months together, and that too during the winter season; still, despite this very desirable feature, it is not always met with in a satisfactory condition, for the foliage often wears a yellow and unhappy appearance, which even if the plant is full of flower detracts greatly from its ornamental features. Some cultivators plant out their *Libonias* during the summer months, but as a general rule this mode of treatment is not nearly so satisfactory as growing them altogether in pots. The cuttings should be struck as early in the year as possible

and shifted on as required. A cold frame is a very good place for the plants during the summer, and in hot weather frequent syringing will be of service, not only to encourage growth, but also to keep down red spider, which will soon cause the foliage to acquire a sickly tint. During their earlier stages the young plants should be freely pinched in order to encourage a bushy habit of growth. As the pots get full of roots occasional stimulants in the shape of liquid manure will be of service, while soot-water will greatly help to maintain the foliage in a rich green state.—T.

Eranthemum pulchellum.—Introduced from the East Indies nearly a century ago, this is still one of the prettiest flowering plants we have in the stove during the winter months, for under favourable conditions it will bloom from Christmas onward, often for three months or more. We have very few indoor flowers at any season of so beautiful a blue as this *Eranthemum*, and at the time it blooms there is really nothing else to compare with it for colour. It is also of very easy culture, and, like most *Acanthads*, is more satisfactory when propagated annually from cuttings, which should be formed of the young growing shoots, and if taken in the spring will root in a few days. If shifted on as required, they will form good flowering plants by the winter. During the summer they will succeed very well under frame culture, but as autumn advances they must be taken into the stove. If kept in a frame throughout the summer and a liberal use made of the syringe, the plants will grow freely and keep free from insect pests, which is not always the case if in a warm house, as red spider often attacks the foliage. Fairly liberal treatment is necessary to the well-doing of this *Eranthemum*, and as the season advances and the pots get full of roots, an occasional dose of liquid manure will be of service.—H. P.

Begonia Gloire de Sceaux.—This *Begonia*, which was awarded a first-class certificate at a recent meeting of the Royal Horticultural Society, is not such a novelty as one might suppose, judging by some of the remarks overheard when it was exhibited. It was sent out either six or seven years ago by MM. Thibaut et Keteleer, of Sceaux, in France, who announced it as a hybrid between *B. socotrana* and *B. subpeltata*. The habit of the plant is stout and vigorous, and without any stopping it naturally forms a neat compact specimen, well furnished with ample foliage of a thick texture and of a rich metallic tint. The flowers, too, are large and borne in good-sized clusters, while their colour is a very pleasing shade of deep pink. As a rule it commences to bloom about Christmas, and will then maintain a succession till spring is well advanced. Public attention being now directed to this particular variety, it will no doubt be much more extensively grown than was formerly the case.—T.

Eupatorium grandiflorum.—It is now about ten years since this species was first brought into notice, yet it has not become so widely cultivated as one might have expected, seeing that its habit is good and that its flowers are of a purer white than in the commoner species. The size of the heads of blossoms, too, quite justifies the specific name. It is erect in style of growth, with large ovate, coarsely-toothed leaves, quite different from those of the better-known *Eupatoriums*. It is also a slower growing plant, and, contrary to the general practice with *E. riparium*, should be kept for two or three seasons. A good plan after the first year is to plant them out in the open in a sunny position about the middle of June. With regard to the history of this plant I have not been able to trace it back beyond 1882, when the same name occurs in the *Revue Horticole* under a coloured plate. The flowers there are pink, which may perhaps be due to the superior climatic conditions of Southern France, where the species is grown permanently out of doors. Regel, however, figured a somewhat similar *Eupatorium* in his *Gartenflora* in 1852, named *E. grandifolium*. It is possible there may be some confusion in the two names. Regel infers the latter is a native of

Guatemala, as the plants were raised from seeds which came along with some Orchids from that country.

Phyllanthus nivosus.—This stove shrub, which has been known in our gardens for the last twenty years, owes its attractive features not to the flowers, but to the beauty of its foliage. It is a free-growing plant of a loose open habit, whose slender shoots are clothed with ovate leaves, which where well exposed to the light are more or less marked with pink, white and green in varying proportions, some being almost white and others white with a pink tinge, while some have the three colours all blended together, and others are quite green. To ensure well-coloured plants the best marked shoots only should be employed as cuttings. They strike readily enough in a gentle bottom heat, and if shifted on into pots 5 inches in diameter,

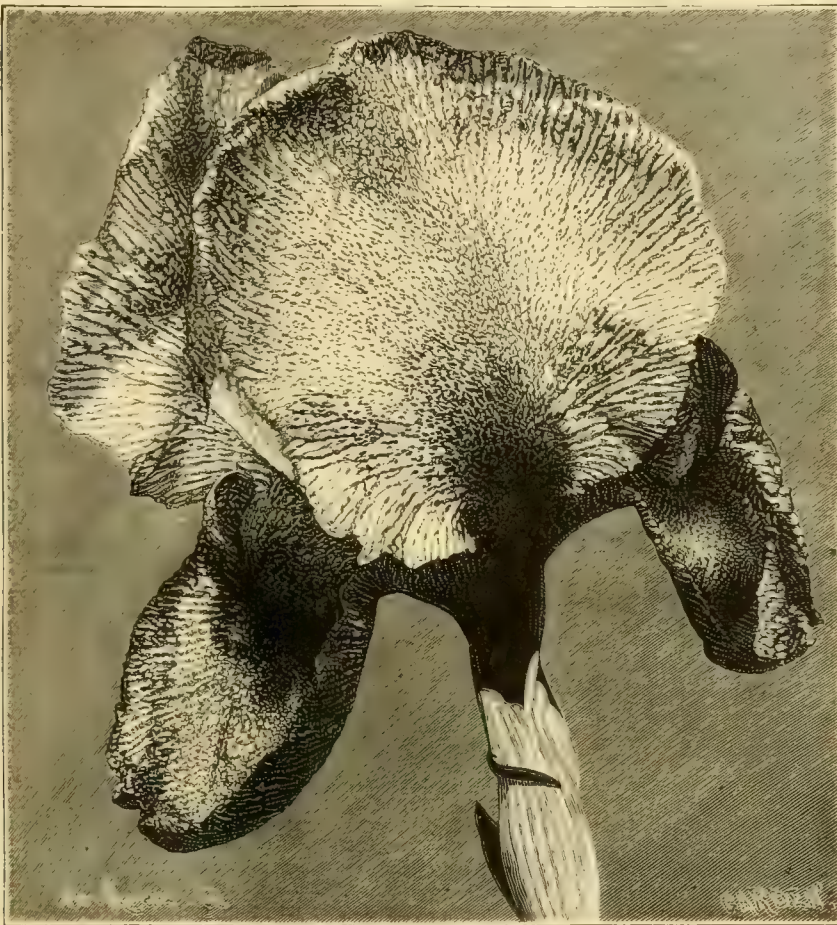
lanceolate leaves that are deeply serrated. The blooms, which are borne in many-flowered drooping racemes during the summer, are white and not particularly noticeable, but they are succeeded by berries which render the plant very pretty in the winter. These berries are about the size of Peas, pure white, except a dark spot on the apex, surrounded by a circle and five other dots of the same tint. These berries remain fresh a very long time. It is not hardy, and the treatment given to greenhouse Rhododendrons will suit it perfectly. —H. P.

Rhododendrons.—The charming boxes of cut trusses of the javanico-jasminiflorum hybrids shown by Messrs. Veitch and Sons so frequently at the R.H.S. meetings should do a great deal towards extending their popularity. I have personally often longed for an opportunity of growing

house they may be had in bloom at a time when most outdoor subjects wear their winter garb. Apart from the beauty of the flowers, the mass of tender unfolding foliage is very pretty, and when crowned with huge blossoms a group of these Pæonies forms a most striking feature in the greenhouse or conservatory. The better kinds of Tree Pæonies always command good prices, owing to the fact that they are rather slow of increase and by no means of rapid growth afterwards. Whether single or double flowers are the more beautiful is at least an open question, for both have their admirers. For two or three years previous to the present season considerable numbers of these Pæonies have been sent here from Japan, and disposed of at the London auction rooms. They bore the journey well, the roots being tightly packed in Moss, while the tops were allowed sufficient space for the free circulation of air around, which was assisted by holes bored in the boxes opposite these air spaces. The first consignment realised high prices, but these were not afterwards maintained. Up to the present none of these Pæonies from Japan have made their appearance this winter. Of those sent last season nearly all that came under my observation had single flowers, and very beautiful they were, some huge white blooms being particularly striking.—H. P.

Impatiens Sultani.—This is very useful for flowering at the present season, for just now the blooms appear to be unusually bright and cheerful. Introduced about a dozen years ago, it rapidly became popular, but of late I do not think it has been quite so generally cultivated as was formerly the case. Apart from the beauty of its blossoms this Balsam possesses two other very desirable features, viz, its easy cultivation and freedom of flowering. Different individuals vary somewhat in the colour of their flowers, and there are now some three varieties in cultivation—carminea, salmona, and variegata. The varietal name of this last applies to the foliage, but the plant usually presents a somewhat diseased and unhappy appearance. There is, as far as I am aware, no white-flowered variety, though the name of *Impatiens Sultani alba* is occasionally to be met with, but the plant to which this name is applied is the allied *I. flaccida alba*, somewhat in the way of, but quite distinct from *I. Sultani*. When the gorgeous coloured *I. Hawkeri* was introduced great expectations were formed of it, and it was thought likely that the new-comer would prove of service to the hybridist, but, as far as I know, these anticipations have never been realised; indeed, *I. Hawkeri* has never to my knowledge produced seeds, but it can be very readily propagated by cuttings. It has not become so popular as was at first anticipated, the habit of growth having, perhaps, something to do with it, while it is particularly liable to the attacks of a minute insect like a small yellow thrips, which causes the buds to drop and the young foliage to acquire a diseased appearance, the real cause of which is often unsuspected.—T.

Two Bignonias.—I am asked by "T. M." if the two species of Bignonias named below are difficult to manage. The plants named are *B. venusta* and *B. Cherere*. If you have got room enough on the roof, you may plant these with confidence and fully expect to see them flower freely. Both will succeed under pot culture, but they do not flower well enough to warrant my advising that system. A portion of the border should be bricked off, drained, and then filled up with good rich turfy loam. They like an abundance of water during the growing season both to their roots and overhead. After the growth is completed the supply of water should be discontinued, and, without causing the plant to suffer, it should be kept somewhat dry for a time, when flowers will begin to appear. The plants should have ample room to ramble; in fact, the strong leading shoots should be suffered to reach the full length of the house before the knife is used to them. As these plants flower upon the lateral shoots these should be encouraged as much as possible. Very little pruning is necessary, saving in stopping the main shoots



The Mourning Iris (*Iris susiana*). (See p. 130.)

stopped a few times and kept near the glass, they form very pretty little specimens which may be turned to account in various ways, while a large plant or two is often useful for cutting from. A second form is *P. atropurpureus*, more liable to lose its leaves during the winter than the preceding. The foliage of this becomes of a rich purple colour when well exposed to the light. There are other species in cultivation, the best known being *P. pallidifolius*, which is far more generally met with under the name of *Reidia glaucescens*.—P.

Epigynium leucobotrys.—A great many different subjects are grown for the beauty of their fruit during the winter months, and this is one that might with advantage be added to the list of desirable plants for this purpose, as it is very pretty and quite distinct. It is a shrub nearly related to the *Vacciniums*, and indeed is by some writers included in that genus. It forms a somewhat upright growing bush, with dark green oblong

them, but, unfortunately, I have no house I can give up to their culture. I do not mean by this to infer that they cannot be grown with other plants, but the rather I am thinking what a fine feature they are when a house is devoted to their cultivation. One most important fact in regard to these exhibits of the Messrs. Veitch should not be lost sight of, viz., that of these examples having been grown within the fog radius; this conclusively proves their essential properties of withstanding its pernicious effects upon vegetation.—PLANTSMAN.

Tree Pæonies under glass.—The fact that these Pæonies when in the open ground push forth their foliage and flower-buds so early in the season that they are often injured by spring frosts no doubt prevents their being planted so frequently as would otherwise be the case, yet this very peculiarity is in their favour for flowering under glass, as with just the warmth of a green-

and sometimes cutting out a side growth when they grow too thick. When the plants get too old they should be cut quite down and the soil should be renewed, or a good part of it, without disturbing them too much, when they will soon throw up strong shoots, which must be carefully trained so as to become the leaders for a new plant. *B. Cherere* is an old plant not much known now, but still one of the loveliest and showiest climbers that it is possible to grow upon the roof. The flowers, which appear at the ends of the lateral shoots in great numbers, are large, trumpet-shaped, rich orange-red, with a yellow throat. This plant usually flowers about the beginning of July and continues in full beauty for several weeks. *B. venusta* is more often called a stove climber, but it grows most luxuriantly and flowers most abundantly in a warm greenhouse. Its beautiful flowers are tubular with a spreading limb, and the colour is rich deep orange-scarlet. These are produced during the months of November and December.—W. H. G.

PRIMULAS, CYCLAMENS AND CINERARIAS AT READING.

WE had the privilege of inspecting Messrs. Sutton's well-known and justly celebrated strains of these florists' flowers the other day. The *Primulas* are remarkably fine; the *Cinerarias* will improve; whilst the *Cyclamens* are a trifle past their best, but sufficient can be seen of the latter even now to form a correct idea of their superior quality. All of these popular flowers, with *Calceolarias* (herbaceous), *Begonias* (tuberous) and *Gloxinias*, each in their season are grown under Messrs. Sutton's personal supervision exclusively for their own private seed trade, tubers of *Begonias* and *Gloxinias*, of course, being also supplied. By growing their own stock from year to year for many years past, they have been enabled, by close observation, to effect great improvements in selected kinds; whilst by cross-fertilisation many remarkably distinct and valuable new kinds have been raised. This is now most particularly observable in the *Primulas*. The noteworthy features of their *Primulas* are the distinct and clear colours, the compact growth, with no superfluity of foliage, and the freedom of flowering. The strains of *Primulas* as seen here may be divided into two sections; those with the ordinary form of growth, and those termed the "giant" section, each of these being subdivided into the plain-leaved and the Fern-leaved varieties, and these again into single and double forms. The former of these if sown at the same time as the giant flower, the earlier of the two. There is also another beautiful strain in which a great advance has been made called the *Moss Curled*, with the foliage as much curled in some instances as in the finest *Parsley*; in these also there is great variety. In the case of each named variety there is a great uniformity in the quality, not one rogue being discernible. By artificial fertilisation each colour is kept quite true to its character, and can, therefore, be thoroughly relied upon to reproduce itself.

The following varieties are all decided acquisitions: *Pearl*, a white variety, raised by Messrs. Sutton in 1879, remarkable for its freedom of flowering, its purity of colour, and its finely fringed blossoms. *Reading Pink* has lovely flowers of a soft pink shade, deeply fringed. *Reading Blue* (plain leaf) is a very much improved strain, and a fine contrast to *Pearl*. Sutton's *Blue* is a decided advance, with Fern-leaved foliage and porcelain-blue flowers, very fine. *Reading Double Blue* is an exceedingly handsome and richly coloured new form (deeper in colour than either of the preceding), the flowers of extra size, and borne in large trusses. Anyone seeing this trio of blues cannot but be impressed with their superior quality. *Carmine Rose* is valuable as an extra early variety. Purity is a large form of Fern leaf with extra trusses and pure white flowers, with dark stems and foliage; a variety of superior constitution. *Gipsy Queen* is another distinct white Fern-leaved form, with reddish-brown leaves; a useful variety for vases. *Rosy Queen* is a very compact Fern-

leaved form, pale rosy pink in colour. *Snowdrift* is an extra free-flowering white, very early, also with Fern-leaved foliage; a standard variety. *Ruby King*, a rich ruby shade, is very dwarf, and therefore valuable in small pots. *Double White* is an unusually vigorous variety, finely fringed, very free in flowering, with large trusses, the foliage comparatively small. This should largely supplant the old *Double White* from cuttings. *Double Scarlet* is one of the brightest colours yet seen; a counterpart of the foregoing save in colour. This pair and the *Double Blue* are three decidedly valuable decorative varieties either in a cut state or on the plant, lasting so long when cut, as we ourselves have proved. *Mauve Beauty* is another fine double, with the shade of colour seen in *Clematis lanuginosa*. *Double Carmine* (improved), a very early variety, was over. *Double Crimson* is a large-flowered form of deep colour. *Double Fern-leaved Blue* is yet another break in the blue section, scarcely so deep in colour as the plain-leaved form, but valuable all the same. *Double White Fern-leaf* is another great advance, the flowers large, the trusses large and compact; a rival to *alba plena*. *Double Carnation Flake* is a form much admired, being flaked and splashed with purple on a white ground.

The giant section includes the following, well-defined forms: *Giant White*, with plain leaves, a stout-growing, but compact variety, the foot stalks short, the leaves of great substance, the flowers extra large and massive; one of the finest for exhibition. *Giant White* (Fern-leaved) is a counterpart save in foliage, the flowers of the two even larger, assuming a pale blush shade with age. *Giant Crimson* is one of the very finest of all, of the same style of growth, the flowers very large, the petals overlapping each other, the eye very distinct. *Giant Salmon Pink* has beautifully fringed flowers of a very pleasing shade of colour. *Giant Carmine*, very compact, has flowers of a rich carmine shade. In the "Gem" section, Sutton's *Gem* claims especial notice, being extremely compact in growth, with finely fringed foliage. Any cultivator of *Primulas* who has the opportunity should see the foregoing choice selection at Reading. In doing this one can select those varieties best suited to any particular purpose, whilst no one could fail to be interested in all.

Of the *Cyclamens*, it must be added that they are splendidly grown plants, whilst in the various shades of colour there are choice breaks. One with salmon-coloured flowers and a mulberry base is very noteworthy with the true *persicum* character, the growth, as in every other instance, very compact with a profusion of flower. Another has rosy-lilac flowers with the same good properties. The ordinary forms with dark bases are of a deep shade of colour and broad petal. One called *Vulcan* has intensely deep crimson flowers, one of the richest in this respect of all. Another called *Butterfly* has pure white flowers, much more spreading than usual, not at all unlike a butterfly settled on the foliage; this is an extra dwarf and compact form. The giant section is well represented by *Giant White*, *Rose*, *Crimson*, and *Purple*, all being choice selections of this strong-growing form, the *Giant White* with a crimson base being likewise an acquisition to those already enumerated.

The *Cinerarias* possess all the good properties of the florists' flowers with freedom of growth, vigorous growth and large blossoms, the colours of the selfs rich and pure, the parti-coloured forms also well marked and defined. Of the selfs, an indigo-blue was particularly handsome, a pure white also being especially noteworthy; the tipped varieties were very bright, denoting a valuable decorative strain. One of these seedlings had narrow, somewhat twisted forets, pure white in colour; this struck us as a distinct novelty likely to be much appreciated by many growers who are not so devotedly attached to what are strictly termed florists' flowers.

Lachenalias as basket plants.—*Lachenalia tricolor*, *pendula*, and *Nelsoni* are all admirably adapted for basket culture. They grow quite as

vigorously and bloom as freely grown in this way as when potted. The basket should be well lined with green Moss, which will retain much of its freshness during the time the plants are making their growth. For houses of moderate dimensions baskets that will take about eight bulbs are most suitable, but in the case of large conservatories a score or more bulbs may be put together. The appearance of *Lachenalias* in the form of such large specimens is very effective, their graceful growth being more fully displayed than when the plants stand below the level of the eye. The bulbs start naturally in the latter end of August, so that planting must not be deferred much beyond that period. A rich compost is necessary; the same as that commonly used for *Hyacinths* will do very well. As the days lengthen and the plants grow with freedom, abundance of moisture at the roots must be given, baskets naturally requiring more than pots.—J. C. B.

Ixora Westi.—When I was writing the article upon *Ixoras* to accompany the coloured plate of *I. Westi* I could not give the parentage of this lovely hybrid. Since then I have ascertained from Mr. West, through the courtesy of Mr. J. Veitch and Sons, in whose establishment at Chelsea it was raised, and by whom it was distributed, that it is the result of crossing *Ixora odorata* with *I. amboinica*. Both of these are species, and quite distinct in every respect. In *I. Westi* the robust growth of *I. odorata* is not so apparent, whilst the free-flowering proclivities of *I. amboinica* are well brought out. The truss partakes also of that of *I. odorata*, but it is not quite so large. I have not, however, observed in the offspring any of the perfume of that species. *I. Westi* has not been shown as a specimen plant so frequently as some other kinds, but if some of our well-known growers were to take it in hand, they would find it a grand acquisition by reason of its perfectly distinct colour. Being a variety of very free growth and flowering as freely, when of good size it should yet win its way with specimen plant growers. There is hardly anything of the same pleasing shade of colour as is to be found in *I. Westi*; for this reason, therefore, it should be grown for home decoration as well. I find thus far that our plants of it have wintered well, retaining their foliage in a healthy state in spite of such adverse circumstances as fogs, &c. On one occasion a well-known floral decorator expressed a wish to me that he should like to be able to obtain it in a cut state, he being quite taken with the colour, more particularly in its earliest stages whilst still of a pale shade.—J. HUDSON.

Aralia elegantissima.—This is one of the most useful for table decoration, as it lasts in good condition for such a long time. Plants which have become too tall or have lost their lower leaves should have the tops taken off and the soil kept on the dry side, which will soon cause lateral shoots to form. These, after they have grown about 3 inches, are just in the right condition for making into cuttings. Take them off with a heel and insert them in cocoa-nut fibre refuse in a propagating case where the temperature is warm and moist. After a time, roots will form when the rooted cuttings should be potted off. By treating the above *Aralia* and also the allied kinds in the manner stated above, I am enabled to keep up a stock of useful plants. Many people are under the impression that these *Aralias* must be grafted to increase stock, but it is certainly an erroneous opinion. *Aralias* are expensive plants to buy, and this no doubt is the reason why they are not more used than they are for general house decoration.—A. Y.

Iris chinensis.—What Mr. Buxton says (p. 97) of the terms in which I spoke of the treatment of this lovely winter-flowering *Iris* is strictly correct, and I had my first lesson on the matter from that excellent lady gardener, the late Mrs. Rawson, who made a speciality of this *Iris*, and also of the *Belladonna Lily*. Perhaps nobody ever grew these two plants better. There can be no doubt about the plan I described being effective, as proved by the stout flower-scapes at present on my own plants,

which were only repotted last spring after flowering; of course to get flowers you must retain plenty of rhizome when repotting. I see no reason why the more loamy compost should not answer, but I should say that the kinder treatment given to Col. Johnstone's plants being kept under glass all the year round may have something to do with the good results, and then how often we succeed as well as fail with plants without knowing the reason why. Anyhow, I agree with what Mr. Buxton says of the merits of this greenhouse Iris; the flowers are beyond praise, and they last so long, so that any amount of care spent upon it would be justified. There certainly is no difficulty in getting plenty of flowers once you rightly manage the repotting, especially as to date. Get plenty of good growth, good-sized, dark green leaves in summer, and flowers must follow if the plants are taken into the greenhouse before cold rains or frosts come.—J. WOOD.

SHORT NOTES.—STOVE AND GREENHOUSE.

Hardy Azaleas.—I have recently seen several notes about these charming shrubs. I wish to put in a plea for *A. arborescens*, with pure white red-stained flowers, having just the fragrance of *Jessamine*. It is very hardy, of free growth, and about the latest to come into bloom—not before July. T. SMITH.

Impatiens Hawkeri.—"J. H. B." sends me a nice spray of this plant in full flower. It is indeed a glorious plant. The sender says he has three plants which have been quite a blaze of beauty all the winter. The colour is very brilliant carmine, over which is a tinge of blue, the centre being white. It was introduced by Mr. Wm. Bull, of Chelsea, some few years ago.—W. H. G.

Dracæna Alsace-Lorraine.—J. Hubbard sends me a leaf of this variety for an opinion. I do not know anything of its origin, but it is a very pretty variety. The leaves in the centre are very rich and deep purple, margined with rich scarlet; the young leaves, I am told, are of a uniform brilliant scarlet. This variety, if of good habit, should become one of the leading kinds.—W. H. G.

Echeverias in winter.—These succulent Cape plants are very useful in the winter, as they flower on after *Chrysanthemums* are over. We notice them with pleasure as table plants in London dining-rooms. They remain long in flower, are very easily grown, and last for some time in a town atmosphere, which is a consideration. They are grown in the greenhouse in winter, and as soon as they bloom are taken where wanted.—Field.

Brunsvigia Josephinae.—Can anyone tell me how often *Brunsvigia Josephinae* blooms in a wild state, yearly, or not so often? I have what, judging by Baker's "*Amaryllideæ*," seems a flourishing plant, with fourteen very large leaves, 4 inches to 5 inches across and 2 feet long. It has increased its leaves by four in the three years I have had it, but has never flowered. B. gigantea remained dormant two years, and is now growing well. Does not this suggest that they may be naturally irregular bloomers, taking their time about it?—W. S.

Calceolaria fuchsifolia.—Although but little known or cultivated at present, this semi-shrubby species of *Calceolaria* makes a very pretty show during the present month. Its flowers are of a bright yellow, a colour which, in some shade or other, is common to all but a few of the wild forms of this genus. The foliage, however, is very distinct, the leaves being smooth, dark green, slightly toothed, and, as the specific name implies, very like those of a *Fuchsia*. It is well adapted for cultivation in the greenhouse, being dwarf and easily made to assume a compact bushy form. It strikes readily from cuttings, which may be taken at any time during spring. The young plants should be occasionally pinched, and kept growing throughout the summer under ordinary greenhouse treatment, potting them in a light loamy compost. By flowering-time they will be about a foot high and nearly as much through, and may be conveniently accommodated in 6-inch pots. Such plants ought to bear seven or eight of

the elegant panicles of flowers. The species is a native of the mountains of Peru, whence it was introduced in 1878. On March 29 of the following year a coloured drawing of it appeared in THE GARDEN.

ORCHIDS.

TRICHOPILIA SUAVIS.

THIS some years ago I used to look upon as one of the easiest to grow; but, to my surprise, a friend said to me the other day that it would not grow at all with him. The finest and most freely-flowered plants that I have ever seen were grown by Mr. John Day at Tottenham. *Trichopilia suavis* was first found by Warszewicz in 1848 growing upon trees on the volcano of Chiriqui at some 8000 feet elevation. It is also found growing in similar positions some few thousand feet lower down, and consequently cannot bear a very high temperature. A pure white variety has lately flowered. It appeared quite unexpectedly, I believe, and must have been a surprise to its possessor. There is, however, a tinge of yellow in the throat, which serves to enliven it, and the flower has the same exquisite fragrance as that of the typical plant. The typical plant has pure white flowers, spotted more or less with rich, bright rose-coloured spots, tinged with yellow in the throat. In the variety alba the flowers are pure white and quite devoid of the spotting. To grow this plant well, I mix an equal part of good brown peat fibre and chopped Sphagnum Moss, and with this at the time of potting I use some sharp Bedfordshire sand. The pots should be well drained and the plants set upon a slight mound raised above the rim of the pot. Set the plants when potted in the cool end of the *Cattleya* house, or, lacking this, in the warm end of the *Odontoglossum* house. *Trichopilia*, I find, do not require much water at the roots; but they revel in a nice moist atmosphere, which, however, requires to be moderated in the winter season. I have found, too, a light syringing beneficial in building up strong pseudo-bulbs and stout leathery leaves in place of the thin, spotted foliage, which I frequently see upon the plants growing in the strong heat of the Brazilian house.

W. HUGH GOWER.

Epidendrum aurantiacum.—J. Wheeler, in sending a bulb with leaves of this plant, says, "Can you tell me what this plant is? I bought it for *Cattleya Skinneri*, but it has small orange-coloured flowers, which did not open." The name I have given above. It was sent home by Mr. Skinner nearly fifty years ago. It was afterwards found in Mexico, and I think it is the plants from this region which produce the small flowers which do not open. The form from Guatemala, I think it is, produces larger open flowers of a deep orange-red, which last a considerable time in beauty.—W. H. G.

Angræcum eburneum.—The delicate constitution of the smaller *Angræcums*, which necessitates for that group very careful cultivation, is, fortunately, by no means so marked in this species. Like its better-known ally, *A. sesquipedale*, with which it simultaneously comes into flower, it will thrive quite well in the warm house without so much regard being paid to position and other conditions in its treatment as such species as *A. caudatum* or *A. modestum* require. It is the strongest growing representative of this genus. The flower-spikes are quite erect and sometimes over 2 feet in length, the most prominent feature of the blossom being the large, broad, cordate lip, which is of a pure ivory-like white. The value of the plant is enhanced by the long time the flowers last, as well

as by the pleasant perfume they give off. Most of the plants in cultivation are probably from Madagascar, where the species was first found. It was afterwards discovered in that remarkable group of islands in the Indian Ocean, the Seychelles, where the double Cocoa-nut Palm also has its only home.—B.

Cattleya Dowiana and aurea.—"H. L." asks why these two Orchids do not flower and what temperature they require. As soon as the bulbs are made up the plants should be placed in cool quarters, where the thermometer is allowed to fall to 50° or thereabouts as a minimum. In the cultivation of the three *Cattleyas*, viz., *aurea*, *Dowiana*, and *gigas*, the one great point is to rest them cool enough before the buds get into a forward state. Once do this and you will prevent autumn and winter growth, which gets them the name of being shy bloomers, because the growth which is made through the winter months is not sufficiently strong to make a sheath. "H. L." will not be able to accomplish this this season, but if he will take the matter in hand next autumn and prevent his plants starting say until about the present time, he will be able to flower them from the next growth. These *Cattleyas* require a lot of heat when making their growth, but a good rest afterwards.—W. H. G.

Lælia peduncularis (G. Sheppard).—This is the name of the Orchid flower which you send. It is considered a variety of the plant called *rubescens*, but both Lindley and Reichenbach accorded it specific rank. It is more robust in habit than *rubescens*, but the flowers differ considerably, the colour being rich rosy magenta. The lip has a distinct spot of rosy crimson at the base, and immediately in front of this a zone of pure white, leaving the front lobe of a rosy magenta. This plant does well in a hanging earthenware basket, which should be well drained. It requires a liberal amount of water during the growing season, but only just sufficient during the winter to prevent the bulbs shrivelling.—W.

NEW ORCHIDS CERTIFICATED IN 1892.

AT the July meetings the following were duly recognised: *Cypripedium Stonei candidum*, a very pale form with the other good qualities of the type, the dorsal sepal the most distinct feature; *Dendrobium crystallinum* (General Berkeley's var.), a very pretty variety, shown in profuse flower; *Phalænopsis Artemis* (*rosea* × *amabilis*), a choice hybrid in a choice genus, a rosy tint suffusing the flowers, which are intermediate in size; *Cattleya Schilleriana Lowiana*, in the flowers of which the singularity is the close resemblance of the lip to *Zygopetalum Mackayi*; *Cattleya Rex*, in which the flowers, as regards size, take after *C. Mendeli*, a pale buff colour taking the place of the pink in the petals and sepals, the lip being inclined towards *C. Dowiana*; *Cypripedium Youngianum* (*C. Veitchi* × *C. lævigatum*), another hybrid between two quite distinct species, and an extremely fine one also, being shown in first-rate condition with large flowers; *C. Bryan* (*lævigatum* × *Argus*).—This belongs to the class of dark-coloured hybrids, being also a distinct one.

In August were exhibited *Lælio-Cattleya Ingrami* (*L. pumila Dayana* × *C. aurea*), a remarkable hybrid, with flowers of an intensely deep crimson in the lip, the habit dwarf; *Cypripedium caudatum* (*Luxembourg* var.), with larger flowers also richer in colour, a very beautiful variety of this choice species; *Lælia crispa superba*, which is well denoted by its name, being one of the finest forms of *Oncidium macranthum nanum*, a distinct and very pretty variety, the shorter spikes being a decided advantage; *Calanthe Sanderiana*, a species with dark purplish-coloured flowers, very distinct; *Lælia Oweniana* (*L. Dayana* × *L. xanthina*), in which the last named parent is almost lost, the flowers possessing the rich colouring of *L. Dayana*; *Lælio-Cattleya Baroness Schröder* (*C. Trianae* × *L. Jonghiana*), a lovely hybrid, with all the good qualities of *C. Trianae*, which it resembles the most

During September were shown *Cattleya Oweniana*, which has some affinity to *C. aurea*, but distinct, inasmuch as the sepals and petals are a straw white and the lip of a deeper shade of crimson, a valuable acquisition; *Cattleya speciosa Sanderiana*, a very lovely and distinct form, the sepals and petals pure white, whilst the lip has a golden blotch; *Sophro-Lælia Veitchi* (*L. elegans* × *Sophranitis grandiflora*), an altogether remarkable hybrid, the flowers in size being nearest to the latter parent, whilst in colour they are paler—a rosy crimson suffused with purple, a fine production; *Lælia Turneri superbissima*, the flowers of which are deeper in colour than those of the species, particularly in the lip; *Aerides Augustianum*, an altogether distinct variety, pale in colour and of medium growth; *Cattleya Statteriana*, which belongs to the *C. aurea* family, being a superb variety, intensely rich in its colouring, the lip remarkably fine, being much expanded; *Cattleya Minucia* (*C. Loddigesi* × *C. labiata*), which approaches more nearly the former than the latter parent in habit of growth, but has some of the fine colouring of its other parent. October was not productive of many new varieties, no awards being made at either meeting.

In November, however, this deficiency was fully atoned for, when the following were shown: *Cymbidium hybridum Winnianum* (*C. eburneum* × *C. giganteum*), the plant shown being a finely grown one with six spikes; the flowers partake largely after *C. eburneum*, the spikes and growth after *C. giganteum*; it is in all respects a notable hybrid possessed of remarkable vigour: in colour the flowers are a creamy yellow with crimson spots on the lip; *Cattleya leucoglossa* (*C. fausta* × *C. Loddigesi*), a hybrid on one side of the third generation, the *C. fausta* parentage being *C. exoniensis* × *C. Loddigesi*; in this descendant the colour is a delicate rose, with yellow on the lip, the sepals and petals finely shaped, clearer than in *C. Loddigesi*, a very handsome hybrid as well as a fine feature from the point of hybridisation; *Spathoglottis Viellardi rubra*, deeper in its colour than the type, and altogether a choice variety; *Cattleya labiata Sanderæ*, a variety with bold flowers of large size and fine shape, rosy mauve in colour, with crimson-purple lip, one of the finest forms; *Lælia Perrini nivea*, a pure white and very charming form of a good Orchid; *Lælia elegans excellens*, with flowers of fine proportions and very rich in their colouring, particularly in the lip; *Cypripedium Arthurianum pulchellum* (*C. Fairrieianum* × *C. Arthurianum*), in which the parentage of the first-named is very clearly seen, whilst it has the fine and distinct properties of *C. Arthurianum*, itself one of the choicest hybrids; *Cypripedium Morganæ burfordiense*, a very fine form of this, one of the grandest hybrids ever raised amongst the class; in this plant the colouring was deeper than in the type; *C. Tityus* (*C. ænanthum superbum* × *Spicerianum*), an extremely interesting hybrid; on the side of its first-named parent it is of the third generation as a hybrid, in spite of which its relation to *C. Spicerianum* is evident; *Cattleya labiata albanensis*, a pale form of *C. labiata* with a fine lip; *Catasetum tubulare* var., a form not particularly handsome; *Cypripedium Perseus* (*C. Sedeni porphyreum* × *C. Lindleyanum*), best described as *C. Sedeni* greatly improved, with richer flowers, very prettily spotted; *Lælio-Cattleya Aurora* (*C. Loddigesi* × *L. pumila Dayana*), with much resemblance in growth to the latter with more of the colour of the former parent.

At the December meeting there was a goodly number of new kinds, as follows: *Cattleya labiata alba*, a pure white variety, with the lip finely fringed; in its colour it is the best yet seen; in fact, it is supposed to be the first white form that has been shown; *Sophro-Cattleya Calypso* (*C. Loddigesi* × *Sophranitis grandiflora*) is a most beautiful hybrid, its parentage being very marked; the flowers are of a rich rose colour suffused with violet in a faint manner, the lip being distinctly marked with golden-yellow and tipped with deep rose; *Lælia anceps Oweniana*, a distinct form of rich colour, with lines of white upon the sepals and petals;

Cattleya amethystoglossa (Selwood var.), quite distinct enough in the ground colour of the flowers to merit attention (a creamy white), the lip a rosy purple; *Masdevallia hybrida McVittæ* (*M. tovarensis* × *M. Veitchi*) has pale pink flowers with the habit of *M. Veitchi*; *Cypripedium Johnsonianum* (*C. nitens* × *C. Lawrenceanum*), a fine rich purple hybrid, the dorsal sepal very distinct; *Lælia Fincheniana* has pure white sepals and petals, the labellum purplish violet and white; it is in the way of *L. anceps*. This completes the list of new varieties which have been duly recognised, save those to which botanical certificates were awarded, most of which whilst being interesting are scarcely ever so particularly handsome as to claim special notice.

ORCHIS.

***Coelogyne cristata hololeuca* (G. Turner).**—I have received flowers of this plant from a small grower who says: "This has cropped up among some imported pieces that have been growing with me for about five years, and this season it bloomed." My friend evidently had this plant in his possession at a time when it was very rare, but it is now becoming more plentiful. It still commands a good price, pure white flowers being so much in request. The blooms of this plant are wholly pure white. I prefer a flower with a stain of yellow in the throat, such as is to be found in the variety *Lemoniana*, for instance, which gives it life and brightness. The plant is somewhat more lax in its growth than the typical plant.—W. H. G.

***Cypripedium spectabile*.**—It is a well-known fact that even in the hands of good growers of hardy plants generally success with this splendid Orchid is the exception rather than the rule. I have not yet met with anyone who can tell us a certain or royal way to success. To the general failures there may doubtless be many contributing causes. A few points one may have become rather certain about, such as what the plant does not like or even what the plant should absolutely have. For instance, I feel sure that the plant does not like to be set very deeply in the half rotten stuff we usually employ. Neither should its roots in their naked state be pressed together *en masse*, for these are in the wild state no doubt held asunder by pieces of vegetable matter. I admit it is difficult to solidify the wigs of roots when planting, but I would do it with silver sand rather than leave it undone. This would point to the importance of the imported roots being sent with all the soil they would fairly carry. This would no doubt be costly to the importer in the way of carriage, but it would be the less costly and safer plan to the planter, who would doubtless be only too glad to pay an extra price for such roots. Failing such roots, and dealing with those that are in large masses, Mr. Dod's plan of trimming off the wigs should commend itself. I am pretty confident that two most essential things to do are to afford the plant a moist shady place, and above all to secure firmly the young growths against wind. I have seen these snapped off by the half dozen, and after a storm even those that have not been actually detached have never looked healthy again. It only seems reasonable that the plants should have support of this kind when we remember that the foliage is of a very top-heavy character, and the base of the stem thin and somewhat brittle. This *Cypripedium* at home mingles with a large amount of other herbage, and even bog-loving shrubs, so as practically to have more shelter and mechanical support therefrom than we could actually afford without a deal of care in our gardens.—J. WOOD.

SHORT NOTES.—ORCHIDS.

***Lælia harpophylla*.**—S. Johnson sends me the finest flowers of this species I have ever seen. They each measure over 4 inches across, broad in proportion, the colour bright cinnabar-red, the narrow lip reflexed and with a crisped margin. I have not seen much variation in this species, and am glad to record such an advance. G.

***Cattleya labiata Trianæ*.**—From Mr. J. Broome, of Llandudno, comes a very good and

brightly coloured form of this plant, with large and broad petals of a soft flesh colour, lip broadly marked in front with very bright magenta, which runs in a triangular streak into the deep orange in the throat. It is a very handsome variety.—G.

***Cattleya Trianæ alba*.**—"W. W." sends me a very fine flower of this charming variety. The flower measures nearly 8 inches across, the sepals and petals being round, full and pure white, the lip also pure white with a stain of pale yellow in the throat. It is pleasing to find this variety has become more generally distributed than was the case a few years since.—W. H. G.

***Cattleya Percivaliana*.**—F. M. Burton sends me two distinct flowers of this variety for an opinion. The form with light sepals and petals would be a very nice flower had it a better lip. The dark form is a better flower, but it is wanting in the rich orange, which gives such a warmth to good varieties of this plant. The flower of *Cattleya chocoensis* is very good, but this Orchid has lost favour with the majority of *Cattleya* growers because its blooms never fully expand.—G.

***Lælia anceps Dawsoni*.**—Hugh Nicol sends me a flower of this beautiful variety, saying it is from a plant which formed part of the original one imported by the Messrs. Low and Co., now many years ago. The bloom is rather small, pure white; the lip is also white, the front lobe flat, and of a rich rosy purple, having at the base immediately in front of the throat several deep yellow crests, the side lobes streaked with radiating lines of rich purple. This variety is one of the rarest and best that has come to hand out of all the white forms, and I was very glad to see it again.—W. H. G.

GARDEN FLORA.

PLATE 897.

THE ONCOCYCLUS GROUP OF IRISES.

(WITH A COLOURED PLATE OF 1, IRIS GATESI;
2, I. LORTETI; 3, I. LUPINA.)*

THE editor, in asking me to write a note in explanation of the accompanying plate, suggested that I should say a few words about the whole group, of which the three Irises here depicted are beautiful members.

Everyone knows *Iris susiana*, "that Flower de luce," says Parkinson, "which for his excellent beautie and raritie deserveth the first place." It seems to have become known in Western Europe about the middle of the sixteenth century, having been introduced from Constantinople. It very early became a favourite, and seems to have been cultivated with considerable success, for there are few collections of specimens, or of drawings of Irises, in the seventeenth and eighteenth centuries which do not include *I. susiana*. The specimens preserved or figured vary a good deal in size, and Parkinson distinguishes two kinds, the greater and the less, the latter differing from the former in that "the flower is neither so large or faire, nor of so perspicuous marks and spots, nor the colour of that lively (though darke) lustre." "These," he continues, "have been sent out of Turkie divers times, and it should seem that they have had their origin all from about Susis, a chiefe citie of Persia. They have been sent unto us and unto divers other in other parts from Constantinople under the name of *Alaia susiana*, and thereupon it has been called, both of them and us, either *Iris chalcadonica* or *susiana*, and for distinction, major or minor; in English, the Turkie Flower de luce, or the Ginnie Hen Flower de luce, the greater or the lesser."

* Drawn for THE GARDEN by H. G. Moon from flowers sent May 30, 1892, by C. G. van Tubergen, Jun., Haarlem. Lithographed and printed by Guillaume Severeys.



IRIS
1. IRIS
2. IRIS
3. IRIS

For more than two centuries *I. susiana* remained isolated as a species, wholly distinct from all other kinds of *Iris*, until the end of the last century and the beginning of this, when *Iris iberica*, *I. acutiloba* and *I. paradoxa* were discovered.

In 1846 Siemssen, having the opportunity of observing at Jena in a living condition plants of

A natural group—that is to say a group the members of which are not merely superficially alike, but possess such resemblances as to justify the view that they are “related by blood,” that they have a common ancestry—cannot be defined by a single token. It is the aggregate of resemblances which shows their affinity, and if we attempt to insist on any one character, it will sooner or later fail us.

That a number of *Irises* do, with the three original *Oncocyclus Irises*, form a fairly well-defined group there can be no doubt, and the term *Oncocyclus* has been now in use so long, that much may be said in favour of retaining it, it being understood that it is employed not in its original natural meaning, but in a new and artificial sense.

The characteristics of this group are in the main as follows:—

In the rhizome the young bud, instead of being attached to the stock by a broad flattened base, and projecting slightly, stands out in the form of a nipple, the base of which is often much constricted. In many forms the attachment is lengthened into a cord, often a very narrow one, so that the bud is at the end of a “stolon.” According to the narrowness and length (or the reverse) of the connection of the bud with the stock, the rhizome may be spoken of as more or less spreading or creeping, or more or less compact.

The foliage, as compared with that of most other *Irises*, is scanty; the leaves are relatively narrow, sometimes very narrow, and in the majority of cases very falcate or sickle-shaped.

The stem or scape, rarely exceeding 1 foot and generally a few inches only in height, bears a single flower (accompanied in rare cases by the rudiment of a second one), which is conspicuous by its size, by its colouring, or by its markings, or by all three. The spathe valves are large and long, generally inflated, green, and persistent for some time after flowering. The flower always has a perianth tube above the ovary of some considerable length. The outer perianth segment or fall bears on the claw and hinder part of the blade a number of hairs, which in some species are sparsely scattered and generally large and complex in structure, but which in other species are gathered into a more or less compact “beard,” in which case the individual hairs are smaller and simpler in structure; in some species an intermediate condition is met with, in which a more or less compact median beard is flanked by scattered hairs. The inner perianth segment or standard very frequently bears hairs on the claw, but these are usually scanty and very often wholly absent.

The fall varies much as to relative size and as to shape in the different species, but the standard is relatively large and, being in all cases larger than the fall, and in most cases markedly so, is very conspicuous. The crests of the style are also nearly always large and conspicuous.

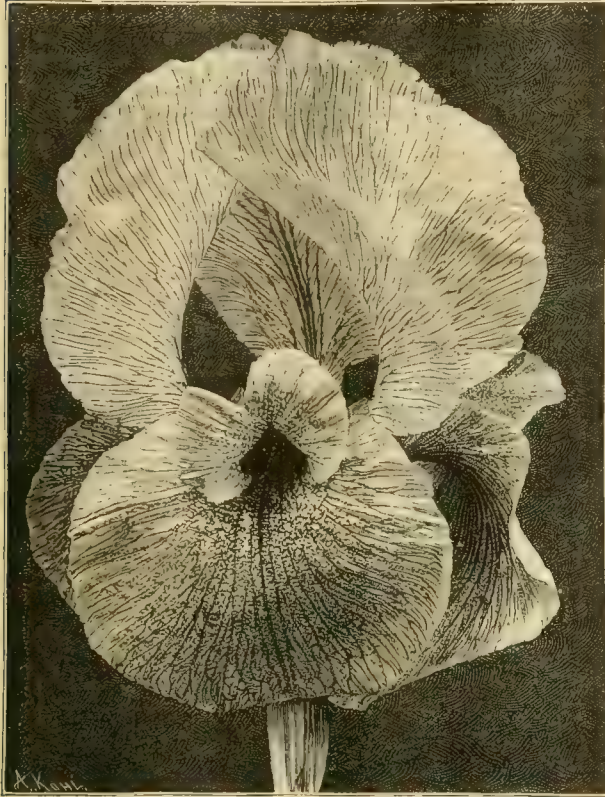
The colour of the whole flower is rendered striking, sometimes extremely so, sometimes less so, by the contrast between the colour of

the veins and that of the ground substance, the coloured lines of the veins running frequently into an irregular network or being broken up into a series of dots or blotches. And the fall in nearly all cases bears on the blade in front of the hairs or beard a conspicuous large patch of deep colour, which serves as a “signal” for insects. The veins are, as a rule, not only extremely bold, but of a somewhat peculiar nature. Each of them shows a thin median streak of a deeper, well-defined colour, flanked on each side by a band of lighter colour, which is not only diffuse, but irregular in outline; it breaks away into the surrounding ground in many different ways. The outline of the whole vein is frequently a regular or irregular zigzag.

The three-sided ovary becomes after fertilisation developed into a very large also three-sided capsule, which when ripe splits at the apex and for some little way down from the apex along the sides in a characteristic manner, the axial junction remaining intact, so that the three chambers do not, as in most other *Irises*, come apart. It contains a variable, but generally large number of relatively large seeds. In the fresh ripe seed the wrinkled body of the seed, generally brown or reddish brown, contrasts strongly with the fleshy-looking creamy white appendage called a strophiole, which is sometimes as bulky as itself.

Of the above features, those on which Siemssen insisted were the long perianth tube, the disproportionate size of the standards, the diffuse beard, or collection of hairs on the fall, the dehiscence of the capsule, and the strophiole of the seed.

Some of these characters, for instance, those pertaining to the root and seed, are shared by certain other *Irises*, as, for example, *I. Korolkowi*, but these latter bear two or even three flowers on the stem, have flowers of a different form, and may by other characters as well be distinguished as a separate, though allied group, to which I have given the name *Regelia*. The characters which I have given above as belonging to the *Oncocyclus* group are exceedingly consistent. When, for instance, a plant is sent to me from its native home and reaching me withered and



Iris Gatesii.

I. acutiloba and *I. paradoxa* which had been brought from the Caucasus by Koch, was so struck by their peculiar features that he proposed to found a new genus *Oncocyclus*, derived from *ὄγκος*, a curve (allied to the Latin *uncus*), and *κύκλος*, a circle. Though he does not explicitly state so, he apparently meant this name to denote the orbicular and curved shape of the standard, the large development of which as compared to that of the fall, so conspicuous in the above two species, served him as one of the distinctive marks of his new genus. Siemssen further recognised that *I. iberica* also belonged to his new genus; but, curiously enough, makes no reference to *I. susiana*. The new genus, however, was not generally accepted, and with reason; but the name *Oncocyclus* may be conveniently used to denote the group or section of the genus *Iris* to which the above-named *Irises* belong.

Since that time, and especially of late years, several new species have been found (and many of them, thanks chiefly to the energy of Herr Max Leichtlin, have been brought into cultivation) which are obviously in such close affinity to the four *Irises* just spoken of, that they must be considered as belonging to the same group, even though the features by which their affinity is shown does not include the particular feature on which the name of the group is founded. This is a difficulty which is always apt to arise when the name of a group is founded on some one structural character.



Iris iberica. Engraved for THE GARDEN from a photograph sent by C. G. van Tubergen, Jun., Haarlem.

dry, possesses a root such as I have described above, the remains of narrow falcate leaves, and a stem, bearing within large conspicuous spathe valves the remnants of a solitary flower, in which one can perhaps only recognise that there is present a three-sided ovary with a fairly long tube, I have no hesitation in putting it down as

an *Oncocyclus Iris*, and I feel sure that I may look forward to a flower which will certainly prove interesting and may be very beautiful.

The species, so far known, which belong to the group thus defined are as follows:—

I. SUSIANA (Linn., *Sp. Pl.*, 55).—This is so well known that I need say little about it. Its distinguishing features may be briefly summed up thus: The root is compact, the leaves are relatively large, sometimes a foot or even more in height, and nearly an inch in breadth, distinctly yellowish green. The flower is relatively very large; the falls are rather longer than broad; the styles are bent down so as to be nearly horizontal, and the prevailing colour, a dark grey, is produced by numerous veins and dots of a dark almost black-brown with a slight tinge of purple* on a creamy white ground, which acquires a brownish hue owing to the diffusion of colour from the margins of the veins and dots. The hairs of the fall are black. As the flower withers the purple constituent of the colour becomes very prominent.

I. IBERICA (Hoffman, *Comment. i.*, 41).—I take this second since it is the best known next to *susiana*, and each of the two may serve as a standard for a group of less well-known species. The distinguishing features of *I. iberica*, whose home is in the Caucasus and adjoining regions, are as follows: The rhizome is compact, the several parts, buds and branches being more slender than in *I. susiana*. The foliage is dwarf, the leaves being narrow, often not more than a quarter of an inch in breadth, and short, 4 inches to 6 inches in length, but very falcate. The stem is short, sometimes only 1 inch, and rarely more than 6 inches or 8 inches in length. The flower, though varying in size and generally smaller than in *I. susiana*, is large enough to seem wholly disproportionate to the foliage. The fall is more or less orbicular, remarkably concave, and the style is not merely horizontal in direction, but curved sharply downwards so as to rest in the hollow of the fall, and an insect crawling in search of nectar up the tunnel, of which the style forms the roof, has at first to ascend almost directly upwards. While the fall is marked with bold netted, irregular coloured veins, the veining of the standard is thin and delicate, often hardly visible; hence in this respect the fall and standard contrast strongly with each other, whereas in *I. susiana* they are much more alike. On the blade of the fall, just in front of the end of the style is a very conspicuous signal, in the form of a patch of deep colour with a very sharply defined outline, marking the entrance to the nectar tunnel. Whereas *I. susiana* varies on the whole very slightly and merely in size and depth of colour, *I. iberica* varies very widely, not only in size, stature, but in colour and in the character of the venation, especially of the falls. In what is perhaps the most common form, the general colour of the fall is a peculiar dark brown-purple, difficult to describe, due to thick irregular, netted, more or less diffuse veins and dots, which almost hide the creamy white ground colour, while the white ground colour of the standard is so little broken by these purple veins or small dots as to appear almost white. The veins of the fall may be very thick and diffuse, running into irregular blotches, or may be thin and comparatively speaking sharply defined, and hence the prevailing tone may be more or less brown or more or less purplish black. The signal patch is very constant, being of rich deep, almost black-purple. The colour of the standard is very variable, due chiefly to the diffusion of one or another hue over the ground substance; thus it

may be a light bluish purple, almost a blue, or a reddish purple, almost a red, a creamy white tinged with brown, so as to be a stone colour, and so on. Since *I. iberica* is not a florist's flower, it is unnecessary to give each plant exhibiting any individuality of colour or form a separate name; otherwise from what I have seen myself I could easily throw into circulation some two dozen names or so. Regel (*Gartenflora*, t. 386) figures a var. *ochracea*, in which the fall is a rich orange tinged with brown, and the standard a nearly pure white. This I have not seen, but the var. *Belli*, mentioned by Mr. Baker ("*Iridee*," p. 20) with dark lilac standards, seems to me one of the many varieties which have come before me. All these are beautiful flowers, even the least charming of them to my mind far exceeding in beauty *I. susiana*; but I give the palm to two varieties from Kurdistan, which I owe to the great kindness of the Rev. Dr. Raynolds, of Van. One of these is remarkable for the large size of the flowers, which combine the magnitude of *I. susiana* with the graceful outline and purity of colour of *I. iberica*. The other, though rather small, seems to me by its exquisite tints to be one of the most lovely flowers I know; the standard is a pure dead solid white, with only a few hardly visible black-purple spots around the base of the claw; the fall is marked with a thick irregular network of a chocolate-brown, while the signal is a deep crimson, and the style is almost quite black. The plant known as *I. iberica* var. *van Houttei* appears to me to be one of the hybrids between *I. iberica* and *I. susiana*, of which I will speak later on.

I. GATESI (Foster, *Gardeners' Chronicle*, 1890, ii., p. 18).—This was discovered in the country above Mardin, in Armenia, by M. Max Leichtlin's collector Sintenis in 1888, and is named after the Rev. T. G. Gates, of the American Mission at Mardin, through whose kind assistance Sintenis came to know of it. It comes very near to *susiana*. The rhizome is perhaps still more compact, and the foliage smaller, shorter and narrower, and of a darker green than in *susiana*. The stem is taller, reaching 1½ feet or even 2 feet, and the flower when well grown larger than that of any *susiana* I have ever seen. The fall is relatively broader, more than 4 inches across, and curved so as to be convex from side to side as well as from above below. The standard is nearly orbicular and very large, 5 inches or even more across, and when the flower is fully expanded in a calm atmosphere stands erect, so curved as to be concave inwards both from side to side and from above below, so that the surface is somewhat saddle-shaped. The prevailing colour of the specimens so far cultivated is, when the flower is seen at a distance, a soft delicate grey, brought about by very thin clear veins (those of *susiana* are thick, blotchy, irregular) and minute dots or points of purple on a creamy white ground, the dots being predominant on the fall and the veins on the standard. The hairs on the claw beneath the style, grey or brownish flecked with dark purple, are crowded irregularly into a diffuse beard, which, bifurcating in front, embraces a purple patch of no great size or conspicuousness produced by the aggregation of purple dots. The style, whose yellowish ground colour is sprinkled with purple dots, is bent horizontally close down on the claw of the fall and bears two large spotted and streaked semicircular crests with finely serrated edges. The ripe capsule is exceeding large, as much as 5 inches in length. To my mind, this *Iris* when seen at its best, with standards and falls fully unfolded, and its delicate tint not yet marred by bruises, rain-drops, or the beginnings of withering, is of surpassing grace and beauty. The accomplished artist has doubtless faithfully represented in the plate the specimen given him, but it was not in good condition; the fall especially is too much folded up, the standard has in part collapsed, and the colour is not that of the flower in its pristine beauty. The substance of the petals even in best grown specimens is somewhat flimsy; the flower does not bear travel, and even gentle winds soon deform its natural grace of outline. As far as I can learn, all the flowers which have been borne by the roots, which Sintenis sent to M. Max Leichtlin have the

same grey hue which I have just described; but Sintenis, in announcing his discovery of the plant to Max Leichtlin, spoke of it as of a sky-blue colour. Whether the blue was that of a dried specimen (for as in *susiana* the blue or purple becomes prominent after death), or whether there is a sky-blue variety remains to be seen. If the latter does exist, I cannot but think that it will appear to have touched the very limits of graceful beauty.

I. SARI (Schott, Baker, *Gardeners' Chronicle*, 1876, ii., p. 788).—This, which was described by Schott in MS., but first published by Mr. Baker, derives its name from the river Sar, in Cilicia, in the neighbourhood of which it was found. It comes near to *susiana*, having a compact rhizome, relatively large foliage, a fairly tall (a foot or less in height) stem and large flowers; indeed the var. *lurida*, which alone I have seen in cultivation, is often mistaken by a casual observer for *I. susiana*. In this var. *lurida*, the flower of which is rather smaller than that of *susiana*, the fall is somewhat narrower than in *susiana*, distinctly convex from side to side, and marked with thick irregular netted dark brownish purple veins, the colour of which diffuses into the ground substance between; below the end of the style the blade of the fall bears a "signal" patch of dark almost black-purple, but the outline of this is much less sharply defined than in *I. iberica*. Beneath the style on the claw is seen a diffuse beard of scattered hairs, which are yellow in the median region, but purple towards the sides. The orbicular standard is marked throughout with thick veins and numerous dots of very dark purple. The style, which is reddish brown with a purple tinge, is not bent down as in *I. susiana*, and still more in *I. iberica*, but hardly horizontal, even inclined upwards. As a minor point, it may be mentioned that the scape is to a much larger extent covered by clasping leaves than is the case with *I. susiana*, in which the scape is largely naked. On first opening the flower has a general dark grey appearance not unlike *I. susiana*, but as it grows older the purple hue becomes more predominant, and when the flower begins to wither becomes very marked, at least in the standards; but though the several plants in cultivation vary somewhat as to the prominence of the purple, I have not yet seen a perfectly fresh flower with so distinctly lilac standards as that figured in *Botanical Magazine*, t. 6960. I am now speaking of the var. *lurida*; in the type, as described by Schott, the fall as well as the standard is a bright lilac, but this I have never seen.

I. HEYLANDIANA (Boissier, *Fl. Orient.*, v., 130).—This species, which is found in Mesopotamia, comes near to *I. Sari*. The foliage is perhaps narrower and the scape more completely clothed by clasping leaves. Both fall and standard are marked with brown-violet or black-purple veins on a dingy white ground, the purple hue not being so prominent as in *I. Sari*, and the white ground coming more to the front. The hairs on the claw of the fall are not purple, as in *I. Sari*, or black, as in *susiana*, but white, more or less tinged with yellow.

I have in cultivation a plant under this name which I owe to the kindness of M. Max Leichtlin, and which answers fairly well to Boissier's description, save that the root is compact and not creeping. If my plant is the true one, then the differences between *I. Heylandiana* and *I. Sari* are perhaps hardly of specific value; indeed, I may remark that in general among these *Oncocyclus Irises* there has been a tendency to establish species on very slight differences. In my plant the claw of the standard bears a few scattered hairs, which I have not seen on *I. Sari*; but this is a very minor feature.

I. LORTETI (Barbey, *Herbor. au Levant*, p. 178, t. 7).—This most beautiful *Iris* was discovered some years ago between Meis and Hounin, in South Lebanon, by Dr. Lortet, the accomplished naturalist of Lyons. It was described by Barbey, "*Herborisations au Levant*," p. 178 1882, who there gives a large coloured figure of it. Thanks to the unwearied zeal of M. Max Leichtlin, a considerable stock of roots has recently been imported from Palestine.

* I may here say that I use the word purple in its broad meaning as signifying one or other of the several colours which, not being present in the visible spectrum, are complementary to the certain parts of the green of the spectrum, and which may be considered as mixtures of red and blue, following upon the violet of the blue end of the visible spectrum, and thus uniting it with the extreme red of the red end. Shortly speaking, I apply purple to any colour in which blue seems to be mixed with more red than can be recognised in the violet of the spectrum.

In general features it comes very close to *I. Sari*, but its wonderful colouring puts it by itself as, perhaps, the most beautiful Iris in the world. In the specimens gathered by Lortet the outer segments are described and figured as showing a very pale blue ground covered with crimson spots, which, scattered sparsely over the marginal parts of the fall, are concentrated into a dark crimson patch or "signal" in the centre beneath the end of the style; the inner segments or standards are similarly described as being of a delicate pale rose. In a plant flowered by myself this summer the falls showed a creamy yellow ground marked with crimson spots, concentrated at the centre into a dark crimson signal, while the standards were nearly pure white, marked with very thin violet veins, hardly visible at a distance. The plant figured in *Botanical Magazine*, t. 7251, from Mr. Elwes' garden gives the prevailing tone of the standards as a light violet, while the veins, spots, and signal on the fall are purple.

I learn that the plants imported by M. Max Leichtlin show considerable variation in colour; apparently, however, the "note" of the plant is a peculiarly charming combination of crimson spots and blue or violet veins on a white or creamy yellow ground.

The flower figured by Barbey is as large as that of an ordinary or rather small *I. susiana*; the one shown in the plate is not quite so large. I imagine that, when well grown, the flower will be found to be about as large, but on the whole rather smaller than that of a well-grown *I. susiana*. When the plant is well grown, the foliage seems to be larger, longer, and broader than even that of *I. susiana*.

I. BISMARCKIANA (*Gartenzeit.*, 1892, 355, fig. 72).—This Iris, found in the Lebanon, has been introduced by Messrs. Dammann, of Naples. I only know the rhizomes and imperfect dried specimens of the flower. It is described as having a flower as large as *I. susiana*, with grey falls and sky-blue standards. Some years ago I received from Miss Lee, of Nazareth, rhizomes of an Iris which seems fairly common in Palestine. I exhibited a flower this at the Royal Horticultural Society under the provisional name of *I. Sari* var. *nazarena*. But it differs from *I. Sari* most distinctly in the characters of its rhizome, which is not compact, but spreading or creeping to a very marked extent; it sends out long, thin, stolon-like shoots many inches in length. In this it agrees with *I. Bismarckiana*, and by this the two differ from all the Irises of which I have so far spoken. I am very much inclined to think that my Iris is identical with *I. Bismarckiana*; at all events, I do not put it forward as a new one until I have had an opportunity of comparing authentic specimens of the two in a living state. Besides the creeping rhizome, my Iris possesses the following features: in foliage and in its relatively tall stem it resembles *I. susiana*, and is nearly as large in flower. The fall, obovate, with the blade convex from side to side, is marked by an irregular network of dark reddish brown-purple veins on a straw-coloured ground, if we can give the name of vein to a regular row of spots or blotches running into each other. In the middle of the blade in front of the end of the style is a well-defined heart-shaped "signal" patch of intense, almost black, crimson or red-purple. Behind this and stretching along the claw beneath the style is a diffuse beard of not very numerous dark purple, almost black hairs, disposed chiefly on each side of the middle line, leaving a bare median streak. The standard, orbicular, or nearly so, but somewhat obovate, with a bluntly serrate edge, is marked with thin blue veins on a creamy white ground, there being no spots or dots, though on the claw the veins become blotched as they assume a red-brown-purple colour. The style, which is horizontal, or even inclined upwards, is somewhat narrow, bears deltoid crests, which are divergent, reflexed, and have a finely serrate edge; it is marked with numerous reddish brown spots or blotches on a creamy white ground. The flower is very striking and handsome, though it is inferior in beauty to Lortet's, Gates's, or *iberica*. I have observed in this species what, as far as my experience goes, is very rare in *Oncocyclus* Irises—the rudiment

(not more than the mere rudiment) of a second flower within the spathe valves.

I. LUPINA (Foster, *Gardeners' Chronicle*, 1887, i., p. 738).—The five Irises of which I just spoken so far resemble *I. susiana*, that they may perhaps be put into a group with it. *I. lupina*, a native of Armenia and Central Asia Minor, which was made known to me by Mrs. Barnum of the American Mission at Kharput, is in some ways intermediate between *I. susiana* and *I. iberica*. The rhizome is compact; the foliage, though somewhat variable, is dwarf like that of *I. iberica*, sometimes exceedingly dwarf, 3 inches or so in length, and then extremely falcate. The flower, borne on a stem sometimes 1 inch or 2 inches, sometimes 6 inches or even more in length, differs in form from both *I. susiana* and *I. iberica* in that the fall is distinctly lance-shaped, narrowing to a blunt, but still pointed tip, and the standard also is oval, not orbicular. Its colour, moreover, is very distinctive, being brought about by irregular brownish red veins on a yellow or greenish yellow ground, the red of the veins often merging into purple. The claw and the hind median part of the blade of the fall bear a number of large yellow hairs arranged in several rows, some of the hairs being tipped with purple, and on the blade of the fall in front of this diffuse beard is a more or less triangular "signal" patch of very dark almost black-purple. The style is curved down close over the fall, and bears very large semicircular crests with serrated edges. The claw of the standard is furnished with quite numerous hairs. Though the colour is always the result of a contrast between a yellowish ground and a red-brown, more or less purplish veining and mottling, the exact result varies much in different plants. In some plants the ground colour is a nearly pure bright yellow, and sufficiently abundant to give a good contrast with the red-brown veins; the whole flower is then to my mind exceedingly handsome. In other plants the ground colour is greenish yellow, and the total effect is spoiled by a certain dinginess. In other plants, again, as in the one figured in the plate, the peculiar red-brown-purple of veins so encroaches on the ground colour, especially in the standards, as to make these too sombre and dark. In its native home it is called the "Wolf's-ear," to which indeed an opening bud presents no small likeness. Hence I have called it *I. lupina*.

I. ATRO-PURPUREA (Baker, *Gardeners' Chronicle*, 1889, i., p. 330).—This Iris, introduced into cultivation from Syria by Messrs. Dammann, may perhaps be considered as coming within an *iberica* group. The foliage is not unlike that of *I. iberica*, and the stem, though always of some length, never rises very high. The flower is somewhat small. The fall, narrow and ovate, bears on the claw and hind part of the blade a yellow patch, on which are numerous, but scattered yellow hairs, tipped with dark purple or black. In front of this is a semicircular "signal" patch of almost black-purple, and the rest of the fall is a very dark purple, almost black, no distinct veins being discernible. The standard, larger and orbicular, is also of a deep black-purple, but on this veins of a still deeper colour may be distinguished. The style is of a reddish purple-brown, with relatively small quadrate crests. Within the spathe valves a rudiment of a second flower may sometimes be seen. The plant varies somewhat, one variety being called by Messrs. Dammann "Odysseus."

I. MARIE (Barbey, "Herborisations au Levant," p. 159, under the name *I. Helenæ*).—This, which very clearly belongs to the *iberica* group, was discovered by M. Barbey on the confines of Egypt and Palestine, and was first named by him *I. Helenæ*. Owing to the name having been already used by Koch for an Iris of which I will speak later on, M. Barbey has recently withdrawn the name *Helenæ* and proposed that of *Marie*. The rhizome is compact, but rather slender, the foliage not unlike that of *iberica*, but narrower and less distinctly falcate. The stem is short—about 6 inches. The flowers, which are somewhat smaller than in *I. iberica*, are of a uniform lilac colour, though marked with veins, but the uniformity is broken by a conspicuous "signal" patch of deep

purple on the fall. The standard is larger and more rounded than the fall. The claw of the fall is beset by numerous deep purple hairs, which, scattered at the sides, are crowded together along the middle line more after the fashion of the beard of an ordinary bearded Iris.

I. BARNUMÆ (Foster and Baker, *Gardeners' Chronicle*, 1888, ii., p. 182).—This Iris, a native of the hills of Kurdistan, in the neighbourhood of Van, was made known to me by Mrs. Barnum, of Kharput, after whom I have named it. It seems closely allied to *I. Marie*, and with that Iris may be classed in the *iberica* group. The rhizome is slender, and especially when starved has some tendency to creep. The foliage is not unlike *iberica*, but perhaps narrower and less falcate. The stem is some few inches high. The flower, which is distinctly smaller than in *iberica*, has the fall smaller and narrower than the orbicular standard, both of which are of vinous-red-purple marked with darker veins, the standard being lighter in colour than the fall and its veins more conspicuous. The style, which is horizontal, is of a brownish yellow colour marked with red-purple spots or splashes, and bears somewhat triangular crests with finely serrated edges. On the claw of the fall numerous hairs, bright yellow tipped with purple (there are also a few hairs on the claw of the standard), are crowded together into a triangular space, the apex of the triangle pointing forwards and abutting on a signal patch of deep almost black purple, which, however, is much less conspicuous than in *I. iberica* and many other *Oncocyclus* Irises. This collection of hairs may be called a beard, but it differs from the beard of a so-called *Pogoniris* Iris, such as *I. pumila*, since the hairs cover a relatively wider space, whereas in a *Pogoniris* Iris they are confined to what is almost a linear space along the median vein. *I. Barnumæ* possesses every character of an *Oncocyclus* Iris except that the hairs on the fall are somewhat crowded together; it seems to me wholly irrational to separate it from the group on this account. Moreover, there are several scattered hairs outside the triangular space spoken of above. Further, a plant found near Urumiah, on the confines of Kurdistan and Persia, kindly sent me by Dr. Cochran, of that place, in every way resembles the plant from Van, save that the hairs, which are dark purple, are much more diffusely scattered. I have also received from Dr. Cochran a plant almost exactly resembling the typical *I. Barnumæ* save that the entire flower is a fine rich yellow; and in this, too, which if I wished I might call var. *flava*, the hairs on the claw are much more scattered, so that the crowded arrangement of the hairs in the typical form seems more or less an accidental matter. Mr. Baker, in his "*Irideæ*," has placed *I. Barnumæ* in the section *Regelia*. I can only say that it seems to me to have none of what I consider to be the distinctive features of that group. The typical *I. Barnumæ* falls much short of *I. iberica* in point of beauty owing to the somewhat dull vinous-red-purple colour; but the yellow variety is in my eyes an exceedingly charming plant, and it has the additional virtue of being deliciously fragrant, the odour being not unlike the Lily of the Valley.

I. ACUTILOBA (C. A. Meyer, *Ind. Cauc.*, p. 32).—This Iris, a native of the Caucasus and known for some considerable time, though rarely met with in cultivation, differs so much in certain respects from other *Oncocyclus* Irises, that it may be taken as the centre of a sub-group of its own. The rhizome is slender and very distinctly creeping. The leaves, which are slender and narrow, are exceedingly curved, forming a semi-circle, with the tip bent down to the ground. The stem is an inch or two or even less in height. The fall is very narrow, not much more than half an inch broad, almost strap-shaped, with a lanceolate blade, which is sharply reflexed, in fact, curled back on itself. The standard is very much larger, oblong, twice as broad as the fall, and more than twice as long as broad, erect with a wavy edge. In fact, that feature of the *Oncocyclus* group, which consists in the standard surpassing the fall, is greatly exaggerated in this Iris. The style, which lies down close on the fall, than which it is rather narrower, bears two small triangular crests. The claw

of the fall beneath the style is densely covered with short, dark purple, almost black hairs, which stretch on to the blade in front of the style, and in front of these is a conspicuous, but rather smaller "signal" patch of deep purple, the edges of which are very irregular. The rest of the fall is, according to Meyer's description, a very pale lilac, with darker, conspicuous veins; while the whole standard is of a fuller, but still pale lilac, and the style a pale yellow with purple streaks. In a plant which I have had in cultivation for some years, and which agrees in respect to everything but colour with Meyer's description, the body of the fall is creamy white marked with thick purple veins, and tinged, especially towards the front of the blade, with brown; the standard is creamy white, suffused with brown and marked with close-set, thin purple veins; while the style is a pale greenish yellow, striped with rows of purple dots. Among the drawings and MS. notes by Dean Herbert, preserved in the Lindley Library, is a sketch of an Iris named *I. acutiloba* major. In this the standard is broader than in my plant and very strongly veined. The species probably varies a good deal. The flower is not without charms; indeed, has a quaint beauty of its own, but is far less showy than *I. iberica* and some others.

I. MEDA (Stapf, Denkschrift Wien, Acad., vol. 50, 1885, p. 1).—This Iris is a native of Persia. The rhizome, though small and slender, is compact. The leaves are very narrow, narrower than in *I. iberica*, and for the most part erect, not falcate. The stem is about 6 inches in length, more or less, but seems to vary a good deal. The fall, which spreads horizontally, is elliptical, but narrow and pointed, the blade being sharply curled back on itself. The standard is also elliptical, but rather larger than the fall, and the style, which lies close down on the claw of the fall, is narrow, ending in two small triangular crests. In the plants which I have cultivated, and which, like many other of my garden rarities and treasures, I owe to M. Max Leichtlin, the colour of the fall, standard, and style is a greenish yellow, marked in the case of the fall with thick purple veins, in the case of the standard with brown veins, which, well defined in the median region, become diffuse towards the edge, and in the case of the style with rows of brownish dots. On the claw of the fall beneath the style a number of bright orange hairs form a distinct linear, but thick beard, which is continued on the fall in front of the style (being here especially thick), ending against an oval, well-defined signal patch of deep, almost black-purple. In the typical plant described by Stapf the fall is lilac in colour with a yellow beard and a deep purple signal patch, while the standard is of a paler lilac. He says there is a yellow variety, and of this my plant seems to be an example. The roots given me by M. Max Leichtlin come from two different gatherings, and the plants, though all of the variety yellow, differ in some minor features. Now, *I. Meda* exhibits the characters of an *Oncocyclus* Iris in rhizome, in general habit, in capsule, in seed, and in other features—in fact in every respect except that the hairs on the fall are not scattered, but crowded together into a beard. In this feature only does it markedly fail in answering to the distinctive tokens as given by Siemssen, for other partial failures, such as the erect attitude of the leaves, the shortness of the perianth tube, and the slightness of the difference in size between standard and fall, are shared by one or other members of the group, and indeed of themselves are not of great moment. Led by the feature of the beard alone, Mr. Baker ("*Irideæ*," s.v.) places *I. Meda* in the *Pogoniris* group, and indeed says that it differs very little from *Chamæiris*. I cannot accept this view. As I have already said, the character of the beard is perhaps the least safe token to trust to in judging of the affinities of Irises, and when weighed against all the other characters may without any fear be at once thrown on one side. Anyone who has grown *I. Meda* cannot help recognising its *Oncocyclus* nature; it needs exactly the same cultural treatment as do the other members of the group; and indeed when it and *I. acutiloba* are put side by side in flower,

everyone would, I think, say at once that the two not only belong to the *Oncocyclus* division, but to the same group of the division. And one may continue to take this view of the *Oncocyclus* nature of the plant, while admitting that in its beard, in its short perianth tube, and in some other features it exhibits a tendency to approach the ordinary dwarf bearded Iris. As a garden plant *I. Meda* is not so striking as *I. acutiloba*; some of the specimens, however, have the charm of being sweetly fragrant. Though the figure of this species in *Botanical Magazine*, t. 7040, is said to have been drawn from a plant supplied by myself, I fear some accident or other must have happened, for I am bound to say that the resemblance between the figure and any plant of *I. Meda* grown by me is extremely small.

I. POLAKI (Stapf, *ibid.*).—This Iris, also a native of Persia, which I only know from the author's description, seems very closely allied to the foregoing *I. Meda*. It has much the same general characters; the fall, however, is a dark purple, with a very dark purple, almost black beard, and an intensely coloured deep violet or black-purple "signal" patch, and the standard is a deep lilac with deeper coloured veins. The author says it differs from *I. Meda* in having relatively longer leaves, a shorter stem, a still shorter perianth tube, broader, more darkly coloured flowers, with broader perianth segments. And what I have said concerning *I. Meda* may probably be repeated concerning it.

I. PARADOXA (Stevens, Mem. de la Sol. Imp. Nat. Mosc., v., p. 355).—In this singular Iris, a native of West Persia and the Caucasus, fitly called "paradoxical," one of the features of the *Oncocyclus* group, the disproportion between fall and standard is carried to extremes. The fall is reduced to a narrow strap half an inch or less in width, stretching horizontally outwards and ending in a rounded apex. It looks very much as if the lateral parts of an ordinary fall had been cut away by two parallel incisions, leaving only the median region containing the beard. The standard, on the other hand, is large, orbicular and erect; and while the small fall is stout and firm, almost leathery, the standard is delicate and flimsy in texture. The style, which lies close down on the fall, being gently curved over it, bears two very small nail-like crests, the division between the two being very slightly marked. The rhizome, though slender, is fairly compact, and the narrow, short, scanty leaves are very falcate, though different plants vary a good deal in the amount of curvature. The ground colour of the claw is a rich crimson or deep pink, but beneath the claw and for some little distance in front of it the crimson hue is all but entirely hid by numerous short dark purple, almost black, hairs, so thickly set as to imitate velvet very closely indeed. This velvet area, at some distance in front of the end of the style, comes abruptly and squarely to an end, being marked off by a cross bar of rich crimson devoid of hairs. The small portion of the fall in front of this bar is of a creamy white, traversed by radiating thick dark purple veins, which are so close set as to leave little of the ground visible. Along the edge of the hinder part or claw of the fall, by the side of the velvet beard, is a rim of similar veined nature. The standard in the type, as described by Stevens, is marked by deep violet or bluish violet veins, the interspaces between which are coloured of a paler violet. Over the claw of the standard and along a median streak over the blade the colour is a creamy white, studded with violet dots. A number of dark hairs are also seen on the claw. The style is brownish yellow, marked with dark purple spots or dots arranged in lines. The plant varies much in size and colour. I have grown plants differing a good deal in the exact hue of the dominant violet, and plants have been observed with white standards or with red-purple standards, the purple being so red as almost to be called merely red. The total effect of the flower is very striking, and, unless an element of grotesqueness be thought inconsistent with beauty, very beautiful. It at once suggests the idea that it is some strange butterfly which is pretending to be a flower.

I. HAYNEI (Baker, *Gardeners' Chronicle*, 1876, ii., 710).—This Iris, a native of Gilboa, in Palestine, has been so named by Mr. Baker. The diagnosis was founded on two dried specimens, and the description is very incomplete. The specimens evidently belonged to an *Oncocyclus* Iris, but whether they really represent a distinct Iris, or are only examples of *I. Bismarckiana*, remains to be seen, if it can ever be settled.

I. HELENÆ (Koch, see *Wochenschrift in Gartenbau-Verein*, Preuss., 1870, No. 23).—This name (in favour of which Barbey has substituted *I. Mariæ* for his previous name of *I. Helenæ*) was given by Koch to an Iris found by him in the Caucasus, near the town Helenenburg. It illustrates the difficulty of determining Irises from dried specimens only, to mention that while some authorities say Koch's type specimens are those of *I. iberica*, others say they are of *I. acutiloba*. From the description given in the journal quoted above, I should be inclined to think that it was simply a deformed *I. iberica*.

The above-named Irises are all the known and described Irises which I can with certainty place in the *Oncocyclus* group, but the future will doubtless add to the list. M. Max Leichtlin has received at various times from Persia Irises undoubtedly of the *Oncocyclus* group, some of which, had they prospered, might have proved new species; but, unfortunately, difficult of cultivation as are all the members of the group, those from Persia are, perhaps, the most troublesome. I believe I am not betraying confidence in saying that M. Max Leichtlin has also quite recently received from Persia rhizomes which seem likely to furnish one new species, if not two or more of this group. And I myself received some few years ago from Central Persia, through the kindness of Mr. Reece, of the telegraph service, rhizomes of an Iris, certainly an *Oncocyclus* Iris, and apparently belonging to the *acutiloba* division, but probably a new species. Unhappily, the only flower it has yet produced was deformed, so that I cannot satisfactorily describe it. Moreover, I have a suspicion that some of the dwarf, single-flowered Central Asian Irises, which have generally been described as belonging to the ordinary *Pogoniris* division, will, when they come into cultivation (if ever they do), and are thus more closely studied, prove to be in reality *Oncocyclus* Irises. I am nearly sure that *I. tigridia* belongs to this group, and I fancy others do so. There are also probably in Beloochistan and Afghanistan, in the region stretching from South-east Persia to the Himalayas, several Irises either belonging to this group, or forming connecting links between it and other groups. I know of one such Iris growing in the neighbourhood of Quetta, but my many prayers, directed both through official and private channels, have hitherto failed to gain an answer in the shape of living roots.

The striking features of an *Oncocyclus* Iris, the large flower, so out of proportion to the scanty foliage, the conspicuous coloration, the boldness of the marking, as seen, for instance, in the intense colour of the "signal" patch on the fall, the manner in which the anther is covered over and hidden by the curved style, all these and other features tell us very clearly that the flower needs the intervention of some insect to secure fertilisation. From the frequent occurrence of seed-pods on imported rhizomes, I am led to infer that in its native home an *Oncocyclus* Iris goes to seed freely; and further, from the condition of imported roots, strengthened by the behaviour of the plants cultivated in this country, I am also inclined to believe that the life of an individual rhizome is not a very long one, and that the race is largely continued by seeding. Here in this country plants left to themselves do not seed freely.

But this is due not to the coldness of our climate, but to the absence of the proper fertilising insects. Our bees, accustomed to more sober flowers, appear frightened at the strange aspect of an *Oncocyclus Iris*; at least I have never, so far as I remember, seen one of these *Iris*es visited by a bee or other insect. On the other hand, if the flower be artificially fertilised, it goes to seed with great readiness. I think I may say that I am more sure of getting seed from an *Oncocyclus Iris* than from almost any of the ordinary bearded *Iris*es. They cross readily with each other, and hybrids may be without any great difficulty obtained between them and the ordinary bearded *Iris*es. M. Max Leichtlin, for instance, has produced several hybrids. I myself, too, have reared and flowered the following hybrids, and possess many more in various stages of development.

I. IBERICA × I. SUSIANA AND I. SUSIANA × I. IBERICA. (The species coming first in these and the following hybrids is always the mother seed-bearing plant.)—Of these two crosses I have raised several plants. Though varying in the exact colour and size of the flower, the height of the stem, &c., they all have a common likeness, and are all more or less intermediate between the two parents. One of them so exactly repeats the *I. iberica* var. *insignis* of Van Houtte, or *I. iberica* var. *van Houttei*, that I have no hesitation in recognising that plant as a hybrid.

I. PARADOXA × I. IBERICA.—I have so far raised some four or five hybrids of this strain, differing chiefly in size and in the colour of the standards, but all, so to speak, half way between the two parents; the fall especially is strikingly intermediate. The flower is a very handsome one, and the plant seems perhaps more robust than either of the parents.

I. IBERICA × I. PARADOXA.—This, again, is like the preceding; but in one plant which I reared the flower was a very large one, since the parent (*I. iberica*) was not a pure strain, but itself a hybrid with *I. susiana*. It was, moreover, rendered especially beautiful by the standard being a heavily veined red-purple.

I. LUPINA × I. IBERICA AND I. IBERICA × I. LUPINA.—In these cases, again, the *I. iberica* used was in reality a hybrid with *susiana*, and some of the plants bear very large handsome flowers, in which one can trace the characters of the two parents. One of them, in which the colouring is a mixture of yellow with brownish crimson, is to my mind exceedingly beautiful.

I. LUPINA × I. PARADOXA.—I have so far flowered three or four hybrids of this kind, all of which, especially in the fall, betray their double parentage. One of them, by reason of the contrast of the violet hue of the standard with the yellow and purple of the fall, is especially charming.

I. MEDA × I. PARADOXA.—This has a relatively small flower showing the characters of both its parents, but follows its mother in being less handsome than any of the preceding.

The following are hybrids between an *Oncocyclus* and an ordinary bearded *Iris*:—

I. LUPINA × I. CENGIALTI.—This has the inflorescence of the father, but in flower and rhizome is intermediate between the two parents. It is an interesting plant, but the colour is disappointing, being a fusion of the yellow and brown-purple of the mother with the light blue of the father into a dull, peculiar livid purple, a *teint dégradé*. It has an advantage over the mother in being perfectly hardy, needing no special culture.

I. CENGIALTI × I. LUPINA.—This resembles the preceding, but is of a better colour, though less vigorous in constitution.

I. CHAMÆIRIS × I. IBERICA.—This gives a pleasing little flower in which the *iberica* blood is shown by the more rounded form of the perianth segments, the boldness of the veining, the richness of the purple colour, a rudimentary signal patch on the fall, and the presence of scattered hairs outside the beard. Without being especially handsome, it is a useful little plant. The seed-

bearer was not a typical *I. Chamæiris*, but one of the numerous probable garden hybrids of the wild species.

I. ITALICA × I. IBERICA.—This again has very much the same characters as the preceding. In both cases the hybrid plant is not vigorous; it does not need special culture, but it grows slowly and blooms shyly.

I. BALKANA × I. IBERICA.—I have flowered two hybrids of this kind. One was a most charming flower with a rich yellow fall, heavily veined with purple, and a light purple standard. Unhappily, in moving it I lost it.

I. SUSIANA × I. PALLIDA.—I have raised several hybrids of this strain, which in rhizome and foliage are quite intermediate between the parents. Unfortunately, they are most difficult to manage. I have wholly lost several before they flowered, and those which have flowered have always, as is often the case in *Iris* hybrids, produced deformed flowers. The flower if properly developed would, as far as one could judge, be one having the form, markings, and general characters of *I. susiana*, but one in which the black and grey of the mother were changed into the deep and light blue of the father. If well grown it would have been exceedingly handsome.

The cultivation of the *Oncocyclus Iris*es has recently been so fully discussed, that I need say nothing here on the subject.

Shelford.

M. FOSTER.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

PREPARING HOTBEDS FOR SOWING SEEDS.—A gentle hotbed will be found of great assistance just now for forwarding some of the vegetables which are benefited by a little assistance in this way. Generally the seeds are sown in boxes, but unless the plants are well cared for, they are apt to receive a check, either through being drawn or crippled from the want of timely pricking off. For a small garden a gentle hotbed that will hold a two-light frame will prove of great assistance in the raising of the different kinds I shall recommend. Not a violent heat through a preponderance of stable litter, but a depth of about 2 feet, and the greater portion of leaves is best. After the frame is put in position and with a surfacing of light soil to the depth of 6 inches, the surface of the bed should be about 10 inches from the glass. After the seeds are raised and the seedlings pricked out, the frame may be utilised for forwarding early Vegetable Marrows, or even a few French Beans. In large gardens where quantities of vegetables are needed, frames are in great request, and even in small gardens they will be also useful.

AUTUMN CAULIFLOWERS.—Veitch's Autumn Giant should now be sown, but to ensure an early supply as well, note should be taken of Eclipse or Sutton's Autumn Mammoth, two varieties which will precede the Autumn Giant if sown at the same time. Either sow thinly in drills on a gentle hotbed or in a box of light soil. If in the latter, take particular care as soon as the seedlings are through the soil to place the box on a shelf in a greenhouse temperature. When sown in a frame the lights may be tilted according to the weather. A sowing should also be made in the open air about March 21, weather permitting.

BRUSSELS SPROUTS.—There are two evils to be guarded against in the cultivation of Brussels Sprouts: one, that of sowing the seeds in too much heat, and the other raising the plants too late. Our springs appear to have altered too much to depend upon sowings made in the open air, unless in favourable districts and soils; therefore, as a safeguard it is best to raise the plants in a cold frame. In this way the plants are hardy and strong. Boards fixed together—if a proper frame should not be available—will suffice. Into the frame, when placed in position, put 3 inches or 4

inches of light and friable soil, on which sow the seeds very thinly. If kept close, free from frost and fairly moist, the seedlings will soon appear, when ventilate as needed. When large enough the seedlings must be pricked out before being eventually placed in their permanent quarters. If the seeds are to be raised in a box, pay particular attention to watering and pricking off.

SEED POTATOES.—These will now require careful attention or the sprouts will become much too long and blanched to make a good start when the time comes for planting. Seed Potatoes which have lost their primary sprouts are of no value for planting. If they are already spread out thinly in boxes or even a light room, let the air when the weather is mild circulate around them, when the sprouts will be sturdy, of a deep green colour, and start freely into growth when planted. Any tubers that may have been received from seedsmen and do not appear to have started should be placed in a single layer in a box and stood in a greenhouse, for unless they are treated thus it will be late before they start, and when planted, even on the same day, they will be quite a month later than others with a good strong sprout. In the case of the first earlies, too much stress cannot be placed upon this detail in the routine of Potato culture.

CULTURAL REMINDERS.—Just now the careful cultivator will have to pay great attention to the ventilation of young vegetables being forced on hotbeds. The ventilation is most important with such subjects as early Potatoes, young Carrots, and Radishes, which are now appearing through the soil. On fine days give ventilation before the sun has raised the temperature very high. Put a little on at first, increasing it towards 11 o'clock. Early ventilation and then closing early, so that the sun-heat may be retained through the fore part of the night, will help subjects on considerably. The soil about Potatoes will no doubt be moist enough at present, but Radishes and Carrots must be freshened up with tepid water in the early part of the day, so as to keep them in a growing state. If such subjects lack moisture in the soil, the quality is lessened considerably. Also pay due attention to matting the frames up closely at night. A. YOUNG.

HARDY FRUITS.

PEACHES AND NECTARINES.—Pruning and nailing these may well be deferred another fortnight or three weeks, or till the flower-buds, which are very plentiful this season, begin to show colour, the aim being to retard them as much as possible. The trees move admirably, always provided pains are taken in the operation either now, or, better still, just when the wood-buds are bursting. Those, therefore, who may have trees that they would like to shift to a better position or are anxious to give some of the best varieties more room may well wait a few weeks longer, or till both top and root growth is commencing. Fewer roots are lost owing to imperfect healing of the wounds in connection with the early spring removals than at any time previous, and it is possible to move quite large trees at that period, especially if they have been partially lifted or root-pruned at any time during the past two years, without the loss of a crop. The trees ought to be thoroughly well undermined, the commencement being made by means of a deep circular trench cut not less than 4 feet away from the stems. The aim should be to save as many healthy roots as possible and to preserve a moderately large ball of soil. It is possible to be over-anxious with regard to the latter, extra large balls or any that cannot be conveniently shifted on and off and carried on a short, wide, and stout board being liable to break to pieces. Replant rather high to allow for sinking, the collars being at all times best kept well above the ordinary garden level. Also give the trees the benefit of a fresh start in moderately good loamy compost, and the roots being well and evenly distributed among this will soon commence forming fresh fibres. Mulch with a good thickness of partially decayed leaves in preference to straw

manure. It is not yet too late to partially lift and root-prune trees that are either too vigorous to be productive or are too deeply rooted to grow so healthily as desirable. It is advisable to do one side of the trees this season and the other half either next autumn or the following spring, a severe check being thereby guarded against. Now is also a good time to fork in a dressing of newly-slaked lime. If this is applied at the rate of a 5-inch potful to every square yard of border it would in some cases correct sourness, and in others, may be, supply a much needed element in the soil.

PLUMS AND CHERRIES.—Bullfinches have already started on the flower-buds of the former, and if these pests cannot be destroyed they must be warded off the wall trees by means of slackly-hung fish nets. These birds are very sly and work rapidly, not unfrequently doing great damage among the trees before being much noticed. Much that has been advanced concerning moving Peaches and Nectarines also applies to Plums and Cherries. Both the latter kinds of fruits are best kept well together against moderately warm to quite the coldest walls, and they can then be either more effectively protected or netted over when the fruit is ripe. Both root strongly and can usually be transplanted with a good ball of soil and roots. All, with the exception of Morello Cherries, ought ere this to be pruned, and in the case of wall trees re-fastened. Morello Cherries need not be touched till the Peaches and Nectarines are pruned and re-nailed, allowing the young shoots to be away from the walls serving to retard blossoming considerably.

PEARS.—If need be, comparatively small trees of these may yet be transplanted with every prospect of their growing well afterwards. It cannot be too often pointed out how necessary it is that the surface roots should be taken good care of, and also that trees with their roots either principally very deep-running or in greatly impoverished soil will not produce fruit of the best quality, starved trees likewise seldom bearing every season. Though somewhat late to commence root-lifting, there is yet no good reason why any special tree should not be taken in hand now, one side only being done, and the roots brought up to nearer the surface and relaid in fresh loamy compost. Much of this extra work might be avoided if only proper steps were more often taken towards keeping the roots active near the surface. This can best be done by means of liberal mulchings of strawy manure every winter or spring, also avoiding digging and cropping so close up to the trees as formerly. Where the soil is naturally poor, and in some cases it is constantly dry, loosen the top soil, bare the surface roots, and, after applying a good thickness of good solid manure nearly rotten, follow up with a good soaking of soft water, or, better still, liquid manure. The soil being levelled back over the mulching prevents the latter from becoming dry later on, and the roots deriving so much benefit from the extra food and moisture about them there is a marked improvement in the quality of the fruit the same and next two or three seasons. It is very necessary that a pathway be formed just in front of the wall trees, and early mulching of strawy litter prevents this either binding or lifting up badly during the pruning and nailing operations, also, as previously shown, otherwise acting beneficially. Ashes from the stovehole and other places are sometimes substituted with very good results, these lasting well and also preventing a rapid loss of moisture by evaporation and consequent cracking of the surface soil. Especially are the paths of ashes desirable where the trees are naturally in no need of any assistance in the shape of manures.

YOUNG FRUIT TREES.—If these are ordered from nurserymen, removal ought not to be delayed till top-growth has commenced, or the chances are both the roots and tops will be damaged during transit, being kept longer out of the soil than is good for them. Those late planted, with the exception of most of the maidens, ought not to be hard pruned, and, in fact, in very many cases would be best preserved intact. In all probability, if trained trees of Apricots, Plums, Cherries, Pears and Ap-

ples are not pruned they will make little or no wood-growth, but the roots would have a good opportunity of becoming strengthened, top-growth being correspondingly improved during the second season following upon planting. If cut back, the chances are neither top nor bottom growth would be of a satisfactory character, and cutting away so much strong wood would therefore mean a great loss of time. Reserved and duly laid in to its full length, fruit-buds, or the foundation of the same, would be formed at nearly every joint during the first summer after planting. This early productive habit of growth will thus be brought about without any trouble in the shape of lifting or root-pruning; while, on the other hand, it may be necessary to treat precocious-bearing trees somewhat liberally at the roots in order to prevent their becoming stunted in growth. Maidens of Pears and Apples to be grown as single cordons should not be shortened, but in all cases where three or more branches are required, cut them back to within about 5 inches of the point of union of the scion with the stock.

W. IGGULDEN.

PLANT HOUSES.

POTTING PALMS AND FINE-FOLIAGED PLANTS.—In dealing with Palms in particular, it should be borne in mind that it is a very easy matter to spoil rather than improve the plants by potting them too frequently. When the plants are over-potted the roots run away to the sides of the pots, leaving the inner portion of soil untouched, so to speak, until it becomes partially sour; then, of course, they do not take to it kindly. It is somewhat surprising how long a Palm will remain in the best of health without potting at all. When in some cases repotting would be expedient in the case of other plants, the Palms, by careful attention to watering and the judicious use of stimulants, will stand over quite another season. To assist Palms, I have not found anything to surpass Standen's manure (Gardeners' and Amateurs' Friend), a slight dusting being sufficient to last for a week or fortnight. To return, however, to the potting more particularly, I have to state that when it is done, let it be done well, using good soil and taking pains with the work. Firm potting should be the rule, allowing at the same time a good margin at the top for watering, for as Palms are gross feeding plants as regards moisture at the roots, they require in this respect a good provision to guard against drought. If the advice of not potting too often has been carried out, there will not be much soil to be removed before potting, liberating the points of the roots being about all that is needful; the less the roots are disturbed or mutilated the better for the plants. For the strong growing kinds with gross feeding roots turfy loam is the best soil to employ for large plants, adding some leaf soil if they are small ones. Others that are not such coarse-rooting kinds, although of strong growth (the Kentias, for instance), may have a little peat with advantage, whilst others with more wiry roots should have more peat still. In either case a dash of bone-meal will be an assistance, with sand, of course.

CROTONS.—These are another example where overpotting is neither desirable nor beneficial, provided good attention in other respects be accorded them. When small plants, for instance, can be grown on single stems to between 4 feet and 5 feet in height, and that whilst in 6-inch pots and clothed with foliage to the pot, too frequent potting cannot be considered desirable. Leaf soil with mellow turfy loam will suit them well, using a little peat if the plants are specimens, so that they may remain even longer without another shift. Whilst the plants are still at rest it will not hurt any that happen to be at all unhealthy at the roots and that are in rather large pots to reduce them and pot again into the same size, but not the same pot, for all pots even if washed want a period of exposure to the air. Do not attempt to keep any scrubby plants when young ones can be grown on so rapidly to supply their place, unless it be to retain any particular variety for stock.

DRACÆNAS.—These also may be confined to very small pots with good attention to watering, remaining thus in a far better state than if over-potted, retaining the lower leaves far better. For Dracænas I prefer to use rather more of a peaty soil or a light fibrous loam and leaf-mould. Although Dracænas enjoy moisture at the roots, anything approaching a stagnant condition must be carefully avoided; hence fibrous peat is better than heavy loam. A small proportion of soot will greatly assist the Dracænas, just sufficient being used for it to be slightly detected in the soil. When potting look after the tap roots for increasing stock (as well as by eyes from old stools); by removing the tap roots the plants can be got lower into the pots, thus allowing of a better surface-dressing. Tall plants inclined to be leggy should have the tops taken off and put into the propagating pit or be mossed around and partly cut through if the convenience for propagation be not so good.

ALOCASIAS.—These as to soil require to be divided into two sections. Such as *A. metallica*, *A. Lowi*, and *A. Sanderiana* delight in rough fibrous peat and Sphagnum Moss, with charcoal added for specimens, and plenty of silver sand. Failing sufficient Moss, a top-dressing of cocoa fibre (not refuse) will suit them well. These plants are just as well kept elevated somewhat above the rims of the pots. About every other season it is advisable to repot the plants, shaking them quite out of the soil. The pots should be drained quite half way up with clean crocks. The other section, as represented by *A. macrorrhiza variegata* and *A. zebrina*, will thrive better in a more loamy soil, and may be kept level with the pot, whilst so much drainage is not needed. *A. Jenningsi*, a pretty decorative variety, may, like *Caladiums*, be grown in leaf soil and loam.

OTHER FINE-FOLIAGED PLANTS.—Of these, the Pandanads, when of any size, will all thrive very well in turfy loam, only using leaf soil or a little peat for small plants; as in other cases, guard also against overpotting. *Rhopalas* should be potted mainly in peat and sand; the same may be said of the *Marantas*, but *Dieffenbachias* can be grown remarkably well in leaf soil and turfy loam with some spent Mushroom manure. The ornamental forms of *Anthuriums* come almost under the same treatment as the *Alocasias*; being of a coarser growth, some fibrous loam may very well be added, and the plants may be potted more firmly. *Aralias* should be potted in peat and loam, but nothing approaching a heavy soil. *Cissus discolor* thrives well in leaf soil and sand, or, failing the former, peat instead should be used.

JAMES HUDSON.

ORCHIDS.

WHEN writing about Orchids we are too apt to pass over the beautiful greenhouse or garden frame species and varieties, but they are an interesting section of the Orchid family, and some of the South African and North American species are remarkably beautiful. When their culture has been mastered they can be managed with very little trouble, but it is quite necessary to attend to their requirements at the right time, such as repotting them when they need it, watering them freely at one time and keeping them well on the dry side at another. The *Disas*, for instance, are not only interesting plants, but some are exquisitely beautiful. *D. grandiflora* is the best known of them, and grows freely if it has the right treatment. Now is the time to repot the plants. They require pans of various sizes, or they will thrive in well-drained flower-pots. They begin to grow early in the year, and should be repotted before new roots are made. Use for potting material good fibrous peat broken up by hand, some well-rotted cow manure, Sphagnum Moss, and coarse white sand. They can be freely propagated by division, parting the old plants out by hand and carefully saving all the roots uninjured. The variety *superba* is the brightest and best, and *D. Borelli* does not differ much from this species. Several distinct species

have been recently introduced, and require very similar treatment. The Orchis family contains some very beautiful things. At the head of them stands *O. foliosa*, which should be grown in every greenhouse. The tuberous roots are repotted annually when at rest in the winter, loam, leaf mould and coarse white sand being the best potting soil. *O. maculata superba* is a very fine variety of the Meadow Orchis. I have seen it grown with truly handsome spikes of rich mauve and purple flowers, and the deep green leaves are purple spotted. The *Satyrums* from South Africa are distinct and handsome, and, like the Orchises, they die down in winter, and the tubers should be repotted when the plants are at rest. A little turfy peat, fibrous loam and sand suit them. Years ago I used to grow this plant well in a greenhouse. The *Cypripediums* are also very charming plants. They are mostly Canadian and North American, and are deciduous. The queen of them all is *Cypripedium spectabile*, which will grow out of doors in England, but I have always treated it as a greenhouse plant, and what a charming plant it is when well flowered. I grow it in fibrous peat with a little Sphagnum. I see clumps of it are at the present time advertised to be sold in fine condition. Drain the pots well and plant the clumps without dividing them. The flowers are rose and white, sometimes pale rose, at other times a very deep rose. *C. pubescens* is next to this as a useful greenhouse plant; the flowers are bright yellow and dull purple coloured. It requires the same treatment, and should be repotted annually before it starts to grow. For this I use fibrous loam with the peat. *C. Irapeanum* may be mentioned as a handsome species, far superior to *pubescens* in its bright deep yellow flowers, 4 inches or 5 inches across; it has been often imported, and by the appearance of the clumps it would seem to grow in marsh land. I have several times tried to grow it from plants imported direct, but have always failed to flower it more than once. Has any British gardener succeeded in establishing it? The Siberian *C. macranthum*, on the other hand, has done well with me as a greenhouse plant; so also has *C. Calceolus*. Others that grow and flower are *C. candidum* and *C. parviflorum*, but the pretty little *C. guttatum* I cannot grow even. All the above are well worth the most careful attention. There are other pretty little Orchids which may be grown in frames; most of them thrive in small pots in well drained, fibrous sandy loam mixed with nodules of limestone.

With the increasing warmth and bright weather we have had the plants seem to improve daily. For the last few days the sun has shone brightly, and the nights with a few exceptions have not been cold. We have for the last three or four days been repotting the *Cypripediums*. Some of the species are planted in fibrous peat and Sphagnum, others in equal portions of peat and loam; some seasons we have repotted them earlier. *C. Spicerianum* thrives best in loam, but as it requires abundance of water at the roots, the fibre decays during the twelve months, and becomes sour even with ample drainage. I use Sphagnum with the potting compost, and it is encouraged to grow on the surface. We also use a little fibrous yellow loam for the hybrids that have been raised from *C. Spicerianum*. The vigour and beauty of the foliage of *C. Leeanum* are pleasing to an Orchid fancier. Others that have been surface dressed or repotted are *C. Stoni*, *C. grande*, *C. Dominianum*, and several other hybrids. In repotting or surface-dressing Orchids finish off the surface well; the pieces of peat must be alternately placed with Sphagnum in a live state, and intermixed with pieces of drainage and charcoal. Another point I always insist upon is to see that the plants themselves are thoroughly cleaned before repotting them. Wash the leaves well with a soft sponge, and examine the bulbs of all that have bulbs to see that no scale has made a home on them. Attend now very carefully to the watering of all Orchids starting to grow or in a growing condition. They are not so easily injured by over-dryness as Heath or other finely rooted, hard-wooded plants, but anything that is

likely to check the steady growth of a plant must be injurious, whether it is lack of water at the roots, or over-dryness in the atmosphere when it ought to be moist. The most serious of the ills that check the growth of Orchids and disfigure them to boot is the insidious yellow thrips working unseen in the yet undeveloped growths.

J. DOUGLAS.

FERNS.

PROPAGATING FERNS.

"DOODIA'S" remarks with regard to the advantages of young plants over old stunted specimens come at a seasonable time, the spring being the best time to commence operations (either by division of old plants or by raising young stock from spores). The latter is the better method for all such as may be obtained in that way; but there are many of our most beautiful Ferns which do not mature their spores, and in some cases do not show any signs of producing them. These must be propagated by divisions or in some instances by bulbils, which are formed on the surface of the fronds.

In these notes I will deal with such as should be propagated by division, foremost amongst which is the beautiful *Adiantum Farleyense*. When breaking up large specimens, there is some risk of losing them, but if young plants which have not become pot-bound are taken, they may be divided into two or three, or perhaps more, and if potted straight away and put into a close frame, they will suffer very little and will soon start away again. This beautiful Fern is often grown under heavy shading. I find, however, that it will do better when more exposed to the sun and light. If potted in good porous loamy compost and liberally supplied with water, it will grow freely enough. It is perhaps hardly necessary to mention that it requires a stove temperature. I once saw some beautiful plants of *A. Farleyense* under rather unusual treatment. It was in the spring-time, and they were on a shelf in a house with a southern aspect and without any shading; the pots stood on a bed of growing Sphagnum Moss. The healthy condition of the plants and the lovely tint in the young fronds fully proved that the conditions were exactly suitable.

Any of the other *Adiantums* which have spreading rhizomes may be propagated in the same way, and it will be found that all those with the red tint in the fronds succeed best in a sunny position, while those of a more sombre hue delight in a shady position.

Many of the *Davallias* may be propagated by division, and sufficient stock kept up with little trouble. Most of the *Davallias* may also be raised from spores, but it is a slow process, and where only a limited number is required it is hardly worth the trouble. *Microlepia hirta cristata* is a grand Fern when frequently divided and grown in small pots, but larger specimens are not nearly so elegant. All the forms of *Nephrolepis* are much prettier when grown on freely from single crowns. Old specimens get too dense and do not make such fine fronds. As I have previously stated, the spring is the best time for dividing Ferns, but in the case of old stunted specimens they should first be potted on or surfaced, it being essential to secure a few new roots. In some instances where the crowns do not spread far, as in the case of some of the *Pterises*, some surface soil may be added and a little later on some of the outside crowns may be cut away with roots without disturbing the old plants much, and where it is desirable to preserve the old specimens this is an advantage.

Some advocate dividing Ferns while they are dormant, but my experience is that it is much better to do so after the spring growth is well started. Of course, it requires care, and they must not stand about to get withered, for if the young fronds get permanently damaged there will be no vitality left. After being kept close and shaded for a few days they may be gradually exposed to more light and air again. In potting the divisions

it is best to use small pots, and they can be potted on as soon as they are well established. In potting Ferns it is of the greatest importance that the crowns of the plants should be kept low enough for the new roots, which come from the base of the lower fronds to come into contact with the soil.

F. H.

A seasonable note.—Just now, when potting is more or less being carried on amongst all kinds of plants, a word of two may save some of the seedling Ferns which may be springing up here and there. In Orchid pots and baskets particularly will these be found. *Adiantums* in variety, *Pterises*, *Gymnogrammas*, *Aspleniums*, and other kinds will all prove useful. Seedlings which spring up spontaneously amongst other plants usually thrive well, and it is generally pretty easy to secure them with sufficient roots to ensure their safety. I have noted in some cases that the seedlings have come up so thickly in other pot plants as to quite cover the surface. These if taken in time will make capital little stuff for pricking off into pans if quite small or for potting singly if sufficiently large. In this way it is quite possible to keep up quite a young stock of Ferns that in due course would be far more serviceable than retaining so many old stunted plants. Where any seedlings are growing upon walls, by all means leave them alone in their position. Do not heedlessly cast aside young Ferns of any kind, more especially where any quantity is wanted for decoration. Their use will save many plants that take longer to become established.—G. H.

***Adiantum fragile*.**—A beautiful little specimen of this species comes to me from the Messrs. Birkenhead for a name. It is a singular and well-marked plant, which is found growing on calcareous rocks in Jamaica and in the island of Cuba. Specimens of this plant came into my possession now many years ago through Capt. Toppin, of the 5th West India Regiment, who brought me a lot of Ferns to name which he had collected in the West Indies. I have never before heard of it in cultivation. It is a very slender plant, with a wiry rachis and with very short stipes. It has the peculiarity of casting its pinnae, leaving quite bare stems, caused, I have no doubt, through inattention to watering.—W. H. G.

***Adiantum macrophyllum striatum album*.**—Messrs. Rogers, of Fern Bank Nurseries, Loddsworth, Sussex, send us some specimens of this Fern. The plant would appear to be a good robust grower and a decidedly handsome and highly decorative form of the old *macrophyllum*. We are not aware if its young fronds assume a reddish pink tinge as in the typical plant, never having seen it growing, but the mature fronds are broadly and regularly streaked with white, rendering it very handsome and distinct.

Ferns for covering walls.—Brick pockets are sometimes built in the walls for planting Ferns in, and in some instances these may be used with advantage, but it would entail some cost as well as trouble to re-build walls for this purpose, and it is hardly necessary, for on walls where there is sufficient moisture many of the Ferns with spreading rhizomes will, when once established, grow freely and eventually cover a considerable space. Many of the *Adiantums* and some of the *Polypodiums* also succeed well. For such as require more soil to root into some rough compost may be fixed to the wall by means of galvanised wire netting. Cork pockets may be made to hang against the wall, and many Ferns do well in these. All the *Platyceriums* may be recommended for growing in pockets, and when hung against a moist wall succeed better than when in a drier position. The *Davallias*, too, are almost all of them suitable for the purpose, *D. dissecta*, *D. Griffithiana*, *D. Mariesi*, *D. elegans*, *D. Tyermanii*, and similar varieties being the most useful. The *Nephrolepis* do better when the compost is fixed to the wall by means of wire netting. The varieties should be selected according to the space that can be given them. *N. pectinata* is the best of the smaller growing sorts. *N. exaltata* and *N. philippinensis* are also

useful. *N. davallioides* may be used where space is not limited. *Goniophlebium subauriculatum* is another fine Fern for growing against a wall, but requires a warm position. Under good treatment the long pendulous fronds are very effective. *Hypolepis distans* spreads very freely. *H. repens* may also be included. Many other Ferns might be added to this list, but the above will be found a useful selection. It requires a little care in arranging the different sorts, but with a little judgment a large space may be made very effective.—F. H.

TREES AND SHRUBS.

A FEW GOOD SHRUBS.

THE following shrubs are both very ornamental and quite distinct, while judiciously planted they afford a pleasing variety to the few common subjects which are repeated again and again in most gardens.

DEUTZIA CRENATA FLORE-PLENO.—Notwithstanding the fact that this *Deutzia* is easily propagated and a cheap plant in nurseries, a good specimen of it is not often met with, yet at its best it is really a very beautiful shrub. Apart from the beauty of the blossoms they are borne in the greatest profusion. It is not particular as to soil and situation, but succeeds best in a fairly deep open loam that is not dried up during the summer. As with many of the *Spiræas*, this *Deutzia* is much improved by a little extra attention, for the trimming out of old and exhausted wood allows the younger and more vigorous shoots a better opportunity to develop themselves, which treatment results in finer blossoms. There are two well marked forms of this double *Deutzia*, and it is difficult to say which is the more beautiful. The first, known by the name of *candidissima plena* and *Pride of Rochester*, produces pure white blossoms, while the second has the outside of the petals deeply tinged with a kind of rosy purple. This feature is especially noticeable in the bud state, but it is also prominent in all stages of the flower. The variety in question is known as *rosea plena* and *extus purpurea*.

AZALEA ODORATA.—This possesses a plurality of names, for besides the above it is also known as *Azalea fragrans*, *Rhododendron azaleoides*, and *R. sub-deciduum*. It is supposed to be a hybrid between *Rhododendron ponticum* and one of the hardy *Azaleas*, and according to Loudon was raised about 1820. The flowers of this *Azalea* vary a good deal in colour, for in some they are very much of the hue of *Rhododendron ponticum*, while in others they are nearly white, and various intermediate shades of lilac and mauve are also represented among them. The leafage, too, is by no means uniform, that of some specimens being very much paler than others, and while a few of them are almost if not quite deciduous, the majority of them retain a good many of their leaves throughout the winter. A bed of this *Azalea* is a very beautiful object at a time when most of the hardy *Azaleas* are over. During sunshine the fragrance of the blossoms is very noticeable.

CYTISUS ANDREANUS.—Few plants, especially hardy shrubs, have advanced so rapidly in popular favour as this Broom, of which some thousands must have been sold by our nurserymen within the last few years. It is principally increased by grafting on to the common Broom, and the point of union being in most cases close to the ground, it may in planting be covered with soil, so that the graft will in time push forth roots of its own, and as the stock never produces any suckers, many of the objections to grafting do not apply in this case. As far as my experience extends, this variety cannot be reproduced from seed.

MAGNOLIA STELLATA.—This is one of the early flowering *Magnolias* and blooms about the same time as the *Yulan*, but, unlike that magnificent tree, this will flower freely when not more than a couple of feet high. It forms a numerous-

branched bush, while the flowers, which are each about 3 inches in diameter, are composed of several strap-like petals of a pure white. A small bed planted with this *Magnolia* and carpeted with the North American Partridge Berry (*Gaultheria procumbens*) forms a very pleasing feature, as the white flowers contrast with the bronzed leaves and bright red berries of the *Gaultheria*, while the surface of the ground being covered, the blooms of the *Magnolia* are not so liable to be splashed during heavy rains as they would be without something of the

rather spreading bush, clothed with beautiful light-coloured pinnate leaves, and about August is plentifully furnished with spikes of bright rosy-pink blossoms. In common with many leguminous plants, this *Indigofera*, from the deep-descending nature of its roots, will thrive in rather light sandy soils better than many other subjects.

RUBUS DELICIOSUS (the Rocky Mountain Bramble) is widely removed from any other Brambles. Its slender branches are clothed with Currant-like leaves, and the blooms resemble pure white Dog



Rhodotypos kerrioides.

kind. *Magnolia Halleana* is also another name for this species.

RHODOTYPOS KERRIOIDES.—The specific name of this is very appropriate, for it much resembles the well-known *Kerria japonica*, except that the blooms are larger and pure white, like single Roses. It is a native of Japan, from whence it was introduced in 1866, quite hardy, not at all particular as to soil, and will flower for months together.

INDIGOFERA FLORIBUNDA.—Though more tender than any of the preceding and often treated as a wall plant with satisfactory results, this *Indigofera* is very beautiful in the open ground, for even if cut down by the winter it quickly recovers, and not only grows away freely, but will flower towards the end of the summer. In the open it forms a

Roses. Like the last, this is often trained to a wall, and in such a situation it flowers profusely; as a shrub, too, in the open ground it usually blooms well. It has been introduced into this country for more than twenty years, but is still quite an uncommon plant in nurseries.

DAPHNIPHYLLUM GLAUDESCENS.—This differs from the whole of the above in being evergreen in character, and it must be regarded as a decidedly ornamental member of this class. It forms a sturdy growing, freely branched, rounded bush, plentifully furnished with foliage. The leaves are each 6 inches or 7 inches long and a couple of inches wide. The upper part of the leaf is of a delicate pale green, while the under surface is clothed with a bluish grey glaucescence. The bark

of the young shoots and the midribs of the leaves, as well as their stalks, are red. A variety of this last is *jessoensis*, whose leaves are smaller and more rounded, while the habit of the plant is dwarfer. This is rather more tender than the type, which is scarcely ever injured, even during severe frosts. T.

Fabiana imbricata.—This shrub, where only partly protected by a belt of shrubs, has suffered very much from the recent severe frost. Planted at the foot of a south wall and mulched with partly decayed leaves, it not only is safer, but the warmth from the wall encourages a fuller crop of its funnel-like blossoms. The finest specimen I ever saw was growing against a south wall, which had the extra protection of a glass verandah.—M.

Berberis Wallichiana.—The evergreen species of Berberies are (exclusive of the *Mahonia* section) by no means numerous, yet they include among their number two of our most beautiful flowering shrubs, viz. *B. Darwini* and *B. stenophylla*. While less showy than these two, *B. Wallichiana* is a very handsome shrub, quite distinct from any of the others. It forms a dense compact bush, freely clothed with large oblong-shaped leaves of a deep glossy green tint, while the light, clear yellow flowers are borne about the months of May and June. The berries which succeed them are of a purple hue, but, as a rule, they are not particularly numerous. While very ornamental throughout the year by reason of its handsome foliage, this Berberry is, of course, additionally so when in bloom, as the contrast between the deep-tinted leaves and the clear yellow blossoms is very marked. It is a native of the Himalayas, and was originally discovered by Wallich, but, I believe, introduced into cultivation by Messrs. Veitch through their collector Thomas Lobb. Unlike many plants from the same region, it is seldom affected by even our most severe winters. This Berberry is also occasionally met with under the name of *B. Hookeri*. In addition to the above-mentioned Berberies three other species may be noted. They are *B. empetrifolia*, remarkable as being one of the parents (*B. Darwini* was the other) of *B. stenophylla*; *B. dulcis*, a free-growing bush whose bright yellow solitary flowers are borne on very long stalks; and the curious *B. congestiflora hakeoides*, a sturdy growing bush, whose leaves, which are from 1 inch to 2 inches long, are roundish, of a stout coriaceous nature, and furnished with large conspicuous spines upon the margin. The flowers are of a golden yellow colour and crowded together in dense heads. It is widely removed from any other species of Berberry. All of the above with the exception of *B. Wallichiana* and the hybrid *B. stenophylla* are natives of the southern portion of South America.—T.

The Mexican Orange Flower.—There can be little doubt about the hardiness of *Choisya ternata* in most parts of England. My experience of it is that it is far more hardier than the *Laurustinus*. If it could be made to flower later than it does naturally, then it would be far more popular than it is, for very few shrubs are more easily cultivated than this, and it can be increased by cuttings very quickly. Its great fault, however, is caused by its precociousness in flowering, as in three years out of four its flower-buds are destroyed by late spring frosts. This at least is the case here in Suffolk, and I have seen it lose its crop of flowers even in Cornwall by frosts and cutting winds. The buds are certainly very tender and susceptible to injury from these causes, so that it is but seldom seen in its best form out of doors, and there is but little inducement to plant it largely, except in very sheltered spots or in a mild climate. It grows freely, and its natural habit is good and well balanced.—J. C. TALLACK.

Erica codonodes.—Here this shrub is not hardy, except where protected from north and east winds by Evergreens. We have several plants of it which have stood uninjured through the last six winters. The plants in question are growing close to the edge of a small piece of water, but are well protected by *Rhododendrons*, &c. Not more than

20 feet away were half a dozen others, but these being exposed to high winds the frost of 1890 killed them entirely. In the open this shrub is a long way from being hardy, which is a pity, as it is one of the few hardy subjects that flower twice every year—now, and again in October. Planted in peat and under the protection of a south wall or bank of shrubs it well repays a little extra labour. We have so few hardy trees or shrubs that flower in January, that those we have ought to be taken care of.—E. MOLYNEUX, *Swanmore, Hants.*

—In exposed positions this plant gets terribly disfigured by 20° of frost in Somerset. It must have a very sheltered place to be at all reliable. I would not think of planting it in the open outside of Devonshire. If I had a rather large unheated house to furnish I would use it there, as the fact that it blooms at mid-winter enhances its value. What it wants is protection from cold, cutting winds.—J. C. C.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY.

FEBRUARY 14.

THIS meeting was a very full one, being in the opinion of many the best ever held in February. Orchids were strongly represented, and that in good variety also, but the *Cypripediums* were the most *en evidence*. It is marvellous with what rapidity new forms of the Slipper family appear. In spite of the numbers of new hybrids the quality is well maintained, distinct additions appearing at nearly every meeting. The exhibition of New Holland plants and forced Lilacs with other early spring flowers also claimed a good share of attention, whilst the handsome hybrid forms of *Amaryllis* have thus early in the year made a good impression. Some few *Chrysanthemums* were also shown, and that in good quality. Of fruit there was a large display of Apples in an excellent state of preservation. The beautiful examples of home-grown Oranges were also much admired.

Orchid Committee.

The exhibits on this occasion were many, and the awards also more numerous than usual. First-class certificates were awarded to—

DENDROBIUM OWENIANUM (*D. Linawianum majus* × *Wardianum*, grand var.).—This is a lovely hybrid, having all the free characteristics of *D. nobile*, being of similar growth, but paler in colour, promising, however, to be equally as free flowering. Some five or six plants were shown, all being uniform in this respect. The lip is that of *D. Wardianum* in colour, the sepals and petals are coloured as in that species, but in form take after those of the other parent. A fine hybrid, raised by Mr. Norman Cookson, Oakwood, Wylam-on-Tyne. Exhibited by Messrs. Sander and Co.

CYMBIDIUM GRANDIFLORUM.—This is a species with remarkably fine flowers (as large as in *Cattleya Trianae*), with six to the one spike, and of fine substance. The sepals and petals are of a pale yellowish green shade, the lip being larger than in many species and nicely fringed, spotted towards the edges with brownish spots, and others of a crimson shade in the centre. A very distinct species. From Messrs. F. Ross and Co., Merstham.

PHALENOPSIS SCHILLERIANA VESTILIS.—This is a pure white variety and might fairly have been called "alba"; the foliage is that of the species, but the markings which distinguish it are not so well defined. One might almost surmise that it is a cross between *P. Schilleriana* and *P. amabilis*, the foliage being short and sturdy, as in that species. From Messrs. Hugh Low & Co.

PHALUS AMABILIS.—This is a lovely hybrid (*P. tuberculatus* × *P. grandiflorus*). The sepals and petals resemble those of *P. tuberculatus*, being of a pale flesh colour, the lip having more of the latter parent's features and in colour a curious blending of pale brown, with purple towards the throat. The plant was a small one, but bore half-a-dozen

or so of fine flowers; with age it should be even finer. From Messrs. J. Veitch and Sons.

Awards of merit were given to—

CYPRIPEDIUM WINNIANUM (*C. Druryi* × *villosum*), which has lustrous flowers of the colour of those of the latter parent, but brighter and more compact in form. It is a very charming hybrid of much promise. From Messrs. Veitch and Sons.

DENDROBIUM NOBILE AMESLE. in which the sepals and petals are of a French white, the lip being finely marked with a very dark velvety maroon spot in the throat and edged with white, the flower of the size of that of *D. nobile*. An imported species from Messrs. Sander and Co.

LÆLIA HYBRIDA MAYNARDI (*L. pumila* Dayana × *Cattleya dolosa*).—This has the dwarf habit of *L. pumila*, the colouring of the flower showing traces of *C. dolosa* very clearly, the lip of a rich shade of violet-crimson. From Messrs. Sander and Co.

CATTELEYA TRIANÆ (*Hillingdon* var.).—This has extra large flowers, the sepals and petals broad, the lip also broad and the colouring bright and distinct, a fine form. From Mr. W. Whiteley.

CATTELEYA TRIANÆ FLORENCE LE DOUX.—A distinct form with pale sepals and petals, the lip extra large, finely blotched with velvety crimson, another good variety. From Mr. Le Doux, East Molesey.

ODONTOGLOSSUM CIRRHOSUM (*Le Doux's* var.).—An extra vigorous form of this lovely *Odontoglossum*, the lip possessing a deeper golden blotch, whilst the individual flowers are large; it might have been majus. From Mr. Le Doux.

MESOPINIDIUM (COCHLIODA?) VULCANICUM GRANDIFLORUM.—A very fine variety with much larger flowers, and also of more vigorous habit, than the type, the individual blooms larger than those of *Epidendrum vitellinum majus*. From Mr. Le Doux.

CYPRIPEDIUM CONCO-LAWRE (*C. concolor* × *Lawrenceanum*).—In this fine hybrid the form and markings of the flower are those of *C. concolor*, but the blooms approach those of the other parent in size, with veinings of its colour, but in a subdued form; the plant bore a twin-flowered spike. From Sir Trevor Lawrence, Bart.

Botanical certificates were voted to *Eria barbata* (Reich.) and *Diuris maculata*, two small forms of Orchids more interesting as curiosities than for their showy character. The latter has pretty yellow flowers, and is an introduction from Queensland in 1825. Both came from the Royal Botanic Gardens, Glasnevin.

Messrs. Sander and Co. had a choice group of various kinds, which consisted of *Phalænopsis Sanderiana*, one plant bearing a short spike of fine flowers of a rosy pink shade, suffused with violet; *P. Stuartiana*, a finely spotted variety; *Lælia anceps Schrodleriana*, with very pure white flowers, having broad petals; one of the best forms. *Dendrobies* were represented by *D. nobile Ballianum*, a pale form; *D. nobile*, imported plants; *D. Leechianum*, much resembling *D. Ainsworthi*; *D. Sanderæ*, with white sepals and petals, the lip expanded and with a dark blotch of maroon. *L. Skinneri alba*, always a choice and much appreciated, as well as beautiful, Orchid, was represented by two plants bearing fine flowers; *L. Skinneri* was also represented by very fine forms, distinct in shading, *L. S. picturata*, very bright, and *L. S. leucoglossa*, with broad petals, being two good varieties. *Cypripedium Exul*, a variety with small, but distinctly marked flowers, and a good example of *Dendrochilum glumaceum* were also shown; also *Masdevallia Hincksiana* and *Arpophyllum spicatum* (silver Flora medal).

Messrs. B. S. Williams and Son had a large group of finely grown and well-flowered *Cypripediums*, remarkably vigorous and bearing large flowers for their kinds. These consisted of *C. Morganie*, very fine in size and colour; *C. Williamsi*, with large blooms, having much of *C. superbum*, but devoid of the spots. *C. nitens*, shown in a basket in excellent condition, is a finely marked hybrid and very showy. *C. insigne* and *C. Harrisianum* were shown in variety. *C. Leeannum*, *C. eury-*

andrum, *C. Sedeni candidulum*, *C. Meirax* and *C. Fitchianum* were also in good form; *C. selligerum*, rich in colour, and *C. Measuresianum*, with *C. Sallieri* and *C. Amesianum* were also included. Other things consisted of *Lælia harpophylla* and a fine form of *Cattleya Trianae alba* (silver Flora medal). Messrs. Hugh Low and Co. sent a beautifully flowered lot of *Phalenopsis*, chiefly *P. Schilleriana*, many with branching spikes of good size, the colour also good. *P. Schilleriana aurea* was also shown, and *Saccolabium bellinum*, making in all a very charming exhibit of well-grown plants (silver Flora medal). Messrs. Pitcher and Manda had a group of small plants of *Cypripedium*, consisting of several hybrids, *C. porphyrospilum* (Lowi \times venustum) being a very distinctly marked and pretty variety, as well as an unusual cross, *Odontoglossum Inseayi leopardinum*, with good spikes, *Cattleya Trianae* and *Odontoglossum Rossi aureum* were also shown here (silver Banksian).

Mr. G. Le Doux had also a small group consisting chiefly of good forms of *Cattleya Trianae*, the best of which were *Empress Frederick* and *Formosa*, the lip of the latter finely blotched with dark crimson; *Miltonia Roezli magnifica*, an excellent variety, was included (silver Banksian medal). Mr. Crispin, Fishponds, Bristol, sent a large boxful of cut *Cypripedium*s in numerous varieties, amongst which *C. Haynaldianum* in fine condition, *C. calurum*, *C. vernixium*, *C. gemmiferum*, *C. Sallieri Hyeaenum*, and others were shown (bronze Banksian medal). Mr. Ingram, Elstead House, Godalming, had *Cattleya Warocqueana alba* (Linden's var.), a pure white form. From Mr. E. G. Wrigley came *Cattleya Trianae alba*, a lovely variety with golden yellow blotch on the lip. Mr. Lucas, Warnham Court, sent cut blooms of *Dendrobium Wardianum album*, and plants of *Angraecum hyaloides*, a very small, but compact plant, and *A. polystichum*, with *Renanthera*-like growth, both bearing small white flowers, and the Warnham Court var. of *Cattleya Trianae*, the lip of which is its distinguishing feature, a rich velvety crimson colour. From Mr. White, Arddaroch, Dumbarton, came a small form of *Cattleya amethystoglossa*, and from the Royal Botanic Gardens, Glasnevin, *Dendrobium teretifolium* and *Epidendrum xanthinum*. Messrs. Veitch and Sons again showed *Epidendrum Endresio-Wallisi*, a small, but most interesting Orchid; and from Mr. Winn, Selly Hill, Birmingham, came a hybrid *Cypripedium*, bearing an extra large flower, *C. The Duke* (*barbatum grandiflorum* \times *Stonei*). A few other cut examples were shown from various sources, but not specially noteworthy.

Floral Committee.

The work of this body was at this meeting comparatively light, the Orchid and the fruit committees having the greatest share of the labour. No first-class certificates were awarded, but awards of merit were made to—

AMARYLLIS HON. W. F. D. SMITH, a remarkably fine self, with extra large and finely formed flowers of an intensely deep vivid crimson, darker at the base; the plant bore two spikes, one only developed. From Viscountess Hambledon, Greenlands, Henley-on-Thames.

CHRYSANTHEMUM BEAUTY OF CASTLE HILL (Japanese large flowering), with extra fine flowers, strikingly distinct and showy, the colour a golden yellow with bronzy yellow centre, the florets narrow, the form good. From Mr. Owen, Maidenhead.

Mr. Miller, Ruxley Lodge, Esher, had a beautiful mixed group of plants, consisting mainly of Orchids interspersed with a few other flowering plants. The Orchids consisted of good decorative kinds, *Cologne cristata* being finely represented by well-grown and most profusely flowered plants, being of themselves quite a feature. *Phaius grandiflorus* was also well shown, the spikes strong, and carrying each an extra number of fine large flowers. *Calanthe vestita lutea*, bearing also good spikes, and *Cypripedium insigne* were also in good condition. Of other flowering plants, some beautiful examples of *Thysacanthus rutilans* were shown, with Lily of the Valley and

other early flowering plants (silver-gilt Flora). Messrs. Paul and Son, Cheshunt, sent a group of *Cologne cristata*, small, but densely flowered plants, and profusely bloomed examples of the pure white Lilac Mme. Legraye, the best of all whites for forcing, and very free. *Alba grandiflora*, Mathieu Dombasle, a double Lilac, and Abel Chateney, a double white form, were also shown, but they did not show to such advantage as the first-named. *Lachenalia Nelsoni* in fine colour, with other kinds, was also staged here. Messrs. H. Low and Co. had a very attractive and showy group of early-flowering Cape and New Holland plants, embracing *Acacia lineata*, *A. cordata*, *A. rotundifolia*, and *A. Drummondii*; *Pimelea spectabilis*, *Eriostemon linearifolium*, *Correa cardinalis*, and *Chorczema Lowi*, their new variety, which blooms profusely in a small state. The flowers are of a brighter shade than those of any other kind (silver Banksian).

From the Hon. P. C. Glyn, Rooksnest, Godstone, came some superb cut specimens of *Acacia dealbata*, much finer than the imported examples; also several dozen cut blooms of *Camellias*, as *fimbriata* and *Countess of Dorking*, with other good old kinds (bronze Flora).

Messrs. E. D. Shuttleworth and Co., Peckham Rye, and Fleet, Hants, had a small group of such forced flowers as *Lilies of the Valley* and *Azalea mollis*, interspersed with *Dracæna Lindenii* and *Cocos Weddelliana*. With these were included some very good examples of early forced *Daffodils*, consisting of such good kinds as *Emperor*, *Ard-Righ*, *Sir Watkin* (extra), *Henry Irving*, very fine; with *obvallaris* (the Tenby), *rugilobus*, *bicolor Horsfieldi*, the double *Daffodil*, *Countess of Annesley*, *poeticus ornatus*, *Leedsii*, *Circe*, and *incomparabilis Cynosure*—in all a very attractive exhibit (bronze Flora). Mr. Chas. Turner staged a quantity of well grown and freely flowered *Cyclamens*, the plants of large size (bronze Flora medal).

Messrs. Cutbush and Son had a number of dwarf and profusely-flowered *Erica Wilmoreana*, very showy, and a lot of well-grown *Dracænas* of the narrow-leaved kinds, as *D. superba* and *D. elegantissima*, with *D. Sidneyi*, which has its foliage more recurved. Messrs. R. Veitch and Son, Exeter, showed two examples of *Arum sanctum palæstinum*, with dark maroon spathes; also *Asparagus retrofractus arboreus*, an erect growing form. Mr. Mortimer, Swiss Nursery, Farnham, Surrey, had a valuable decorative *Chrysanthemum* called *Golden Gem*, just the kind for cutting, being still very fresh and good. Mr. H. B. May showed a small basket of *Carnation Miss Joliffe* in good form. Messrs. J. Laing and Sons showed *Clivia Exquisite* with well formed flowers. Messrs. J. Veitch and Sons sent *Pandanus Baptisti*, a spineless species with graceful arching foliage, deep green in colour, with here and there golden stripes, a promising decorative plant. Several good and very vigorous forms of seedling *Amaryllis* came from Viscountess Hambledon's garden, all being of good quality and extremely showy from a decorative point of view.

Fruit Committee.

Some splendid collections of fruit, several lots of seedling Apples, and a quantity of Mushrooms and other vegetables were staged at this meeting.

An award of merit was given to—

APPLE STANDARD-BEARER, a variety above medium size, somewhat like *Lady Henniker* in shape, with firm, brisk flesh of good flavour. It was of a dull yellow colour, slightly tinged with red on the sunny side and russet on the reverse. It is said to be a heavy cropper. From Mr. W. H. Bannister, Cote House Gardens, Westbury-on-Trym, Gloucester.

Seedling Apples were sent by Mr. Clarke, Saffron Walden, and Mr. R. Maher, Yattendon Court, Berks. Some very fine Apples, grown within the five mile radius, were sent by Mr. Roupell, the varieties being *The Queen*, *Newton Wonder*, *Beauty of Kent*, *Prince Arthur*, *Melon Apple*, and *Baumann's Red Winter Reinette*. A very large collection of fruit in excellent preservation (100 dishes of Apples and six of Pears) was staged by Messrs.

Cheal, of Crawley. The fruits, remarkable for their beautiful colour and clear skin, were firm and of large size, and comprised the best keeping varieties. Among those noted for size, colour, and good quality were *Annie Elizabeth*, Waltham Abbey Seedling, *Winter Queening*, *Fearn's Pippin*, *Ribston and King of Pippins*, *Royal Russet*, *Bess Pool*, *Col. Vaughan*, *Swedish Reinette*, *Cox's Orange*, *Lane's Prince Albert*, *Mother Apple*, and the recently certificated new Apple named *Armorel*, a great addition to our late keepers (silver-gilt Knightian medal). Mr. A. H. Smee, The Grange, Wallington, Surrey, sent seventy dishes of Apples of distinct varieties. This was a very fine collection, and included some kinds rarely exhibited, the best dishes being *Bismarck*, *Golden Noble* (very fine), *Lady Hayes*, *Ramborough*, *Beauty of Kent*, *Jubilee*, *Annie Elizabeth*, *Baumann's Red Winter Reinette*, *Pearson's Plate*, *Court Pendu Plat*, *Wealthy*, *Wadhurst Pippin* (very fine), *Caroline*, *Sandringham*, *The Queen*, and others (silver-gilt Knightian medal). Messrs. Rivers and Son, Sawbridgeworth, sent thirteen distinct varieties of home-grown Oranges and one dish of Citrons, with a very fine lot of Apples. The Oranges were staged in beautiful condition, being specially bright and clean with foliage attached. The varieties staged were *St. Michael's*, the *Variegated Orange*, *Seville*, *Maltese Oval*, *White Orange*, the *Long Orange*, *Maltese Blood*, *Pernambuco*, *Silver Orange*, &c. Among the Apples were some noble fruits of *Wadhurst Pippin*, *King of Tompkins County*, *Buckingham*, *Nancy Jackson*, *Tower of Herts*, *Jacquin*, *Bismarck*, *Cox's Orange*, *Reinette dorée* of *Henogen*, *Belle de Boskoop* and a very fine dish of *Passe Crassane Pear* (silver-gilt Knightian medal). From Lord Foley's gardens (gr. Mr. Miller), *Ruxley Lodge*, were sent numerous varieties of Apples, including good *Blenheim Orange*, *Claygate Pearmain*, *Cellini Pippin*, *Minchal Crab*, *Beauty of Herts*, several dishes of Pears and a basket of *Black Alicante Grapes*, with some pots of *Strawberries* in bloom (bronze Knightian medal). Mr. Miller also sent several lots of *Peach* wood in bloom from the open walls to show earliness of season, also a dish of *Mushrooms*. A box of *Peaches* was staged from the *Cape Fruit Syndicate Co.* These were flavourless and undersized. A quantity of *Mushrooms* was staged of excellent quality, those from Mr. Hardy, Ash House, Parson's Green, S.W., being very fine and of great substance. Mr. George, of Putney, and Messrs. White, Camberwell, showed excellent dishes. Messrs. Laxton, Bedford, sent *Laxton's Chou de Bedford Broccoli*. This was considered too coarse to find much favour, being somewhat like a large Cabbage. A very good lot of *Witloof Chicory* was sent; this was nicely blanched and not at all bitter, thus showing its value either as a salad plant or for cooking as a vegetable. It had been grown in the society's gardens at Chiswick.

Annual Meeting.

The general annual meeting was held at the society's offices, Sir Trevor Lawrence in the chair. The secretary read the minutes of the last meeting, and the report, having been handed to the Fellows present, was taken as read. Forty-seven new candidates were elected. A hearty vote of thanks was passed to the three members vacating their seats at the council—Baron Schroeder, Rev. W. Wilks and N. N. Sherwood. Messrs. A. Sutton and Laing were appointed scrutineers of election of new members of council, Sir J. T. Llewellyn, Bt., the Hon. W. Rothschild, and J. T. Bennett-Poë being declared unanimously elected. The retiring officers were all re-elected. The chairman stated the year just closed had been one of steady progress and good work. The Temple show was very satisfactory, and the conferences at Chiswick on fruits and Begonias were encouraging. The meetings at the Drill Hall were much better attended and had given great encouragement. With regard to the work done at Chiswick in the way of testing vegetables and fruits, much good had been accomplished. As far as the proceedings of the society were

concerned, the country members now got full value, as they were kept fully informed of the society's doings by the journal. The conifer conference report was a valuable book, and enabled Fellows at a distance to reap the benefits of the work of the society. This work necessarily causes the society a large outlay, and this brought him to appeal to the Fellows to get a larger number to bear the strain. The loss of Fellows was also to be taken into account, and though there was an increase of 206 Fellows, there was only a slight gain in the amount brought into the society. Last year the large vinery needed extensive repairs, this alone absorbing £386, including new boiler. Had this not occurred, the balance would have been on the right side of the year's total, but for some time less would be needed, as most of the buildings were now in a fairly good state of repair except two old houses they did not require and which would be removed. The report furnished to Fellows gave full particulars as to expenditure, and it would be found the work had been done very economically. With regard to the scheme for examination of students in horticulture, 72 candidates presented themselves at Chiswick, and they now had the promise of three scholarships of 10s. a week for three years from the Company of Gardeners, and hoped to get more from the Government in due course and to extend the work. Chiswick had done good work at a net cost of £1514, including repairs. Their thanks were due to the gentlemen who read papers at the various meetings, and he anticipated the papers promised for this year would prove equally interesting. He then called on Professor Foster to move the resolution concerning the secretary, Rev. W. Wilks, that in future he be a paid officer of the society. This was seconded by Mr. Hudson and carried unanimously. Sir F. Lawrence, in referring to the Chiswick Gardens, spoke of Mr. Barron's good work and the excellent way he conducted the affairs of the society.

NATIONAL CHRYSANTHEMUM SOCIETY.

The general committee of this society held a meeting at Anderton's Hotel, Fleet Street, on Monday evening last, Mr. R. Ballantine being in the chair.

After the minutes of the preceding meeting had been read and confirmed, the secretary announced that Sir Edwin Saunders would not be able to take the chair at the annual meeting next Monday, and it was resolved to ask Mr. H. R. Williams, one of the society's vice-presidents, to occupy that position. It was resolved to have the society's form of certificate reduced by process and printed for the purpose of adapting it to commendations and votes of thanks for exhibits staged at the meetings of the society.

An interesting letter was read from Mr. J. Earland acknowledging the receipt of the silver-gilt medal awarded to him for the frozen Chrysanthemums he sent from New Zealand last autumn, and giving some account of his work in the raising of new seedlings. The chairman announced that the two stands of frozen prize blooms which the N.C.S. had decided to send out to New Zealand as a reciprocal exhibit would be despatched by steamer on the 24th inst. The special prize fund, without counting cups and medals offered by friends of the society, now amounts to £128 14s.

The draft report and financial statement which will be presented to the annual meeting were then discussed and agreed. The past year promises to be a very successful one, but the actual figures cannot yet be ascertained, as some important items may yet come in before the auditor's work is finally concluded. Eleven members and four Fellows were elected, and three societies affiliated, including one in Ireland, viz., the Dalkey, Killiney and Glenageary Chrysanthemum Society.

Votes of thanks to the chairman and the secretary brought the meeting to a close.

United Horticultural Benefit and Provident Society. The monthly meeting of this society was held at the Caleonian Hotel, Adelphi Terrace, Strand, on Monday evening last. Seven new members

were elected, and one other nominated. Two members only are on the sick fund. The annual meeting will be held at the above hotel on Monday evening, March 13, at 8 o'clock. Mr. Arthur Veitch has kindly consented to preside.

Gardeners' Orphan Fund.—I have the pleasure to inform you that Baron Ferdinand de Rothschild has kindly consented to preside at the annual dinner of the Gardeners' Orphan Fund, on Wednesday, March 22, at St. James's Hall, Regent Street.—A. F. BARRON, Hon. Secretary.

The Gardeners' Royal Benevolent Institution.—As an instance of what local societies are able to do in aiding the gardening charities we are asked to mention that the Reigate and District Chrysanthemum Society has remitted to the Gardeners' Royal Benevolent Institution no less a sum than £136 10s. during the four years it has been established, and has thus been the means of nominating thirteen of its members as life members of the institution. Mr. James Brown, the indefatigable honorary secretary of the Reigate Society, expresses a hope that kindred societies, if able, may be induced to do likewise, and thus not only add to the funds of an excellent charity, but also benefit their own members by conferring upon them, as funds permit, the privileges of life membership of the institution.

ANTHRACITE COAL AND GARDEN BOILERS

IN the absence of fuller information it is not possible accurately to determine why "G. C. L." (see page 98) has failed with the above named coal, which I consider the best for horticultural purposes generally. The suggestion to remove the boilers to such a distance is a serious item, and one which I should myself consider long and well before deciding upon. Of course it is not impossible by any means, for there are many places where the boilers are situate at far greater distances and do their work well, but the seriousness lies in the fact that the cost would be nearly doubled for maintaining the heat as before. For some years past I have used anthracite, and I always speak of it in the highest terms. One large saddle boiler in particular happened to be so arranged by working in conjunction with others, that the flue had to cross a roadway 10 feet or more before it reached the chimney. This flue, moreover, was nearly level, but with a chimney-stack 16 feet high anthracite coal was a perfect success, the boiler itself being merely covered with iron sheets to throw off the wet. In the early part of 1891, with bitter cold wind blowing day and night (it happened in the month of March), I have recorded in my diary the fact that it burned for twenty-one hours, and maintained a splendid heat without any interference. In other words, it was made up under my personal supervision at 5.30 p.m., and was not interfered with till 2.30 p.m. the following day, and would have easily gone to twenty-four hours had it not been severe weather at the time. I continued this test for some days purposely to convince a stoker that anthracite could be burnt in that particular boiler. The size I prefer to use is about that of a 2-lb. loaf of bread, as I have found that the more open the fuel lies in the fire-box the better for combustion generally. Draught, then, I consider an all-important point, and in places where it can be done, I would much prefer 25 feet or 30 feet for a stack than one at 16 feet, because the damper will do the rest. Anthracite coal will not stand poking, neither does it require it, provided always you make up your fire with clear bars and then allow it to burn quite low again before recharging it. The fire that I record above as lasting twenty-one hours was never touched with a poker the whole time, and when eventually it was cleaned it was done more by pushing the embers to and fro with a strong iron hoe along the bars, which cleared them sufficiently to go on again as before. At a certain heat this coal has the peculiarity if interfered with of breaking up precisely as lime does in the process of slacking, and if interfered with much while in this state it quickly becomes a dead black mass. If left alone it will steadily

burn and consume almost every atom, and a fire that will burn steadily for such a time cannot do aught else but maintain a steady uniform temperature. Only a week or so since an instance was brought before my notice of a nurseryman having a fire of anthracite which lasted for nearly three days; the boiler was not in active use, and the fire was merely kept going for the purpose of keeping it dry; hence it was charged with anthracite and, the damper pushed nearly home and the weather being comparatively mild, forgotten, but being required a few days after, the proprietor was surprised to find fire still remaining, so that its lasting properties seem almost endless. I have successfully employed anthracite in varying forms of boilers. There are, of course, differences in the coal itself, and what I find best is that known as the "big vein"; this is very satisfactory, while "cobbles" are just the reverse. By using anthracite night stoking can be entirely dispensed with, combined with which is the satisfaction of a good heat being maintained and a good fire still remaining to work upon; the saving, too, of labour is considerable, so that even if the coal in some districts is the most expensive, I believe it would be equally cheap all round in the end. Another point, it is smokeless, and has not those overwhelming sulphurous fumes attending the use of coke. The ashes and clinkers also are reduced to a minimum, a proof that the greatest amount possible is obtained from the coal. It is to be hoped that "G. C. L." may yet see his way to overcoming his difficulty in the existing stokehole with perhaps a few needed alterations. E. JENKINS.

Hampton Hill, Middlesex.

NOTES OF THE WEEK.

Early-flowering Irises.—Three others of the early-flowering Irises have stood the late winter at Oakwood. *Iris Bakeriana* is in fine flower, and *I. Histro* and *I. histrioides* are in large bud. The only protection when growing that they have had was a few Oak leaves. When the flowers open they have a glass over them when the weather is trying.—GEORGE F. WILSON.

Chinese Primulas.—Messrs. Veitch send us a gathering of flowers of their strain of Chinese Primulas, many of them being remarkably fine and showing a decided advance in this favourite winter flower. Some of the semi-double varieties are very good. All the single sorts, ranging from rich crimson to pure white, have flowers of great substance, while at the same time they are large and of good form.

Coccocypselum discolor may be made note of as an interesting stove plant for a basket. It produces ultramarine-blue berries, very rich against the small deep-coloured leaves. An ordinary basket will suffice, and this should be lined with Sphagnum Moss, the soil being composed of equal parts loam and peat, mixed with sufficient sharp silver sand to keep it porous. It is a native of the mountains of Jamaica. There is a specimen in the stove at Kew.

The Glory of the Snow (*Chionodoxa Lucillie*) is a beautiful thing to grow in pots. It may be readily grown in this way, and home-grown bulbs should be selected, as when collected, it sometimes happens that bulbs of *Scilla bifolia* get mixed with those of the *Chionodoxa*. They are similar, but it is disappointing to get such a mixture. The bright cheerful blue colour of the *Chionodoxa* makes it of special value for this purpose. *C. sardensis* is also useful, the flowers of the richest blue.

The weather in New Orleans.—This is the coldest winter we have had in New Orleans for a long time. We have had 7° to 8° of frost, which destroyed a few of the Palms out of doors, *Phoenix reclinata* principally. *Phoenix canariensis* and *dactylifera*, *Latania borbonica*, *Rhapis flabelliformis*, *Cocos australis*, and *Brahea filamentosa* have not suffered, with the exception of some of the

outer leaves being scalded by the sun striking them while the frost was on them. *Seaforthia elegans* stood 4° of frost last year; also *Cocos plumosa*. This year the *Seaforthia* was killed. I do not know how the *Cocos plumosa* has done. We have had snow here only twice in fifty years.—C. R. PANTER, *New Orleans*.

Carnation Miss Joliffe Improved.—I must say another word in favour of this useful Carnation, which, in spite of all the bad foggy weather we have experienced, is now flowering freely with me. It was some time before I could feel convinced that plants which I had seen were any other than well cultivated examples of the old form, but after growing it myself, I must say I never had the old variety in such good condition at this season of the year, either with regard to quality or number of flowers.—H.

Hyacinthus azureus is one of the most charming of early spring flowers. It is known also as *Muscari azureum* and *M. lingulatum*, the plant doing well against a warm sheltered wall. The flowers are of great beauty, quite bell-shaped and of a beautiful azure-blue colour. It is always well to protect the blooms, and even leaves for that matter, by placing a line of coal ashes or similar material round the plant to prevent slugs from devouring them. Slugs are extremely partial to both foliage and bloom.

Seedling Clivias.—I am sending you blooms of my seedling *Clivias* similar to the group which I exhibited at the R.H.S. show last March. Grouped with Palms or in vases, *Clivias* are most effective for mid-winter or spring decoration. Of easy culture, lasting long in bloom, they merit more extensive cultivation.—P. DAVIDSON, *Iwerne Minster Gardens, Blandford*.

*** Flower-heads remarkably large and the colours good, but we cannot see any advantage in naming every sort, seeing that in the case of many there is so very little difference in the shade.—ED.

Gardens at Cannes.—In a recent letter Sir P. Currie writes to us of the gardens at Cannes: "The prettiest things in the floral way at Cannes were the common *Roses de Bengale*, which were rampaging all over the place, and falling in great festoons from the terraces. I like the terraced Olive grounds much and the blue-green shade where the *Anemones* and *Violets* will soon be making a lovely carpet. The sustaining walls built without any cement or mortar put our builders to shame, but it is perhaps the absence of severe frost that alone makes them possible. One has a surfeit of Palms at Cannes. The place has, I think, been spoilt by sweeping away the beautiful old Umbrella Pines and Olives, and filling every corner with those cabbage-like exotics. A tall Palm in a landscape is lovely, but the shorter varieties, crowded as they are, are quite uninteresting."

*** It is too often the rule to neglect or forget the native things of the spot. We remember with pleasure the few gardens in the Riviera where the fine Heaths of the district and the native trees and bushes were preserved. The gardens in the Riviera have a very hard look from the prevalence of plants for which the country is not really fitted.—ED.

The flowers of Siberia.—Can anyone tell us anything of the flora of Siberia? Although for the most part a frozen desert during the winter season, yet it is by no means a flowerless waste during the hot days of spring and summer; indeed, travellers now and then tantalise us with their praises of the flowers which spring up soon after the snow melts away. For example, in Sir John Lubbock's recent volume, "Beauties of Nature," in the introduction at page 28, he tells us that "M. Patrin, on coming down from the frozen heights of the Altai, came suddenly on a view of the flowery plain of Obi"; and the description goes on to say that the plain was "green only in places, and for the rest covered by three flowers—the purple Siberian Iris, the golden *Hemerocallis*, and the silvery *Narcissus*—green, purple, gold and white as far as the eye could reach." Is the Iris

referred to *I. sibirica* or is it *I. lævigata*, now believed to be the wild parent of the *I. Kämpferi* of Japanese gardens? Most of the *Day Lilies*, or *Hemerocallis*, extend from N. Europe through Siberia to Japan, but to what species the "silvery *Narcissus*" can belong completely puzzles me, and I shall be glad of any practical information.—F. W. BURBIDGE, *Dublin*.

Lachenalia Nelsoni.—In a small group of *Lachenalias* exhibited at the Drill Hall on Tuesday last, *E. Nelsoni* was by far the finest, surpassing in beauty *L. aurea* and the other forms shown with it. It is strange that such a beautiful flower as *L. Nelsoni* does not become more common in gardens, but one seldom sees it, although most useful at this season of the year. The good work accomplished by the late Rev. John Nelson in the raising of hybrid *Lachenalias* is well known, and *L. Nelsoni*, appropriately named after the raiser, is unquestionably his greatest triumph. A coloured plate of it, together with some others, was given in THE GARDEN, July 17, 1880, and an interesting note from Mr. Nelson concerning this hybrid appeared in the issue of February 5, 1881. At first it was considered too close to *L. aurea*, but there is no question as to its absolute distinctness and superiority over that type. The flowers of *L. Nelsoni* are large and rich golden yellow in colour, sometimes touched with green, which, however, does not detract from their beauty, whilst they are borne on strong scapes. The growth is free and robust. Well-grown plants will bear scapes carrying nearly twenty flowers, which stand out boldly from those of the other *Lachenalias*.

PUBLIC GARDENS.

Park at Stockton-on-Tees.—The new public park at Stockton-on-Tees, which it is hoped that the Duke of York will open in due course, is a fine open space lying between Stockton and the picturesque little village of Hartburn. For many years the ground was cut into grass fields, through which ran a public footpath connecting Hartburn with the town. The whole neighbourhood is now wonderfully improved, and quite a colony of charming villas has sprung up in the vicinity of the new park.

An open space for Clerkenwell.—The London County Council have in trust £10,000, received from the Treasury in lieu of the reservation as an open space of a portion of the site of Cold-bath Fields Prison, now entirely utilised for parcel post purposes. The Clerkenwell Vestry suggests that this money should be used in the acquisition, as an open space "for ever," of a vacant plot of land abutting upon Rosebery Avenue and opposite the New River Head, Sadler's Wells, which is now opened out to the public view. The ground in question is owned by the County Council.

The weather in West Herts.—During the past week the weather has been very changeable; the most noteworthy feature, however, was the violence of the wind after such a long period of calm weather. Throughout Thursday, Friday, and Saturday in last week the wind remained singularly high, and often rose to the force of a gale—direction south-west to west. Rain fell on each day of the week, but to the total depth of less than half-an-inch.—E. M., *Berkhamsted*.

RAINFALL IN 1892.

I SEND you, as in previous years, the rainfall record of Belvedere House, West Meath, and Belvoir Castle, Grantham. Both places have much the same relative positions. The fall in Ireland is much in excess of that in Lincolnshire, as during the first eight months of the year that county suffered greatly from drought. There is one peculiarity in the two records, both of which have been accurately kept. While the rainfall at Belvedere is more than 12 inches in excess of that at Belvoir, the days on which rain fell are less by 16 than at Belvoir. One thing surprised me this

year in Ireland: While it was a disastrous year for all fruits, and, as a rule, for many kinds of herbaceous plants, the *Roses*, especially the *Tea* varieties, at least in my garden, were quite up to the average. I have come to the conclusion that *Tea* *Roses* adapt themselves remarkably well to the Irish climate, and should be largely planted.

BRINSLEY MARLAY.

BELVEDERE, WEST MEATH.

Month.	Total depth.	Greatest fall in 24 hours.	Date.	Number of days on which '01 or more fell.
	Inches.	Depth.		
Jan. ...	1.65	.26	21	14
Feb. ...	2.61	.56	7	17
March ...	.69	.32	14	6
April ...	1.31	.36	24	13
May ...	5.25	1.20	26	17
June ...	2.92	1.56	9	10
July ...	3.79	1.14	2	12
Aug. ...	7.56	1.53	7	19
Sept. ...	3.74	.64	2	16
Oct. ...	2.64	.80	14	15
Nov. ...	3.92	.59	17	20
Dec. ...	1.91	.27	8	15
Total ...	37.99			174

—JAMES BAYLISS.

BELVOIR CASTLE, LINCOLNSHIRE.

Month.	Total depth.	Greatest fall in 24 hours.	Date.	Number of days on which '01 or more fell.
	Inches.	Depth.		
Jan. ...	1.24	.25	11	19
Feb. ...	2.05	.52	15	17
March ...	1.36	.32	16	17
April ...	1.13	.27	28	13
May ...	2.47	.63	4	14
June ...	2.77	1.56	29	18
July ...	1.84	.70	20	11
Aug. ...	1.55	.28	24	14
Sept. ...	3.05	1.25	21	17
Oct. ...	5.92	1.48	3	24
Nov. ...	1.18	.24	5	16
Dec. ...	0.91	.28	9	10
Total ...	25.49			190

—WILLIAM INGRAM.

Names of plants.—*Jules*.—1, *Correa cardinalis*; 2, *Acacia platyptera*.—*W. W.*.—1, *Zygopetalum intermedium*; 2, *Cattleya Trianae*; 3, a good coloured *Laelia anceps*.—*Odonto*.—1, *Oncidium Phalaenopsis*; 2, *Odontoglossum Andersonianum*, ordinary form; 3, *Odontoglossum crispum*, extra good; 4, *Odontoglossum Edwardi*.—*C. X.*.—1, *Cattleya chocoensis*, dark form; 2, *Oncidium curtum*; 3, *Cypripedium politum*, good bright flower.—*J. Seebright*.—1, *Calanthe Regneri*; 2, *C. Sanderi*; 3, *C. Stevensi*.—*W. Harding*.—*Billbergia nutans*.—*E. Castle*.—1, *Cattleya Trianae*; 2, *Odontoglossum Edwardi*.—*C. R. Panter*.—Your tufted Pansy is probably *Abercorn Gem*.—*R. H. S.*.—1, *Conoclinium ianthinum*; 2, *Celsia cretica*.—*Harry Buckley*.—Forms of *Helleborus orientalis*.

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No. 1109. SATURDAY, February 18, 1893. Vol. XLIII.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare.*

ORCHARD AND FRUIT GARDEN.

PHASES OF PEACH "YELLOW."S.

WHEN the tips of young Peach and Nectarine shoots do not assume a rich green colour in due course, but are rather of a sickly yellow hue, the tree is said to be affected by the "yellows." Unless somewhat drastic remedies are applied the trees go from bad to worse, and are soon unworthy of the space they occupy. Whether these yellows are curable or not is a moot point, and if we accept the view of American observers with whom I have had a discussion on the matter, they are not, or at any rate not in all cases. In my opinion, however, very much depends upon what causes the disease, if such it may be termed, and also upon the time when proper remedial measures are first attempted. I repeat proper measures, as I have proved that what answers well in one case fails completely in another. In most cases the sickly state of the trees is due to a deficiency of something that goes to make a soil suitable for the growth of Peach and Nectarine trees. Restore these constituents, and if the trees are not already half dead, there will soon be a welcome change in their health and appearance. In America the trees rapidly attain a highly productive size, are cropped for a few years to their full extent, and are rooted out directly they give signs, in the shape of the yellows, of complete exhaustion. Labour is too scarce and the idea too slow for any attempt to be made in the way of renovating the greatly impoverished soil, but in this country circumstances are very different. We prefer to keep our trees in a productive state for as many years as possible, and, as a rule, succeed in doing so three times as long as they do in the Peach-growing States in America.

The remedy most often recommended and very generally applied for "yellows" is wholly or partially lifting the roots of the affected trees. It is the surface soil that absorbs most of the food supplied to the borders, and the further down the roots descend the worse they fare. If the bulk of the roots is deeply located, the foliage soon indicates that something is required more than reaches it, the "yellows" being the usual outcome. There are chemicals which, if they could be placed within reach of the roots, would to a certain extent correct the unhealthy top-growth; but the first proceeding ought in all cases to be root-lifting. Wholly lifting and raising the collar well above the level are sometimes most beneficial, this being especially the case when the trees had previously sunk several inches below the level. Bringing up the roots to near the surface and relaying them in quite fresh compost is not unfrequently a perfect remedy for the yellows, but not always. Soils vary so considerably in their composition, that one very important constituent may be either missing or not strong enough, unless acted upon by some other element, to restore the proper balance. I have lifted trees and replanted them in quite fresh compost, and yet not cured them of the "yellows." A tree of Peach Bellegarde in an early house was partially lifted in the autumn of 1889 and to a cer-

tain extent restored to better health. Being regarded as a supernumerary, it was heavily cropped the following summer, and still more heavily in 1891. In spite of good attention in the way of supplying water and liquid manure, the yellowness of the leaves became only too apparent, and last February, when the leafy growth commenced, this was as yellow as the tips of properly blanched lily-white Seakale. Curiously enough, a large tree of Peach A Bec on one side of it and Nectarine Lord Napier on the other were in a most satisfactory condition, or as green as could be desired. So bad was the condition of the tree, that I decided to either kill or cure it. A 12-inch potful of newly-slaked lime was spread over an area of about 7 feet by 5 feet—this being the space principally occupied by the roots—and duly forked into the surface, a good soaking of soft water following. The effect was almost magical. Before the leaves were fully grown they became beautifully green in colour, the tree also making good growth, as well as ripening an extra heavy crop of fruit. Most probably the lime (made from magnesian limestone rock), acting chemically on the rather strong loamy soil, liberated potash previously locked up therein, and these elements, that is to say, potash, lime and magnesia, supplied the missing links. If there is little or no chlorophyll in the leaves they cannot possibly perform their functions properly, and unless the deficiency in the soil is made good or corrected in some way, the tree is bound to gradually dwindle away. Where, therefore, newly-started trees present a somewhat sickly appearance from the first, and it is known that lime has not reached the soil about the roots for two or three years or longer, the effects of a good dressing, well washed in, should be tried at once in preference to either tampering with chemicals about which not much is known or, worse still, doing nothing at all. If lime does little or no good, its employment in moderation will certainly not be harmful, unless it comes into contact with quite fresh farmyard manure, soot, or chemical manures, in which case it might generate ammonia to such an extent as to be injurious to the young foliage overhead.

A light attack of the yellows may in the first place be due to poverty at the roots, and if the soil of the border is naturally very poor, a dressing of lime would perhaps only aggravate the evil—that is to say, make it after a short time still more impoverished. The remedy in this case is plain enough, and consists in feeding at the roots more frequently than previously. Gardeners seem to be afraid, or else think it wasteful, to use liquid manure for the trees either during the winter or just prior to their starting into active growth. More often than not they wait till the trees are well advanced in growth or till the greatest strain is put upon them by the fruit; whereas they would do well to commence very much earlier. Exhausted borders should at least have a soaking of moderately strong liquid drainings from a mixed farmyard or that in which urine abounds, the roots being less likely to be injured before they are active than afterwards. The presence of ammonia—that is to say nitrogen—in the soil in appreciable quantities favours a stronger top-growth than would have been the case if at all deficient, and the winter supplies being supplemented by spring applications of liquid manure, the healthy start is well sustained, better crops of fruit resulting as a matter of course. All are not in a position to use farmyard liquid manure or even the drainings from horse stables, but that is no excuse

for starving Peach and Nectarine trees into the yellows. Perfect chemical manures are advertised and supplied at comparatively cheap rates in when the trees are started and subsequently now-a-days, and if these are freely applied and washed in quantity, as advised by the vendors, there will be no marked absence of chlorophyll in the leaves, unless red spider is allowed to gain the mastery. Both native and Peruvian guano are very good fertilisers for Peach borders, and so also are fish-bone manure and such like.

There is yet another cause of the trees presenting a sickly yellow appearance, this being none other than a manure-sick border. It once fell to my lot to take charge of a large Peach house that had for several winters previously been heavily mulched with solid manure from a mixed farmyard. Drainings from the same yard, and which were very strong, had also been very frequently and liberally used, with the consequence that the naturally retentive loam of which the border was principally composed had become poisoned by manure. The removal of some of the much-trodden soil down to the surface roots is desirable in most cases where the trees are large and bear heavy crops annually, a moderately rich compost being substituted. If instead of this mixture of loam and solid manure a good thickness of farmyard manure is used, this is apt to keep the border too cold as well as rich, as it effectually excludes warmth and air, and is about the worst form of mulching that can be used. The remedy, as I soon found, for over-richness of borders is a dressing of lime and a change of treatment generally. Apply this at once at the rate of a 5-inch potful to every square yard of border, lightly fork it in, and then give a soaking of soft water. In the worst cases this application should be repeated two or three seasons in succession, and then cease for about three years.

W. IGGULDEN.

Seedling Gooseberries.—A most unusual feature in any garden is found in seedling Gooseberry bushes. I saw a batch of about 100 of these, though yet not much beyond yearlings, in the kitchen garden at Titsey Park. I learned from Mr. J. Dean, the gardener, that he saved the seed indiscriminately from a number of varieties, dried and matured it, then sowed it in the autumn of 1891 in pans. The seed lay dormant the whole of the winter, then began to germinate irregularly in the spring. After being hardened off in a cold frame the seedlings, carefully lifted, were dibbled out into the border where I saw them growing. One only had fruited this year, producing fruits of the Whitesmith character. Not a few show the character of one parent—the Red Warrington. Tied up to stakes the stems were clean, and had generally broken into side shoots at from 12 inches to 15 inches high. Most probably the bulk will fruit during the ensuing summer. It is very doubtful whether there will be material variation from the parent sorts, as to produce variation some intercrossing is needful, and most unlikely insects affect Gooseberry blossom to any appreciable extent, as it opens so very early in the spring. The fact that seedling Gooseberry bushes can be so easily raised may encourage some to try their hands at the more difficult task of intercrossing, although it is not easy to determine in what direction very much good can be accomplished. We have literally a wealth of good Gooseberries, but whilst flavour seems to be chiefly allied to smallness of fruits, very heavy croppers and large fruits are rather deficient. Such sorts as Lancashire Lad and Whinham's Industry may be intercrossed with advantage with Ironmonger or Champagne in the hope of securing in the former higher flavour, but then we may but get in return something allied to Red Warrington. This variety, however, is notorious for the excessive

number of its spines, and for that reason makes a capital fence plant. Still there is room for intelligent effort in the direction of raising more and, if possible, improved sorts of Gooseberries.—A. D.

Apples on chalk.—The experience of Apple culture on chalk which Mr. Molyneux has at Swanmore is of the utmost value to all in his district. He seems, however, to be in better state than Mr. J. Dean at Titsey Park, East Surrey, who is also growing Apples largely on a warm sheltered hill-side looking nearly due south, but has only the merest surface of soil, hardly more indeed than 9 inches, and on which it is naturally much more difficult to induce trees to grow than is the case in the rather deeper and stiffer soil at Swanmore. The bulk of the trees that constitute the large orchard at Titsey Park are standards on the Crab stock, for there is little fear here of growth becoming too gross on so thin a soil. Necessarily the trees were planted very shallow, indeed, originally almost level with the surface, but with time they have settled down materially. They have been planted from twelve to fifteen years, and generally are both clean and healthy. Very few indeed show evidences of canker, and those are such as will exhibit this disease in almost any soil. The after course of treatment, so far as circumstances will allow, for labour is distinctly at a discount, is to take advantage of hard weather to haul into the orchard a quantity of manure and to lay this thickly about the roots, so that it becomes during the summer a valuable mulch and also materially feeds the roots. As it decays and thus becomes incorporated with the soil, it encourages the roots to keep to the surface. Occasionally, too, accumulated heaps of garden refuse, road-sweepings and trimmings, &c., that have become decomposed are carted on to the ground and spread about. The fruit product is usually an excellent one, so far as quality is concerned, and abundant, though the Apples are not large. They, however, seem to keep well, perhaps because on this sunny slope so thoroughly matured.—A. D.

YOUNG WOOD ON OLD TREES.

THE article by "I. M. H." (p. 59) might be read by those who work on the close pruning system with a great deal of profit. I have held the opinion for some years that the knife is as much a weapon for evil as for good in the hands of many who prune indiscriminately, and whose only object appears to be to keep the trees in shape and to prevent them from making any headway after they have reached a certain size. Nothing can be more opposed to Nature than the attempted restriction of trees to a small size by the use of the knife and by cutting away year after year all the young wood of the previous season's growth. The character of the young wood made after such severe pruning well shows this, for it protests annually against the treatment by making a great number of gross shoots only to be cut away again. But suppose these gross shoots are left to their entire length, what do we find? Not that they again grow to a similar length the succeeding year, but that they increase only a little, and their vigour is spent in throwing out fruit spurs all along the last year's wood, so that eventually these growths when fruiting can be well compared to "ropes of Onions," as your correspondent says. This giving the trees their heads has, too, a steadying effect on the over-production of useless shoots all along the branches, shoots that come out as regular thickets on a hard-pruned tree. Instead of these we get additional fruit-spurs. Nature, being satisfied by the freedom given at the ends of the branches, does not force so many of these useless young growths to form.

Though "I. M. H." did not point this out, I feel sure that this freedom of growth combined

with free root-action is a great antidote to canker. Canker, it is generally conceded, may be produced by a variety of causes, and I think I have ample proof for saying that over-pruning or over-restriction of root and branch, the latter especially, is one of the most frequent causes of this disease. I know at the present time many Apple trees that were badly cankered, though young, a few years ago, and now on the same trees there is scarcely a sign of canker, while in many cases the trees are more than double the size that they were five years ago. Since that time no digging has been done between them, and three times they have been allowed to "have their heads," and well they have paid for it. Even where it is necessary to restrict the size of the trees this should not be done with the knife, but by working the trees on dwarfing stocks and giving them a fair amount of freedom on these. Of course, it is necessary to use the knife more or less on all trees to preserve the balance and to prevent them from becoming too thick, or making their growths in the wrong direction, also for shortening and thinning old fruit-spurs, but beyond this or for inducing fruitfulness the knife is a failure.

J. C. TALLACK.

WALL FRUITS.

IT is always a good plan to get nailing well in hand before Christmas, pending a spell of very sharp weather, for, however active and willing workmen may be, they can make little headway at the nailing or tying with the thermometer several degrees below freezing point. There is a very fair promise of fruit; Peaches and Nectarines, Plums and cordon Pears especially show plenty of buds, and given such fair promise, the fruit grower will not be sorry to get the weather rather on the cold side for another three weeks from now (Feb. 6), as a damp, close February is often answerable for an early plumping of bud and consequent expansion of flower. So far as Peaches and Nectarines are concerned, it is, I think, matter for congratulation that the very early ripening varieties are not proportionately early in the flowering; it seems rather strange that a sort ready by the middle of July should be contemporary in the expansion of bud with another that is not fit until the end of September. These two periods with the intervening time represent a long outdoor Peach season. With sufficient trees in variety, one can get an uninterrupted supply for two and a half months. Hale's Early is a capital Peach to succeed the first earlies and does well outdoors, but I cannot say as much for it inside. Here it is a bud-dropper, and there are few houses where it will not show more or less this objectionable characteristic, even when all other varieties in the same structure may never show any tendency to such a failing. Between the completion of nailing or tying and the time for covering up, it is well, especially on old walls, to keep a sharp look-out for red spider. Given a few sunny days this pest will be putting in an appearance, and should be promptly dislodged with a rather strong mixture of some insecticide vigorously applied with the garden engine, the operator receiving instructions to do the work thoroughly and give a regular drenching to all parts of both wood and wall. Dessert Cherries are also attacked some seasons with the same pest, and I can have a similar drenching before the covering goes up. Whilst on the subject of enemies, I may mention that wasps are already in the field, two having been killed. No quarter should be given these early visitors; all fruit growers suffer from their depredations in late summer and autumn. If fish netting is to be used as a spring protection, the stock already in hand can be overhauled at once and any mending done that may be necessary, for a spell of mild weather will mean a rapid bud opening of our earliest wall fruit, the Apricot. I like to give Apricots the benefit of a net or two if possible, for

covering with boughs is but a sorry makeshift, and unless one goes to a lot of trouble in providing uprights and crosspieces, a sudden and violent gale is apt, by bringing the branches into sharp contact with the trees, to damage the bloom as much as frost. We lost nearly all bloom that remained uncovered last year, except towards the top of the wall, where it was partially protected by the brick coping. If Plums are to be spring covered—and one is never sure of a crop unless this is done—it is a good plan to plant the best and most useful varieties as much as possible together. Early Prolific, a very useful Plum, a good type of Gage; Jefferson, Golden Drop, and Kirke's would certainly amply repay the little extra trouble and expense incurred through spring covering. The Pear is so valuable for dessert, that I should strongly advise it should receive prompt and effectual covering when there is the promise of plenty of fruit. This being the case at the present time, and our cordons only as yet reaching three parts of the way up the wall, I have, in order to economise our netting, fastened some stretches of board 3 inches by 1 inch to other pieces projecting from the wall just above the line of the top of the trees and standing out when finished some 4 inches from the same. By tacking the netting just above the board we thus get it to swing clear of the trees and save a considerable breadth of net which is not required so high as the coping when the upper portion of the wall is as yet unfurnished with trees. Dessert Cherries I always cover, they are a favourite fruit, and one consequently likes to make sure of a crop. In addition to the protection from frost provided by the netting it acts as an admirable shelter against the heavy storms of cold sleet we often get in the spring, and which prove disastrous to the tender bloom of the Cherry when this is quite exposed. If there is any American blight lurking about either on wall, bush, or pyramid trees it is a good plan to look over them before new growth begins. Many different mixtures are recommended for this pest, some composed of six or seven ingredients, but there is nothing simpler or more efficacious than paraffin, and I have known trees badly affected completely cured after the second application. Instances are quoted of the loss of trees through this same use of paraffin, but this arose probably from a careless use of the oil, working it in on old and young wood alike, and very likely soaking the buds; these although dormant would certainly not bear such treatment.

Claremont.

E. BURRELL.

Pear Bishop's Thumb.—We are not overstocked with Christmas Pears, and amongst others this Pear will be found to give satisfaction if always as good as with me, though it has the name of being only of second quality. No doubt it varies on different soils and is better in some seasons than in others, but I consider it one of the best, and can recommend it as profitable for a wall and sure to succeed where any Pear will grow. I have a tree covering the west end of a house against a public road. It is a certain cropper, although with a tendency to bear chiefly at the top or on the young growth. Most people in passing glance up to admire the crop, for in some seasons the Pears will hang over each other like thatch on a rick. This is not a tree that exhausts itself in bloom, which appears so thin that we imagine the crop must be light, but every flower seems to set. It is a long, but not a large Pear; still I have sold them by the dozen, the crop one year realising £3 wholesale. Bishop's Thumb is very hardy and a good keeper, and the tree ought to succeed well as a pyramid or standard, seeing that I have very satisfactory results from extended growth above the roof.—E. W. B.

A good early Plum—Czar.—The market is sometimes overstocked with Plums, but an early variety like the above, suitable for either cooking or dessert, will always be of value. The Czar is rather a new Plum, very hardy and prolific. It will withstand frost better than most kinds and comes in just after Rivers' Early Prolific, but is altogether

superior to that sort, being larger and more highly coloured. As a rule, the fruit grows too thick to come to full size. The large amount of saccharine matter contained in this fruit makes it more wholesome than many other well-known kinds and in great request for stewing and jam-making. The bush form suits it well. On young standards I have sometimes to tie the head together, or the small branches would collapse with the weight of fruit. The Czar is a strong grower, throwing up a straight stem for the standard and making a well-balanced, handsome tree. I am now syringing the Plum trees and bushes with liquid lime containing a little paraffin as an insecticide and a protection from the finches.—E. W. B. Holmer, Hereford.

STORING APPLES.

TO THE EDITOR OF THE GARDEN.

SIR,—I was very pleased, but not surprised with your verdict as to the superiority of our best English grown Apples as compared with foreign importations, for lately I have been testing all the imported Apples I could meet with, and am confirmed in my opinion that the best of them are far inferior to our best home-grown fruit, of which we now have so many late keeping sorts of excellent quality. Nearly all sorts of Apples are capable of being kept much longer than they are credited for in catalogue descriptions if they are gathered at the right time and properly stored. I quite agree with your remarks as to many of our best kinds being spoiled by storing in too dry and hot an atmosphere. I have what I consider an exceptionally good place for storing all kinds of fruit, viz., a tower with walls nearly 4 feet thick, which guards us against all extremes of temperature. All our Apples are left upon the trees as long as they will possibly hang, some sorts, especially Sturmer, Scarlet Nonpareil, Cornish Aromatic, &c., being kept out as late as the middle of November. I never trouble about their being wet or dry when stored, so long as they are handled carefully to prevent their being bruised. All our shelves are formed of slate stones, upon which the Apples are placed from 9 inches to 10 inches deep, each kind to itself, and never touched again till required for use, excluding all light and air as much as possible. Nine people out of ten keep their Apples on straw, which engenders mildew, and soon destroys the flavour of the best of fruit. I attribute the fine appearance of the samples I sent for your inspection to their having been allowed to hang upon the trees as late as possible, when the foliage being less dense gives the fruit a much better chance to colour and mature, and after storing keeping them as cool, close, and dark as possible. In this way I have been able to keep the grand old Blenheim as late as April, though its proper season is said to be from November to January.

There are thousands of acres of orchards in this country devoted to growing Apples for cider, which cannot possibly pay the most careful and skilful manager, for it takes nine to twelve imperial bushels to make a hogshead of cider worth from 18s. to 22s., thus leaving little if anything over 1s. 6d. per bushel for the Apples after deducting all the expenses of making, &c. Then there are thousands of trees which produce fruit only fit for cooking, and which will not keep beyond the month of October. This must be sold when the markets are glutted and fetch a price that barely pays for the labour of picking and marketing.

I believe that if our existing orchards were carefully managed, the right sorts of Apples grown, and properly stored, there would be little chance for imported Apples in the English mar-

kets, excepting perhaps Tasmanian ones, which though of inferior quality, coming in at the end of our season, will doubtless always find a ready sale. Many of our orchards after being planted are taken but little notice of beyond gathering the wretched produce, many of the sorts being worthless. At the present time many owners of orchards in this neighbourhood have not an Apple left, while all the shops have any amount of imported fruit for sale. I think this is a great disgrace to Englishmen, who have an easy remedy in their own hands. By heading back trees of worthless sorts and inserting from ten to sixty grafts of a really valuable sort upon each tree the loss of time and labour will be well repaid. W. SANGWIN.

Trelissick, Truro.

CHRYSANTHEMUMS.

STRIKING CHRYSANTHEMUM CUTTINGS.

THERE is, I think, no advantage gained in making a start with these plants before the present month, unless it be that the old stools take up room in our greenhouses which is wanted for other things. Early-struck plants are likely to show flower-buds in the spring months. This is not at all desirable in what may be called the large-bloom system, but, of course, it matters little if bush plants are to be grown. In the former case a free, uninterrupted growth from the beginning should be aimed at. Careful cultivators will make a start with clean pots, the smallest sizes being best for the purpose. Mix a compost of loam, leaf-mould and sand in equal parts for the cuttings, and place one firmly in each pot. In choosing the cuttings it is well to avoid those that grow up the stem of the old plant and also any that may be showing a flower-bud at the tip. Some few years ago not many growers, I imagine, thought of any other place to root the cuttings in than a cold frame, which position still, in most cases, gives the best results. In very severe weather, such as we are now passing through, there is a difficulty in giving them daylight; but it is bad indeed if we cannot let the frame be uncovered for just an hour or two in the middle of the day; 20° of frost and more may be prevented from damaging the young cuttings by covering with mats and straw. What I have noticed in cold frame-struck Chrysanthemums is that they seldom flag, but they must be constantly watched to prevent damp. A little air may be given at times, and if a decayed leaf be seen, be prompt in taking the same away from the rest. A quicker mode of rooting the cuttings is under handlights or lightly constructed frames in a cool house, and here damping may be avoided by occasionally wiping the condensed moisture from the glass. But it is not wise to start the Chrysanthemum plant on its season's work by tenderly striking in fire-heat. Traders, to keep pace with the demand, are oftentimes obliged to root young ones of the new varieties in a high temperature, hence it is so seldom we find out the true qualities of novelties the first year of trial. After the first watering when the cuttings are potted we must be guided entirely by the weather as to when it shall be repeated. In mild sunny times I would prefer sprinkling them overhead to prevent the leaves flagging to shading for the same purpose. But little air will be needed until the plants are rooted. Some kinds being much more free to emit roots than others, the for-

wardest should be taken from the rest and placed into another frame. They may here receive a plentiful supply of air and water and be brought on sturdily. Those, too, that have been rooted in the warmer temperature of a greenhouse should be gradually brought to a cold frame to prevent a spindly growth. A method of striking Chrysanthemum cuttings practised, and not without success, by some is to stand them on shelves or stages and take no notice of the leaves flagging. They appear withered for some time, but by ordinary watering when dry they prick up their heads and make first-rate progress. If exhibiting at shows be an object there are some notable kinds that it may be advisable to defer striking for yet another month. The naturally early ones, as Avalanche, W. H. Lincoln, Anna Hartshorn, Cesare Costa, and I have generally noticed such large-leaved kinds as E. Molyneux, Mrs. Wheeler, and Beauty of Castlewood make comparatively better plants from late cuttings. Again, some of the most esteemed varieties of American origin are very late in showing flower-buds. These, if struck in February or March, will produce very fine blooms if allowed to carry but one on the plant. Besides the better-known kinds, Mrs. F. Jameson and Mrs. E. W. Clarke, Lord Brooke, Harry May, Ruth Cleveland, Robert Flowerday may well be tried on this plan.

H. S.

Chrysanthemum Mrs. L. C. Madeira.—This, referred to in THE GARDEN, February 4, appears to be a capital sort for late flowering; the colour is a very rich orange-yellow, always a favourite; it is deeper in tint than Mrs. Norman Davis, long recognised as one of the best of the late sorts amongst the incurved section. Were it not that the flower of Mrs. L. C. Madeira is so much deeper in colour, it would be difficult to recognise it from that of Mabel Ward, as it has the petal of that now almost obsolete kind, and the peculiar quartering or rib so well known to cultivators of the incurved section.—E. M.

Chrysanthemum L. Canning.—This variety has been a failure from an exhibition point of view, but for late blooming it ranks as one of the best among the white kinds. I have at the present time (January 21) a capital lot of flowers of this and of the purest white, and most useful they are for the decoration of tall vases, as the plants have been so managed to have a sufficient length of stem which renders them so much more useful than they are when the stems are but a few inches instead of at least 1 foot. Those persons who have not given this Japanese kind a trial should lose no time in doing so.—E. M.

A wall of Chrysanthemums.—The culture of the Chrysanthemum on walls is not much considered, judging by the bare spaces that one finds in gardens. Last November we saw in quite a suburban garden, shut in by surrounding houses, a wall covered with Chrysanthemums, not so fine, of course, as in the purer air of the country, but very pleasant to look at in spite of their smoky position. The varieties were not named, but, as far as one could judge, they comprised Jules Lagravère, Jardin des Plantes, Refulgence, and Mrs. G. Rundle, the bottom part of the wall being filled up with pompon kinds. It would be well if more would follow out this plan of growing Chrysanthemums on walls. There is much beauty to be got from thus growing them if the varieties selected are suitable. Good strong plants were put in early in the spring, the soil being well prepared so as to give the Chrysanthemums every chance of producing a creditable display of flowers, and the branches were well trained out, being placed in a slanting direction. Almost every inch of the wall was covered with foliage, occasional syringings being given, also plenty of water at the roots, varied with liquid manure to promote vigorous growth. This is of importance, the syringing in particular, especially

in a hot, dry garden, where the soil quickly gets into a powdery condition. In the autumn disbud, that is if fairly large flowers are desired, as this is the only way to get them of fair dimensions, but of course in the case of the pompons this is not necessary to the same extent. It would be well to have a coping of some kind to protect the flowers from the rains and fogs of November, but in the instance above referred to this was not provided. The result was that, although only just on the verge of full beauty, the flowers were becoming soiled.

GROWING CHRYSANTHEMUMS FOR CUT BLOOMS AND FOR CONSERVATORY DECORATION.

WHILE thanking your correspondents for their information on the subject of Chrysanthemums for market (p. 31) in reply to my query (p. 14), I wish to ask for a short cultural note on growing these plants purely for cut blooms and for conservatory decoration. Nearly every treatise on this plant is devoted to growing them for the sake of one large single bloom for exhibition, or for elaborately trained plants for show. I am therefore in doubt as regards pinching, topping, taking the bud, timing the bloom, and so on. I ask, are all the performances required in the case of plants to be grown purely for the above purposes?—A. E.

Assuming "A. E." has made a start with some such collection as advised (p. 31), the young plants should either be rooting or fairly established in small pots. Perhaps it will be as well to notice first the early-flowering kinds—Mme. Desgrange and its sports, Mrs. Burrell, G. Wermig, and Mrs. Hawkins. These being among the most tender of Chrysanthemums in the small stages, therefore require not only a little more warmth, but a soil composed of lighter material than the bulk. Place these on a greenhouse shelf near the glass till well on in March, when they may go with the rest in cold frames. In giving them the first shift into 5-inch pots mix a compost of equal parts loam and leaf-mould with a good sprinkling of sand and broken charcoal or mortar rubbish. The last, of course, is the cheapest, and answers well the purpose of keeping the soil porous and sweet. The final repotting should take place before the plants become root-bound, which will be quite early in May. This time use pots of 8-inch diameter and the leaf mould in a smaller proportion. The Desgranges are rather impatient of manure, and it need only be used in a liquid state, then always weak later on when the bloom buds are swelling. If the plants do not of themselves start branching, they may have each tip taken out when 9 inches or so in height, and being of a bushy nature this probably will be the only topping needed. They generally throw out from half-a-dozen to nine shoots, which are ample to form a compact bush, and if all the buds are left, a fine head of bloom results. They may be disbudded at the will of the cultivator, who has only to take away all but the centre flower-bud on each shoot to get larger blooms. The plants should be stood in the open after the end of April, but again placed under glass to flower. They will bloom outside in September, but it is obvious that the weather may damage them, nor do the colours come so pure as when under glass, lightly shaded during the sunny part of the day.

If not already in frames without fire-heat, place the rest of the young plants in structures where they may receive plenty of air on all favourable days. Here they will become sturdy. Give them the first shift into larger pots before they get in any way stunted through want of root-room, and it is well to bear this in mind when thinking of subsequent shifts. A suitable soil is that where good loam forms the major portion, and instead of the leaf-mould use rotted manure, sand and the mortar rubbish. A 6-inch potful of bone-meal to the bushel is of great assistance to the plants and gives the foliage a healthy tone. Pot firmly. The soil can scarcely be rammed into the pots too tightly at the final potting. When 6 inches high, take out the tip of each plant and again top

each of the shoots when later on they get the same length. This should be enough stopping to induce most varieties to form a bush of considerable size with from half-a-dozen to a dozen leads. These, again, then the crown bud shows itself (which, in the case of plants for a quantity of bloom, should be allowed to go unheeded), should each give three or four more; thus we get a plant of excellent dimensions.

For the pompon varieties an 8-inch pot is large enough for the flowering size; the rest may have those of 9-inch diameter. If it is thought desirable to go beyond this last size, place two plants in each pot. Stand the pots well apart in their summer quarters. Tie the principal shoots to sticks, about a yard long, before they get high enough to be broken by the wind, and never neglect watering. Till well on in the season the plants will not require anything in the way of manure; a dose of soot water once a week after they are well established in the large pots is sufficient. But from the time flower-buds show, stimulating manures become a necessity, and in a weak state may be given at almost every watering. I would not advise the labour-saving practice of plunging the pots in ashes, fibre or other material, for the roots are bound to find their way into such and produce a soft growth, besides resulting in a check to the plants when they become severed. There need not be any bother about taking the bud or timing the bloom. Choose the varieties named to flower at a particular period, do not pinch back the shoots after June, because time should be given for matured growth; then let them bloom naturally. Place the plants under cover quite by the end of September, and let abundance of air pass among them. The necessary checks to green-fly, mildew, and so on need hardly be referred to here, for perfect cleanliness is one of the chief things, yet one of the simplest in the culture of any plant.

H. S.

METHODS OF GROWING CHRYSANTHEMUMS.

Now is the time to decide on what method the plants are to be cultivated for the next flowering season. The most popular style, whether for home use or exhibition, is that which produces large blooms. Although I am in favour of the system which develops a variety thoroughly in every way as to size, form, and colour, I am not an advocate of those blooms which have nothing but mere number of inches in diameter to recommend them. Such blooms do much to disparage the method of large bloom cultivation. When judging at Chrysanthemum shows I invariably attach great weight to those blooms that are remarkable rather for the depth of the blooms than the number of inches in diameter.

Raisers of new Chrysanthemums are turning their attention to dwarf growing sorts of the Avalanche and Mrs. Falconer Jameson style of growth in preference to those of which Mme. C. Audiguier is an example. The finest blooms of the latter ever seen were from plants 12 feet high. Fortunately, this variety is now fast becoming obsolete, owing mainly to the extreme height which the plants reach. It is not possible to obtain blooms of this variety of high-class quality unless the plants are allowed to assume their natural growth. Although some growers manage to obtain very good blooms of certain varieties by topping them at different stages, the most general plan is to allow the plants to grow uninterruptedly from the cutting stage until they make their first natural break, which is caused by the formation of a flower-bud at the point of the shoot. The time of the first break varies according to variety and circumstances, sometimes taking place during April or even in May, and in some cases even later than that. While some varieties will make the first break at 1 foot high, others will grow 4 feet before it takes place. When the plants are allowed some freedom, all their wants are met at the proper time, the growth being then properly

ripened. Badly ripened wood will produce blooms large enough in diameter, but they lack the most essential points—depth and solidity—especially in the incurved section. Some persons say that plants raised from cuttings inserted in February and March will give exhibition blooms, but they have not as yet produced them. The reason is not far to seek, want of time to perfect the growth being the cause of failure. Some growers restrict the number of blooms on a plant to two and some even to one, but this, I think, is quite unnecessary. I have seen others attempt to produce six blooms upon one plant up to exhibition form, but that also failed. For many years three blooms have been considered the orthodox number, and although I have tried more and less, and seen others attempt the same, I have long since considered that number sufficient. When the natural break takes place, restrict the number of shoots to three, allowing one flower to each. I know some growers treat their plants quite differently, topping them at 8 inches high, allowing three shoots instead of one to grow from near the base. From the growths resulting from this topping the blooms are taken, one from each shoot. I have not seen the advocates of this principle take a high position in the exhibition room.

Topping the plants at stated heights with a view mainly to regulate the date of certain buds forming, so as to have the blooms in perfection at a stated time, is attended with so many risks, that it is not likely to be universally adopted. The weather is so uncertain as to preclude the chances of success becoming general even in the Japanese section, and certainly never with incurved varieties. Some sorts in the former section bloom too early for exhibitions at the middle of November when cultivated on the ordinary method. By a judicious method of topping the shoots when a few inches high, the blooms can be retarded fully a fortnight, but in no sense are the blooms of the same quality as when obtained by the usual method. Mrs. Falconer Jameson affords an instance of this. As grown in the ordinary way, the blooms are too early for the date named, but the first blooms are considerably finer in every respect than from plants that have been topped. I am acquainted with a large grower who thought he could improve his previous efforts in the Japanese section by topping the plants. For instance, he operated upon all his stock of Stanstead White, with the result that when November came round he had not a presentable flower of this uncommonly fine white. The somewhat cold and wet August militated against the perfect development of the plants and blooms. Many other instances might be quoted in support of the fallacy of this system.

The next most popular method of culture is that known as the "bush" plan. To small cultivators who wish for a good home show and a quantity for cutting also, this method can be recommended. The plants are topped when 4 inches high to produce additional shoots to form a "bush." Cutting down the plants is a system very much in vogue by exhibitors of groups as well as for conservatory decoration, as it is seldom that naturally grown plants can be tastefully arranged. By cutting down, such varieties as Avalanche can be had 18 inches high from the top of the pot, and those of taller growth may be reduced in proportion, all giving fairly large blooms, but of course not equal to those obtained in the usual way. The plants should be raised from cuttings in the usual way and grown on as though intended for giving large blooms. About the middle of May they should be cut down to within a certain height of the soil, according to the variety. For instance, the dwarf-growing varieties should be cut down to within about 4 inches of the soil, others to 6 inches, 8 inches and 12 inches. The shoots resulting from this will form the future flowering shoots.

E. MOLYNEUX.

The English Flower Garden.—Design, Plans and Plants. Third edition, revised, with many new illustrations. London: J. Murray, and through all booksellers.

FLOWER GARDEN.

LYME GRASS.

(ELYMUS ARENARIUS.)

THIS is a British maritime Grass well worthy of garden cultivation. It is a valuable plant for clothing a bank of loose soil or even sand, as its roots run through, forming a perfect mat and effectually holding in position the soil of the bank. If planted in deep good soil upon the shrubbery margin it grows more vigorously, attaining to 4 feet in height. Its sole beauty is its leaves, which are of a glaucous or blue-green colour, and as the flowers are not very showy they might be removed to preserve the plant in its beauty of leafage for as long a time as possible. It is easily increased by division, and rapidly grows into a large specimen. In a wild

hosa is a medium-growing climber whose clusters of deep green, divided leaves are very pretty, especially during the winter, while the flowers are freely borne for a month or two. They are smaller than those of most of the others, being less than an inch in diameter, bell-shaped, and of a greenish white tint, the exterior of the bloom being clothed with a kind of silky down. It is a native of the south of Europe, and, according to Loudon, was introduced therefrom in 1596; but it is at the present day one of the most uncommon kinds, and numerous lists may be searched for it in vain.—H. P.

THE ROCK GARDEN.

SELECTING THE STONE.

LARGE sums of money are often spent on, what most people call, ornamental rockery stone. The owners of quarries, as a rule, reserve carefully all stones obtained from such

hues show to still better advantage the bright flowers springing up from their crevices? For the interior of caves and similar places, the shining crystals of this so-called rockery stone may sometimes be admissible, but the unfortunately too general practice of using them for outdoor rock gardens cannot be too strongly condemned. Moreover, the brittle crystals when exposed to the weather soon crumble into dust, and the ornament (!) so dearly paid for vanishes from view. Instead of incurring heavy expense for stones from a distance, it would in most cases be far better to use those indigenous to the locality unless they should be of an unsuitable nature.

In order to be able to build good rocks we must study Nature, and, at least a little, geological knowledge is indispensable. Geologists divide all rocks into two great classes, viz., stratified or sedimentary rocks, and unstratified or igneous rocks. The latter are again divided into plutonic rocks, which have been upheaved by heat from the interior of the earth, like granite or porphyry, and volcanic rocks, like trap, basalt, or greenstone, which, it is generally assumed, have been produced by volcanic eruptions during bygone ages. The stratified rocks comprise all the different varieties of our slates, limestone, flint, sandstone, oolite, chalk, &c. All have been deposited originally as sediment from water, and are, therefore, always found in distinct parallel layers or strata of varying thickness, but always in the same order of succession, though by subsequent upheavals the plutonic or volcanic rocks have in many places forced their way through the layers and tilted them. The stratified rocks also include the so-called metamorphic rocks, which have become crystallised in consequence of having been in contact with plutonic rocks in a state of fusion.

If our rock garden is to resemble Nature, it must be of the utmost importance to know which class of stone is to be used for its formation. If the available rocks are of the unstratified class it would be absurd to arrange them in the same manner as stratified rocks, perhaps showing distinct strata, where in Nature none would occur. Generally speaking, granites and other igneous rocks are in Nature found scattered in the wildest confusion, as, for instance, on Dartmoor, Lidford Gorge, and other places. They are, therefore, more suitable for the formation of bold masses of rock in a wild garden or hardy fernery than for an alpine garden where the construction of narrow crevices would be required.

By far the greater number of mountain plants are indigenous to limestone, and if the colour, size and shape are suitable, this material should, generally speaking, be selected in preference to any other. For the few plants which object to limestone, pieces of granite or other rock may be mixed with the soil without interfering with the general design. If, on the other hand, limestone of a suitable kind should be difficult to obtain while good pieces of weather-beaten granite, oolite, sandstone, or any other suitable rock are plentiful, it would be folly to reject the material close at hand. In such localities the rock garden might be constructed with the best stones obtainable in the neighbourhood, adding old mortar, chalk, or even the inferior quality of limestone used for ordinary building, road-making, &c., for such plants as may require it.

THE COLOUR AND SHAPE

of stones used for the construction of crevices underground can be of no consequence, but I should like to give a few general hints for the



The Sea Lyme Grass (*Elymus arenarius*). Engraved for THE GARDEN from a photograph sent by Mrs. Martin, Bournbrook Hall, Birmingham.

state it is most abundant upon our northern shores. There is also an American representative of this family, *E. condensatus*, which is very ornamental and must be included in a selection of the best Grasses. It is very vigorous, of tufted habit, dense and erect, growing to a height of 8 feet. The leaves are long, arching, and graceful, and the shoots are terminated by a flower-spike 6 inches long and greatly resembling an ear of wheat.

Clematis cirrhosa.—This species of *Clematis* is remarkable from the fact that it often flowers thus early in the year, that is, if the plant has the protection of a south wall. It is not by any means showy, yet at the same time it is a very interesting species, and with the paucity of outdoor flowers, it is far more attractive than would be the case if the blossoms expanded about the same time as many of those of its showy relatives. Another feature is its evergreen character, as nearly all the species of *Clematis* are deciduous. *C. cir-*

rhosa is a medium-growing climber whose clusters of deep green, divided leaves are very pretty, especially during the winter, while the flowers are freely borne for a month or two. They are smaller than those of most of the others, being less than an inch in diameter, bell-shaped, and of a greenish white tint, the exterior of the bloom being clothed with a kind of silky down. It is a native of the south of Europe, and, according to Loudon, was introduced therefrom in 1596; but it is at the present day one of the most uncommon kinds, and numerous lists may be searched for it in vain.—H. P.

parts of their quarries as contain veins of quartz or other glass-like crystals, mostly of a glaring light colour. Sometimes the whole stones are almost white. They are generally broken into pieces convenient for a man to lift easily, and are, therefore, very even in size. I know many cases where such stones as these were obtained from a great distance, and therefore at a great cost. They may by some be considered pretty to look at, and might be a suitable feature in a collection of mineralogical specimens, but for the purpose of our alpine gardens they should, in my opinion, never be used except crushed into small fragments and mixed with the soil. The beauty of a rock garden, whether large or small, should consist in its being true to Nature. But where in Nature do we see glaring crystals in exposed rocks and in connection with plants? Do we not, on the contrary, admire most the rough, weather-beaten surface of boulders which have stood the test of untold ages, and whose dark

selection of the main body of stones which are to form the visible part of the rock garden.

Stones of a glaring white colour, no matter whether flint, spar or limestone, should, I think, be avoided altogether. Not only do they afford little or no contrast to white or light-coloured flowers and are cold and ineffective in appearance, but they also repel and reflect the rays of sunshine in a manner injurious to some of the tender kinds of plants. Dull red, dark grey, brown and yellowish brown are the colours which form perhaps the most pleasing contrast with the verdure and flowers of plants. Sometimes stones having, at least on one side, a rough, weather-beaten surface, perhaps even covered with Moss or Lichens, are easily obtainable, and if so should in all cases be preferred to fresh broken material, as they will impart to the rock garden a character of natural antiquity, otherwise possible only by long years of exposure. The shape of the most eligible stones depends entirely on the nature of the material to be used. If the rocks are of the unstratified kind, their manipulation in the alpine garden must be an entirely different one from that of the sedimentary class. It would be well in this case to have as much variety of shape and size as possible, ranging, say, from half a cwt. to 10 or 12 cwt. Stones heavier than this are rather unwieldy, and should only be used in rock gardens on a large scale, where special arrangements for lifting heavy weights would be required.

If, however, the stones available belong to the stratified rocks, it should be borne in mind that we have to imitate—to some extent at least—the natural stratification in order to give our alpine garden that appearance of reality so pleasing to the eye. In choosing the stone, therefore, as many flat and thin pieces as possible should be selected. These will be found of the utmost importance for the imitation of natural strata, and are also most valuable for the formation of narrow crevices for choice alpine, rocky steps, &c. Even the thinnest slabs will be found useful for this purpose, and whilst unstratified rocks of a size less than about half a hundredweight would be of little use for the main work (excepting the very small pieces required for covering the surface of the soil around alpine), the sedimentary stone, if chosen for rock building, might vary in weight from only a few pounds to say 15 cwt., unless the work is to be of a very extensive character, including caves, waterfalls, &c., which would necessitate some of the stones being still larger. It must not be understood that I would recommend thin or flat pieces exclusively; on the contrary, let there be as much variety of shape as possible, but the flat stones should predominate.

In concluding my remarks about the selection of the stones, I would draw attention to the fact that some kinds of very porous rocks are apt to crumble to pieces by the action of rain and severe frost. It should, therefore, always be ascertained whether the stones selected will stand exposure to all weathers. For a rock garden under glass this may be immaterial, but for a rock garden out of doors it is of the utmost importance. It would also be advisable not to use many different varieties of stone in the same rock garden. One kind is sufficient, unless, for instance, good limestone and good granite can be used, and are separated into different groups. Where other kinds are required for the benefit of the plants, they should, as a rule, be used underground, as already stated. Stones having a surface partly covered by Moss or Lichens require to be handled with extra care throughout the work

to prevent the destruction of that natural ornament, and if they are very large they should be lifted by special gear. As the best contrivance (barring large cranes) for hoisting all large stones I would recommend a tripod made of three extra strong poles about 15 feet long, and secured at the top by a strong movable iron bolt. When double blocks and pulleys, working by means of an endless chain, are attached to this tripod, stones from 1 ton to 2 tons in weight can be lifted quite easily and without injury. For turning over stones of extra size or for dragging them into the required position, an iron winch (generally known by the popular name of "crabb") will be found of great service; but for most rock gardens the method of moving stones by means of planks and rollers, as described in my former notes under the heading of "preparatory work," should be quite sufficient, and such extra appliances should never be required for work on a small scale.

F. W. MEYER.

Ecce.

(To be continued.)

FLOWERS IN IRELAND.

WITH a mean temperature of about 45° Fahr. for the last eight or nine days and no great severity of weather before that, the garden here is showing a most alarming vitality. The winter so far has been singularly free from cutting winds, which may be the cause; but a number of plants appear to be still seeking for that lost summer of 1892. Some genuine spring flowers testify to the mild season. *Rhododendron præcox* and *Eranthis hymalis* have been in blossom for a week. *Chionodoxa* is just opening. The following plants are in blossom or nearly so:—

<i>Cytisus Everestianus</i>	Snowdrops of sorts
<i>racemosus</i>	<i>Aubrietias</i> (several)
<i>Hemmelis Zaccariniana</i>	<i>Veronica Andersoni</i>
<i>arborescens</i>	<i>decausata</i> and others
<i>Pyrus japonica</i> (just opening)	<i>Lithospermum prostratum</i>
<i>Vincaminor</i>	<i>Campanula fragilis</i>
<i>Primulas</i> , many, but no alpine	<i>Schizostylis coccinea</i>
<i>Saxifraga Burseriana</i> (just opening)	<i>Erica mediet-ranica cænea</i>
<i>coriifolia</i> (?), do.	<i>Helianthemum</i> (white)
<i>oppositifolia</i> (pyrenæica), do.	<i>Cyclamen coum</i>
<i>o. maxima</i> , do.	<i>Primula japonica</i>
<i>o. St. Anne</i> , do.	<i>Hellebores</i>
	<i>Bellis sylvestris</i>

Aponogeton distachyon is just out of blossom. It has been continuously in flower in a small pond from Easter till the middle of January. It increases itself very freely by seed. I know no other plant in or out of cultivation with so long a flowering season. But the alarming feature I alluded to is the early growth of all bulbs. All sorts of *Daffodils*, *Lent Lilies*, *Polyanthus Narcissi*, &c., have been above ground, or coming up, since before Christmas, and now, I think, all are showing their leaf-tops. *Maximus* (true) is 6 inches or more in leaf, and so is *Tazetta*. Spanish and English *Irises* are both sprouting, the former 6 inches to 8 inches high. *Pæony* buds are above ground. *Tulips* (*sylvestris* and *Gesneriana*) are well up. Two sorts of *Eremurus* are bursting their great fat buds. *Oncocyclis Irises* (of several sorts) are in leaf. *Gladium luteum* is growing strong, and *Ornithogalum umbellatum* is doing likewise. *St. Bruno's* and *St. Eno's Lilies* are not behind. *Ixias*, *Sparaxis* and *Babianas* are all in growth.

Again, a number of delicate species are more evergreen this winter than is their wont. *Mau-randia Barclayana* is still leafy, and there were a few blossoms at Christmas. This year it ripened no seed; last year I could have supplied a quantity. It is evident it never completed its season's growth. *Romneya Coulteri*, *Agapanthus umbellatus*, *maximus*, *intermedius*, *Libertias* (two or three),

Hypericum olympicum, *triflorum* (against a wall), *empetrifolium* are shooting and green. *Woodwardia radicans* has not withered. *Todea superba* is unusually fresh looking. *Lilies* are all above ground. Again such shrubs as *Acacia armata*, *Senecio Fosteri*, *Eupatorium riparium*, several *Ceanothuses*, *Clethra arborea*, *Aster argyrophyllus*, *Margyri-carpus setosus* look as hearty as they did at any time in the summer.

I noticed a remark in a correspondent's letter the other day that it was better to plant out young and let things be acclimatised. I find exactly the opposite to be the case. Plant out old hardened specimens and they take a lot of killing, no matter how delicate naturally. I have a large collection of *Nepau* and *Sikkim Rhododendrons*; this season they seem to be filling out their flower-buds fast. The only one I cannot succeed with is *Nuttalli*. It does not die, but it does not do well. The first *Rhododendrons* to blossom here will be *ciliatum* and *Countess of Haddington*; *glaucum* will run them close. The leaves of *eximium* are magnificent. *Arbutus Andrachne* and *Andromeda floribunda* are in beautiful flower now. A very charming *Daphne* that I got from Mr. Smith, of Newry, as *Daphne "Dauphne,"* evidently a form of *indica* (?), is very content in the open and about to bloom; it is deliciously sweet. I was tempted to write this little report by accounts of the severity of the weather across the Channel. English people do not half realise the merits of our Irish climate, and I wish these remarks may tempt even one visitor to come and see for himself. Both kinds of *Furze* are in bloom in the county here.

H. C. HART.

Carrablagh, Lough Swilly.

FLOWER GARDEN NOTES.

SOME time elapsed after the commencement of the thaw before one could get on the ground, owing to the depth the frost had penetrated. On the majority of soils, however, the surface is now fairly workable, and flower garden work can be resumed in earnest. Besides digging where necessary, mulching over borders, making up gaps in spring-flowering plants, and a general cleaning up of beds, any planting possible may be seen to at once. The system of utilising hardy plants to a great extent for a summer and autumn display is now general, and such planting can be extended or alterations made where existing arrangements were not quite satisfactory. We have a stock of *Lobelia cardinalis* in boxes that will shortly be transferred to beds that were partially filled with Pinks. The idea is to plant the *Lobelia* in little clumps about 1 foot apart, leaving the Pinks to fill the remainder of the beds. A large batch of new *Violas* will go in on a wide border already thinly planted with double Peach-leaved *Campanula*, and as the last-named is over rather early in the season, I shall reserve an occasional space for a good-sized plant of *Eucalyptus*. We have been lifting and replanting a large bed of White Swan *Viola* that acts as a carpet to some nice clumps of a rosy pink *Pyrethrum*. This is generally a very attractive bed from quite early in the season, as the foliage of the *Pyrethrum*, even when the flower is gone, makes a pleasing contrast to the mass of white. I remember finding *Violas* of great service in a lot of small straight beds which were not easily planted. They were a series of beds about twenty in number, each 8 feet by 6 feet, Box encircled, with about a foot of tiny gravel path between each, and the whole running along by the side of a broad walk. Carpet bedding with such a number was out of the question, strong growing plants of any description out of character, and I found, as I have said, the most satisfactory results from *Violas*. Free-flowering varieties of dwarf compact habit were selected, each bed had its own colour, and the flat surface was broken up by a few plants of *Dracæna indivisa* and *D. gracilis*, some irregular pyramids of *Fuchsia Sunray* and one *Humea elegans* in the centre of each bed. The recollection of the difficulty here experienced in finding suitable plants reminds one that among the points to be specially considered

in all flower garden operations is the selection of suitable plants for different situations. Thus whilst things of dwarf compact habit are so suitable for beds above named, they are decidedly out of character in situations where the object is to secure a telling effect from a considerable distance, and there is no greater mistake made than in crowding in a number of small plants of different shades, however bright the individual colours may be, in beds or borders lying, for instance, at the top of slopes of considerable height, having the principal walk at the foot of such slopes, and from whence the chief view of any operations at the summit is to be obtained. Nothing is better for such positions than simple and yet bold planting in a mass, and if permanent clumps of bold plants already exist, the ground about them can be filled in with something that will present in the distance the idea of a nicely contrasting carpet. Thus *Fuchsia gracilis* may be surrounded with *Chrysanthemum* *Mme. Desgrange*, *Aster Amellus*, *A. bessabarius* or *A. acris*. The double perennial Sunflower may do duty as dot plants for bold grouping of *Aster ericoides*, and *Hydrangea paniculata grandiflora* encompass single plants of the new bronze foliaged Maple (*Acer p. atro-purpureum*). The above will serve as examples in which bold perennials can be utilised; plenty of similar combinations will doubtless suggest themselves. If such situations are exclusively "summer-planted," a few useful things that may be mentioned are free-flowering Dahlias of the Cactus and bouquet type, Marguerites (both white and yellow), large specimen Fuchsias, and the white-flowering Tobacco. A very easy filling-up that I once adopted, and which was very showy all through the season, was effected by inserting rounds of Pea sticks at wide intervals, confining them at the top as one does for Sweet Peas and sowing Canary Creeper to cover the sticks, all intervening space being afterwards planted with annual *Chrysanthemum Sultan*.

Spring-flowering stuff seems to have wintered well; there are hardly any gaps, and looking through the Polyanthus beds the other day I noticed they were slightly on the move. A large bed that will be attractive presently is planted with a dark strain of this favourite spring flower, with small patches of Star Daffodil John Bull intervening. Very bright beds are made by alternating a primrose Polyanthus and scarlet Tulips. There is not a single miss in the beds of border Carnations—grand testimony, if more were needed, to the unmistakable hardness of these flowers. I should like, by the way, to enter a protest against the name given to a new border Carnation in a catalogue received the other day. "New dwarf yellow self," it reads, "Comtesse de Paris." Surely the compiler of the catalogue must be aware that one of the very best border Carnations already in commerce bears the same name in, it is true, a more Anglicised form. Anyhow, I think the new introduction should be re-named. E. BURRELL.

Claremont.

Passiflora Constance Elliott.—This plant is not quite hardy, yet in a sheltered position it will stand most winters. In unusually severe weather some protection should be given, especially round the roots. We had one trained round the stone pillar of a porch. This was killed by the severe frost two winters back. Last spring I replaced it with another, and I was agreeably surprised to see the pillar covered in summer, the growth the first season being some 12 feet, and which flowered freely.—E. W. B.

Begonia Worthiana.—Two and three-year-old tubers of this fine bedding or pot Begonia will throw up shortly numerous stout shoots. These taken off when 3 inches in height and inserted into sandy soil in heat very quickly root and so produce fine plants during the summer. If tubers are specially held over in a cool, dry place as late as possible, then be started and propagated, plants can thus be obtained which will make admirable subjects for flowering in gentle warmth till Christmas. There seems to be no indeed why

they may not be induced to flower all through the winter. The considerable employment of this beautiful Begonia at Hampton Court Palace and other places of popular resort has created for it a great demand, and whether employed for bedding or for pot culture it is equally attractive. Plants from cuttings are used the first season for edgings. Then the tubers the second year are not propagated from, but allowed to carry all their shoots, making very fine plants; and then the third season they are used for giving stock for cuttings.—A. D.

Lathyrus splendens.—May I ask your correspondent "D. K.," who writes so exhaustively on Everlasting Peas (p. 88), whether *Lathyrus splendens*, which about a dozen years ago attracted a certain amount of attention (and was then described as a very beautiful member of the family from the mountains of California), has proved to be of any value, for I do not see it mentioned in his admirable article? It is, however, described with other members of the genus in the "Dictionary of Gardening."—H. P.

THE BOG GARDEN.

INTERESTING and practical notes were contributed by Mr. J. Wood to THE GARDEN, Feb. 4 (p. 79), and those who have bog gardens would do well to read them carefully. A bog garden is a delightful feature, and the number of moisture-loving plants that can be grown in a comparatively small space is great, whilst by the side of a small brook or stream a host of plants thrive to perfection. In the bog garden at Cambridge, or in the High Beech nurseries of Messrs. Paul and Son, there is much to be seen in the early summer months especially, and even in comparatively small places a spot can be reserved for the Calthas, hardy Orchids, &c., that need a perpetually damp situation. *Cypripedium spectabile* I have never seen better than in a recess in the rock garden, where the Trilliums and the Primulas delight to grow. *Orchis foliosa* makes a splendid mass under such conditions. The Calthas are a fine group and must have a boggy soil to succeed well. There are now many kinds, both double and single, brilliant masses of yellow in spring, and the forms of *C. monstrosa* bear flowers each like a little rosette, whilst in *C. leptosepala* they are of a rich orange shade. The Cardinal Flowers make a picture of colour in the bog garden, *Lobelia fulgens* Queen Victoria in particular. I have seen this splendid plant make almost double the growth as in the ordinary border simply through the moist peaty soil. The size of its rich crimson flowers is remarkable. The Huntsman's Horn (*Sarracenia purpurea*) is quite at home in such situations, and the Primulas flower with great freedom. *P. rosea* in particular, but one may have many types, as *P. japonica* and *P. farinosa*. Our native bog plants, as *Panassia*, *Drosera*, and *Pinguicula*, could be grown, and they require little attention. There are many spots in gardens that could be converted into a bog garden, and the plants grown therein would give much pleasure. A brookside may be made, with even a small selection of plants, bright with colour, and by the margin of a lake colonies of various things can be formed. *P. japonica* is a bold flower for such a spot, and when well established, seedlings spring up in great numbers, so that it becomes naturalised. By the lake in Livermere Park, in Suffolk, this fine Primrose grows with great vigour in the more shady spots. The stems rise over 2 feet in height, and the flowers, arranged in tiers, appear for many weeks. One gets a great variety from white to deepest crimson. A very pretty kind has white flowers with a buff salmon eye, and the leafage of all the forms of this Primula is robust. Seen from the opposite side of the bank a large group is very effective. But one need not be tied down to a few plants only. By the side of water or in the bog garden the Japanese Irises, *I. Kämpferi*, *Spiræa palmata*, &c., may have a place. *S. palmata* is never seen to better advantage than when growing in boggy soil, the growth made being very

robust, and the mass of crimson flower-heads lights up the garden with colour. This interesting phase of English gardening is not taken sufficient account of, but from such a feature one may get much pleasure. E.

Varieties of Iris stylosa.—This charming winter-flowering Iris varies much in colour, and some of the varieties have received distinctive names. One of the best known forms is alba, in which the flowers are white or tinted with lilac. It is a delicately beautiful flower, just as fragrant as the type, and in other respects similar. Then there is a kind named lilacina, the flowers lilac, and another called marginata, in which the falls and standards are rich lilac, set off by a paler shade of the same colour. Speciosa has deep blue flowers, and there are variations from the type, but they differ merely in degree. An Iris fancier would covet them, but they are not sufficiently important for a place in ordinary gardens. This variability in the colour of *I. stylosa* increases its interest. The best position for the plant is a thoroughly well-drained border in a warm sheltered spot facing south preferably. A rich soil is unnecessary, and it should be kept dry in the summer months. Sunny, warm nooks on the rockery may also be chosen for it, and the time to plant is the autumn, affording some protection until the roots have got well established. *I. stylosa*, by reason of the delicate beauty of its fragrant flowers, is very charming in pots, and if potted in the early autumn, the bulbs will bloom well.

The Winter Aconite.—This seems almost too common a plant to write of, but at this season, when its charming little yellow flowers in their collar of green leaves appear above the surface of the ground, it is delightful. Although very easily grown, one sees comparatively little of it in gardens. We have been lately in a few places, but, save for a single root here and there, the Winter Aconite was unrepresented. Some years ago we remember seeing a fine garden in early February where the Eranthis was planted freely in the half-wild spots, colouring the ground beneath deciduous trees with its yellow flowers, and good clumps of it on the rockery, in the border, or a sprinkling of roots on the Grass make a pleasing winter picture.

Zinnias.—I think those who have grown the superb varieties of double Zinnias now so abundant will agree with me that it is well to have the plants as strong and forward as they well can be so soon as it is safe to commit them to the open ground. It will not be too early to sow seed of double Zinnias next month in gentle warmth. Great importance is attached to keeping the seedlings near the glass and where they can get ample light. To have them weak or drawn is to do them infinite harm. If seed be sown in pans and placed near the glass the seedlings will be sturdy and dwarf. When some 2 inches in height they may be pricked off thinly into other pans or shallow boxes, and then a month later go from these into a frame, where they may become 6 inches in height and be very strong before being transplanted into the open ground. It is not every grower who cares to take so much pains, but when the soil in which Zinnias are planted is well prepared and manured, the result is fine plants and flowers far beyond what come from very ordinary treatment. The double Zinnia is such a beautiful flower and gives some colours that hardly anything else furnishes, so brilliant and beautiful are they, that special good cultivation is amply repaid.—A. D.

Dicentra spectabilis.—Mr. Wood's note respecting the frequent cutting down of the early growth of this by frost induces me to say that at Bedford, where I grew a quantity of large roots, producing during the season very fine clumps of foliage and bloom, I always planted beneath the overhanging boughs of spreading trees, and never found the shoots injured by late spring frosts. This *Dicentra* is peculiarly fitted for wild garden planting, for it lives without replanting for several

years, and only when the plants are strong is its real beauty seen. Still further, no plants show the same noble growth and very long flowering endurance that well-established roots do. The early growths are usually quite safe if the plants have shelter on the north and east, but with overhanging branches of trees I have found the shoots unharmed in any aspect. It is one of the most beautiful of border plants, but exposed is liable to the injury referred to. Even in such cases a large basket or a light framework covered with canvas turned over the plants at night until danger is past will make all safe from injury.—A. D.

The Huntsman's Horn for colour.—We have visited a few gardens and nurseries during the winter, and amongst hardy things the common *Sarracenia purpurea* is conspicuous for the rich crimson colouring of its curious leaves, fashioned in the shape of a horn. A large clump of this in moist peaty soil on the rockery or in the bog garden is a bright feature in the winter season. One must have a good mass of it to get effect from its crimson foliage, and if in a peaty boggy soil, not too wet, it will grow away with vigour, forming a charming mass with its richly-coloured, horn-shaped pitchers.

STOVE AND GREENHOUSE.

TREE OR PERPETUAL-FLOWERING CARNATIONS.

I was much interested in the article by Mr. Douglas which appeared in *THE GARDEN*, February 4, respecting these useful winter-flowering plants. Few, however, have the same conveniences for carrying on their culture so successfully, but even without such exhaustive resources it is surprising what results may be achieved by those who take an interest in the cultivation of these winter flowers. Although so valuable as button-hole flowers, it does seem strange that so little trouble is taken with them in many gardens and so little space devoted to them. I am inclined to think this is attributable not so much to the unsuitableness of the structures gardeners have to deal with as to the want of a proper system or method of procedure. To be successful, an early start must be made in striking cuttings, as unless this is done the plants cannot attain a useful size or sufficient maturity in their growth to flower freely and continuously during the most sunless months of the year. I have adopted for the last few years a similar course to that so well described by Mr. Douglas, and although not many plants were grown, there were but few days in the year when a bloom could not be found; indeed from a batch of not more than two dozen plants I was able to supply a coat flower daily for my employer the whole year.

In growing so few plants I found there was an advantage in keeping a portion of the stock over the second year, as the older plants furnished the earliest autumn supply. This course may, or may not be necessary, varieties differing in point of early flowering very materially, but the plan suited my case so well, that I shall not be inclined to give it up until I have found a better one. After a stock of cuttings had been secured, the best of the year-old plants were selected and placed into pots a size or two larger, removing at the time as much of the old and unoccupied soil as possible by the aid of a small pointed stake. Turfy loam broken fairly small, with leaf-mould and dried cow manure added in good proportion, formed the potting compost, soot, bone-meal, and sharp sand, a small sprinkling of each, aiding its richness and porosity. Cocoa-nut fibre I find a good substitute for leaf-

mould, and there are seemingly few plants that will not root freely in this. Sturdy and short-jointed growths may be gained to some degree by firm potting, although in Tree Carnations tall shoots are naturally expected in many of the best sorts.

To flower them well in winter they must necessarily have some open-air treatment for the consolidation of their stems, which have a sappy tendency when kept permanently under glass. If a good strike is secured in February and the plants grown steadily on, they will be ready for placing into their flowering pots in May or beginning of June, by which time they can be stood in a sunny spot outdoors, and there remain until September. The old plants share a portion of the same space, allowing room for the plants to stand clear of each other, so that a maximum amount of air and sunshine may reach every leaf and stem. The same rule should be followed in the autumn when they are housed for the winter, for if stood thickly together, shaded by other plants, or standing a long way from the glass, they quickly become enfeebled, and disappointment to the grower is sure to follow. Tying and staking must not be neglected. Stakes of sufficient length to support the full-grown plant ought to be put to it early, securing these to strained wires or some other convenient arrangement to prevent them being blown about by the wind. When standing unsecured, they fall about one over the other with the slightest wind, which renders them liable to be broken, and the roots injured by the swaying of stakes to and fro. If the pots are wholly or partially plunged in the ground, or in cocoa fibre or ashes, they are kept steady as well as protected from scorching sun, which, when the plants are in small pots, does a deal of injury to the fibrous roots exposed to the heated surface.

When the soil is well occupied with roots, stimulants should be resorted to frequently in a liquid or dry state, or, preferably, both alternately. Good flowers and a continuous supply cannot be had without the aid of stimulants of some kind. Prepared chemical manures are now so numerous, that it would seem superfluous to mention any particular one as being likely to suit Carnations best; it is a question that can well be left to the discretion of individual cultivators. I would strongly advise the use of liquid natural manures; if these cannot be had from farmyard tanks, resort should be had to some favourite kind prepared in a small slate tank; or, failing this, a petroleum barrel previously freed from oil by charring the inside. Soot in a diluted state is a valuable stimulant for Carnations, and may be employed as a change from cow, sheep, horse or fowl manures, each prepared in the same way.

Seed of good strains is offered by the leading seed firms, and this sown at once and the seedlings treated as advised for cuttings will result in good flowering plants by next winter and spring.

W. STRUGNELL.

Road Ashton Gardens, Tranebridge.

Libonia floribunda.—In a warm greenhouse the pretty bright-coloured blossoms of this *Libonia* are borne for months together, and that too during the winter season; still, despite this very desirable feature, it is not always met with in a satisfactory condition, for the foliage often wears a yellow and unhappy appearance, which even if the plant is full of flower detracts greatly from its ornamental features. Some cultivators plant out their *Libonias* during the summer months, but as a general rule this mode of treatment is not nearly so satisfactory as growing them altogether in pots. The cuttings should be struck as early in the year as possible

and shifted on as required. A cold frame is a very good place for the plants during the summer, and in hot weather frequent syringing will be of service, not only to encourage growth, but also to keep down red spider, which will soon cause the foliage to acquire a sickly tint. During their earlier stages the young plants should be freely pinched in order to encourage a bushy habit of growth. As the pots get full of roots occasional stimulants in the shape of liquid manure will be of service, while soot-water will greatly help to maintain the foliage in a rich green state.—T.

Eranthemum pulchellum.—Introduced from the East Indies nearly a century ago, this is still one of the prettiest flowering plants we have in the stove during the winter months, for under favourable conditions it will bloom from Christmas onward, often for three months or more. We have very few indoor flowers at any season of so beautiful a blue as this *Eranthemum*, and at the time it blooms there is really nothing else to compare with it for colour. It is also of very easy culture, and, like most *Acanthads*, is more satisfactory when propagated annually from cuttings, which should be formed of the young growing shoots, and if taken in the spring will root in a few days. If shifted on as required, they will form good flowering plants by the winter. During the summer they will succeed very well under frame culture, but as autumn advances they must be taken into the stove. If kept in a frame throughout the summer and a liberal use made of the syringe, the plants will grow freely and keep free from insect pests, which is not always the case if in a warm house, as red spider often attacks the foliage. Fairly liberal treatment is necessary to the well-doing of this *Eranthemum*, and as the season advances and the pots get full of roots, an occasional dose of liquid manure will be of service.—H. P.

Begonia Gloire de Sceaux.—This *Begonia*, which was awarded a first-class certificate at a recent meeting of the Royal Horticultural Society, is not such a novelty as one might suppose, judging by some of the remarks overheard when it was exhibited. It was sent out either six or seven years ago by MM. Thibaut et Keteleer, of Sceaux, in France, who announced it as a hybrid between *B. socotrana* and *B. subpeltata*. The habit of the plant is stout and vigorous, and without any stopping it naturally forms a neat compact specimen, well furnished with ample foliage of a thick texture and of a rich metallic tint. The flowers, too, are large and borne in good-sized clusters, while their colour is a very pleasing shade of deep pink. As a rule it commences to bloom about Christmas, and will then maintain a succession till spring is well advanced. Public attention being now directed to this particular variety, it will no doubt be much more extensively grown than was formerly the case.—T.

Eupatorium grandiflorum.—It is now about ten years since this species was first brought into notice, yet it has not become so widely cultivated as one might have expected, seeing that its habit is good and that its flowers are of a purer white than in the commoner species. The size of the heads of blossoms, too, quite justifies the specific name. It is erect in style of growth, with large ovate, coarsely-toothed leaves, quite different from those of the better-known *Eupatoriums*. It is also a slower growing plant, and, contrary to the general practice with *E. riparium*, should be kept for two or three seasons. A good plan after the first year is to plant them out in the open in a sunny position about the middle of June. With regard to the history of this plant I have not been able to trace it back beyond 1882, when the same name occurs in the *Revue Horticole* under a coloured plate. The flowers there are pink, which may perhaps be due to the superior climatic conditions of Southern France, where the species is grown permanently out of doors. Regel, however, figured a somewhat similar *Eupatorium* in his *Gartenflora* in 1852, named *E. grandifolium*. It is possible there may be some confusion in the two names. Regel infers the latter is a native of

Guatemala, as the plants were raised from seeds which came along with some Orchids from that country.

Phyllanthus nivosus.—This stove shrub, which has been known in our gardens for the last twenty years, owes its attractive features not to the flowers, but to the beauty of its foliage. It is a free-growing plant of a loose open habit, whose slender shoots are clothed with ovate leaves, which where well exposed to the light are more or less marked with pink, white and green in varying proportions, some being almost white and others white with a pink tinge, while some have the three colours all blended together, and others are quite green. To ensure well-coloured plants the best marked shoots only should be employed as cuttings. They strike readily enough in a gentle bottom heat, and if shifted on into pots 5 inches in diameter,

lanceolate leaves that are deeply serrated. The blooms, which are borne in many-flowered drooping racemes during the summer, are white and not particularly noticeable, but they are succeeded by berries which render the plant very pretty in the winter. These berries are about the size of Peas, pure white, except a dark spot on the apex, surrounded by a circle and five other dots of the same tint. These berries remain fresh a very long time. It is not hardy, and the treatment given to greenhouse Rhododendrons will suit it perfectly.—H. P.

Rhododendrons.—The charming boxes of cut trusses of the javanico-jasminiflorum hybrids shown by Messrs. Veitch and Sons so frequently at the R.H.S. meetings should do a great deal towards extending their popularity. I have personally often longed for an opportunity of growing

house they may be had in bloom at a time when most outdoor subjects wear their winter garb. Apart from the beauty of the flowers, the mass of tender unfolding foliage is very pretty, and when crowned with huge blossoms a group of these Pæonies forms a most striking feature in the greenhouse or conservatory. The better kinds of Tree Pæonies always command good prices, owing to the fact that they are rather slow of increase and by no means of rapid growth afterwards. Whether single or double flowers are the more beautiful is at least an open question, for both have their admirers. For two or three years previous to the present season considerable numbers of these Pæonies have been sent here from Japan, and disposed of at the London auction rooms. They bore the journey well, the roots being tightly packed in Moss, while the tops were allowed sufficient space for the free circulation of air around, which was assisted by holes bored in the boxes opposite these air spaces. The first consignment realised high prices, but these were not afterwards maintained. Up to the present none of these Pæonies from Japan have made their appearance this winter. Of those sent last season nearly all that came under my observation had single flowers, and very beautiful they were, some huge white blooms being particularly striking.—H. P.

Impatiens Sultani.—This is very useful for flowering at the present season, for just now the blooms appear to be unusually bright and cheerful. Introduced about a dozen years ago, it rapidly became popular, but of late I do not think it has been quite so generally cultivated as was formerly the case. Apart from the beauty of its blossoms this Balsam possesses two other very desirable features, viz., its easy cultivation and freedom of flowering. Different individuals vary somewhat in the colour of their flowers, and there are now some three varieties in cultivation—carminea, salmonea, and variegata. The varietal name of this last applies to the foliage, but the plant usually presents a somewhat diseased and unhappy appearance. There is, as far as I am aware, no white-flowered variety, though the name of *Impatiens Sultani alba* is occasionally to be met with, but the plant to which this name is applied is the allied *I. flaccida alba*, somewhat in the way of, but quite distinct from *I. Sultani*. When the gorgeous coloured *I. Hawkeri* was introduced great expectations were formed of it, and it was thought likely that the new-comer would prove of service to the hybridist, but, as far as I know, these anticipations have never been realised; indeed, *I. Hawkeri* has never to my knowledge produced seeds, but it can be very readily propagated by cuttings. It has not become so popular as was at first anticipated, the habit of growth having, perhaps, something to do with it, while it is particularly liable to the attacks of a minute insect like a small yellow thrips, which causes the buds to drop and the young foliage to acquire a diseased appearance, the real cause of which is often unsuspected.—T.

Two Bignonias.—I am asked by "T. M." if the two species of Bignonias named below are difficult to manage. The plants named are *B. venusta* and *B. Cherere*. If you have got room enough on the roof, you may plant these with confidence and fully expect to see them flower freely. Both will succeed under pot culture, but they do not flower well enough to warrant my advising that system. A portion of the border should be bricked off, drained, and then filled up with good rich turfy loam. They like an abundance of water during the growing season both to their roots and overhead. After the growth is completed the supply of water should be discontinued, and, without causing the plant to suffer, it should be kept somewhat dry for a time, when flowers will begin to appear. The plants should have ample room to ramble; in fact, the strong leading shoots should be suffered to reach the full length of the house before the knife is used to them. As these plants flower upon the lateral shoots these should be encouraged as much as possible. Very little pruning is necessary, saving in stopping the main shoots



The Mourning Iris (*Iris susiana*). (See p. 130.)

stopped a few times and kept near the glass, they form very pretty little specimens which may be turned to account in various ways, while a large plant or two is often useful for cutting from. A second form is *P. atropurpureus*, more liable to lose its leaves during the winter than the preceding. The foliage of this becomes of a rich purple colour when well exposed to the light. There are other species in cultivation, the best known being *P. pallidifolius*, which is far more generally met with under the name of *Reidia glaucescens*.—P.

Epigynium leucobotrys.—A great many different subjects are grown for the beauty of their fruit during the winter months, and this is one that might with advantage be added to the list of desirable plants for this purpose, as it is very pretty and quite distinct. It is a shrub nearly related to the *Vacciniums*, and indeed is by some writers included in that genus. It forms a somewhat upright growing bush, with dark green oblong

them, but, unfortunately, I have no house I can give up to their culture. I do not mean by this to infer that they cannot be grown with other plants, but the rather I am thinking what a fine feature they are when a house is devoted to their cultivation. One most important fact in regard to these exhibits of the Messrs. Veitch should not be lost sight of, viz., that of these examples having been grown within the fog radius; this conclusively proves their essential properties of withstanding its pernicious effects upon vegetation.—PLANTS-MAN.

Tree Pæonies under glass.—The fact that these Pæonies when in the open ground push forth their foliage and flower-buds so early in the season that they are often injured by spring frosts no doubt prevents their being planted so frequently as would otherwise be the case, yet this very peculiarity is in their favour for flowering under glass, as with just the warmth of a green-

and sometimes cutting out a side growth when they grow too thick. When the plants get too old they should be cut quite down and the soil should be renewed, or a good part of it, without disturbing them too much, when they will soon throw up strong shoots, which must be carefully trained so as to become the leaders for a new plant. *B. Cherere* is an old plant not much known now, but still one of the loveliest and showiest climbers that it is possible to grow upon the roof. The flowers, which appear at the ends of the lateral shoots in great numbers, are large, trumpet-shaped, rich orange-red, with a yellow throat. This plant usually flowers about the beginning of July and continues in full beauty for several weeks. *B. venusta* is more often called a stove climber, but it grows most luxuriantly and flowers most abundantly in a warm greenhouse. Its beautiful flowers are tubular with a spreading limb, and the colour is rich deep orange-scarlet. These are produced during the months of November and December.—W. H. G.

PRIMULAS, CYCLAMENS AND CINERARIAS AT READING.

WE had the privilege of inspecting Messrs. Sutton's well-known and justly celebrated strains of these florists' flowers the other day. The Primulas are remarkably fine; the Cinerarias will improve; whilst the Cyclamens are a trifle past their best, but sufficient can be seen of the latter even now to form a correct idea of their superior quality. All of these popular flowers, with *Calceolarias* (herbaceous), *Begonias* (tuberous) and *Gloxinias*, each in their season are grown under Messrs. Sutton's personal supervision exclusively for their own private seed trade, tubers of *Begonias* and *Gloxinias*, of course, being also supplied. By growing their own stock from year to year for many years past, they have been enabled, by close observation, to effect great improvements in selected kinds; whilst by cross-fertilisation many remarkably distinct and valuable new kinds have been raised. This is now most particularly observable in the Primulas. The noteworthy features of their Primulas are the distinct and clear colours, the compact growth, with no superfluity of foliage, and the freedom of flowering. The strains of Primulas as seen here may be divided into two sections; those with the ordinary form of growth, and those termed the "giant" section, each of these being sub-divided into the plain-leaved and the Fern-leaved varieties, and these again into single and double forms. The former of these if sown at the same time as the giant flower, the earlier of the two. There is also another beautiful strain in which a great advance has been made called the Moss Curled, with the foliage as much curled in some instances as in the finest Parsley; in these also there is great variety. In the case of each named variety there is a great uniformity in the quality, not one rogue being discernible. By artificial fertilisation each colour is kept quite true to its character, and can, therefore, be thoroughly relied upon to reproduce itself.

The following varieties are all decided acquisitions: Pearl, a white variety, raised by Messrs. Sutton in 1879, remarkable for its freedom of flowering, its purity of colour, and its finely fringed blossoms. Reading Pink has lovely flowers of a soft pink shade, deeply fringed. Reading Blue (plain leaf) is a very much improved strain, and a fine contrast to Pearl. Sutton's Blue is a decided advance, with Fern-leaved foliage and porcelain-blue flowers, very fine. Reading Double Blue is an exceedingly handsome and richly coloured new form (deeper in colour, than either of the preceding), the flowers of extra size, and borne in large trusses. Anyone seeing this trio of blues cannot but be impressed with their superior quality. Carmine Rose is valuable as an extra early variety. Purity is a large form of Fern leaf with extra trusses and pure white flowers, with dark stems and foliage; a variety of superior constitution. Gipsy Queen is another distinct white Fern-leaved form, with reddish-brown leaves; a useful variety for vases. Roy Queen is a very compact Fern-

leaved form, pale rosy pink in colour. Snowdrift is an extra free-flowering white, very early, also with Fern-leaved foliage; a standard variety. Ruby King, a rich ruby shade, is very dwarf, and therefore valuable in small pots. Double White is an unusually vigorous variety, finely fringed, very free in flowering, with large trusses, the foliage comparatively small. This should largely supplant the old Double White from cuttings. Double Scarlet is one of the brightest colours yet seen; a counterpart of the foregoing save in colour. This pair and the Double Blue are three decidedly valuable decorative varieties either in a cut state or on the plant, lasting so long when cut, as we ourselves have proved. Mauve Beauty is another fine double, with the shade of colour seen in *Clematis lanuginosa*. Double Carmine (improved), a very early variety, was over. Double Crimson is a large-flowered form of deep colour. Double Fern-leaved Blue is yet another break in the blue section, scarcely so deep in colour as the plain-leaved form, but valuable all the same. Double White Fern-leaf is another great advance, the flowers large, the trusses large and compact; a rival to alba plena. Double Carnation Flake is a form much admired, being flaked and splashed with purple on a white ground.

The giant section includes the following well-defined forms: Giant White, with plain leaves, a stout-growing, but compact variety, the foot stalks short, the leaves of great substance, the flowers extra large and massive; one of the finest for exhibition. Giant White (Fern-leaved) is a counterpart save in foliage, the flowers of the two even larger, assuming a pale blush shade with age. Giant Crimson is one of the very finest of all, of the same style of growth, the flowers very large, the petals overlapping each other, the eye very distinct. Giant Salmon Pink has beautifully fringed flowers of a very pleasing shade of colour. Giant Carmine, very compact, has flowers of a rich carmine shade. In the "Gem" section, Sutton's Gem claims especial notice, being extremely compact in growth, with finely fringed foliage. Any cultivator of Primulas who has the opportunity should see the foregoing choice selection at Reading. In doing this one can select those varieties best suited to any particular purpose, whilst no one could fail to be interested in all.

Of the Cyclamens, it must be added that they are splendidly grown plants, whilst in the various shades of colour there are choice breaks. One with salmon-coloured flowers and a mulberry base is very noteworthy with the true persicum character, the growth, as in every other instance, very compact with a profusion of flower. Another has rosy-lilac flowers with the same good properties. The ordinary forms with dark bases are of a deep shade of colour and broad petal. One called Vulcan has intensely deep crimson flowers, one of the richest in this respect of all. Another called Butterfly has pure white flowers, much more spreading than usual, not at all unlike a butterfly settled on the foliage; this is an extra dwarf and compact form. The giant section is well represented by Giant White, Rose, Crimson, and Purple, all being choice selections of this strong-growing form, the Giant White with a crimson base being likewise an acquisition to those already enumerated.

The Cinerarias possess all the good properties of the florists' flowers with freedom of growth, vigorous growth and large blossoms, the colours of the selfs rich and pure, the parti-coloured forms also well marked and defined. Of the selfs, an indigo-blue was particularly handsome, a pure white also being especially noteworthy; the tipped varieties were very bright, denoting a valuable decorative strain. One of these seedlings had narrow, somewhat twisted forets, pure white in colour; this struck us as a distinct novelty likely to be much appreciated by many growers who are not so devotedly attached to what are strictly termed florists' flowers.

Lachenalias as basket plants.—*Lachenalia tricolor*, *pendula*, and *Nelsoni* are all admirably adapted for basket culture. They grow quite as

vigorously and bloom as freely grown in this way as when potted. The basket should be well lined with green Moss, which will retain much of its freshness during the time the plants are making their growth. For houses of moderate dimensions baskets that will take about eight bulbs are most suitable, but in the case of large conservatories a score or more bulbs may be put together. The appearance of *Lachenalias* in the form of such large specimens is very effective, their graceful growth being more fully displayed than when the plants stand below the level of the eye. The bulbs start naturally in the latter end of August, so that planting must not be deferred much beyond that period. A rich compost is necessary; the same as that commonly used for Hyacinths will do very well. As the days lengthen and the plants grow with freedom, abundance of moisture at the roots must be given, baskets naturally requiring more than pots.—J. C. B.

Ixora Westi.—When I was writing the article upon *Ixoras* to accompany the coloured plate of *I. Westi* I could not give the parentage of this lovely hybrid. Since then I have ascertained from Mr. West, through the courtesy of Mr. J. Veitch and Sons, in whose establishment at Chelsea it was raised, and by whom it was distributed, that it is the result of crossing *Ixora odorata* with *I. amboinica*. Both of these are species, and quite distinct in every respect. In *I. Westi* the robust growth of *I. odorata* is not so apparent, whilst the free-flowering proclivities of *I. amboinica* are well brought out. The truss partakes also of that of *I. odorata*, but it is not quite so large. I have not, however, observed in the offspring any of the perfume of that species. *I. Westi* has not been shown as a specimen plant so frequently as some other kinds, but if some of our well-known growers were to take it in hand, they would find it a grand acquisition by reason of its perfectly distinct colour. Being a variety of very free growth and flowering as freely, when of good size it should yet win its way with specimen plant growers. There is hardly anything of the same pleasing shade of colour as is to be found in *I. Westi*; for this reason, therefore, it should be grown for home decoration as well. I find thus far that our plants of it have wintered well, retaining their foliage in a healthy state in spite of such adverse circumstances as fogs, &c. On one occasion a well-known floral decorator expressed a wish to me that he should like to be able to obtain it in a cut state, he being quite taken with the colour, more particularly in its earliest stages whilst still of a pale shade.—J. HUDSON.

Aralia elegantissima.—This is one of the most useful for table decoration, as it lasts in good condition for such a long time. Plants which have become too tall or have lost their lower leaves should have the tops taken off and the soil kept on the dry side, which will soon cause lateral shoots to form. These, after they have grown about 3 inches, are just in the right condition for making into cuttings. Take them off with a heel and insert them in cocoa-nut fibre refuse in a propagating case where the temperature is warm and moist. After a time, roots will form when the rooted cuttings should be potted off. By treating the above *Aralia* and also the allied kinds in the manner stated above, I am enabled to keep up a stock of useful plants. Many people are under the impression that these *Aralias* must be grafted to increase stock, but it is certainly an erroneous opinion. *Aralias* are expensive plants to buy, and this no doubt is the reason why they are not more used than they are for general house decoration.—A. Y.

Iris chinensis.—What Mr. Buxton says (p. 97) of the terms in which I spoke of the treatment of this lovely winter-flowering *Iris* is strictly correct, and I had my first lesson on the matter from that excellent lady gardener, the late Mrs. Rawson, who made a speciality of this *Iris*, and also of the *Belladonna Lily*. Perhaps nobody ever grew these two plants better. There can be no doubt about the plan I described being effective, as proved by the stout flower-scapes at present on my own plants,

which were only repotted last spring after flowering; of course to get flowers you must retain plenty of rhizome when repotting. I see no reason why the more loamy compost should not answer, but I should say that the kinder treatment given to Col. Johnstone's plants being kept under glass all the year round may have something to do with the good results, and then how often we succeed as well as fail with plants without knowing the reason why. Anyhow, I agree with what Mr. Buxton says of the merits of this greenhouse Iris; the flowers are beyond praise, and they last so long, so that any amount of care spent upon it would be justified. There certainly is no difficulty in getting plenty of flowers once you rightly manage the repotting, especially as to date. Get plenty of good growth, good-sized, dark green leaves in summer, and flowers must follow if the plants are taken into the greenhouse before cold rains or frosts come.—J. WOOD.

SHORT NOTES.—STOVE AND GREENHOUSE.

Hardy Azaleas.—I have recently seen several notes about these charming shrubs. I wish to put in a plea for *A. arboreas*, with pure white red-stained flowers, having just the fragrance of *Jessamine*. It is very hardy, of free growth, and about the latest to come into bloom—not before July. T. SMITH.

Impatiens Hawkeri.—"J. H. B." sends me a nice spray of this plant in full flower. It is indeed a glorious plant. The sender says he has three plants which have been quite a blaze of beauty all the winter. The colour is very brilliant carmine, over which is a tinge of blue, the centre being white. It was introduced by Mr. Wm. Bull, of Chelsea, some few years ago.—W. H. G.

Dracæna Alsace-Lorraine.—J. Hubbard sends me a leaf of this variety for an opinion. I do not know anything of its origin, but it is a very pretty variety. The leaves in the centre are very rich and deep purple, margined with rich scarlet; the young leaves, I am told, are of a uniform brilliant scarlet. This variety, if of good habit, should become one of the leading kinds.—W. H. G.

Echeverias in winter.—These succulent Cape plants are very useful in the winter, as they flower soon after *Chrysanthemums* are over. We notice them with pleasure as table plants in London dining-rooms. They remain long in flower, are very easily grown, and last for some time in a town atmosphere, which is a consideration. They are grown in the greenhouse in winter, and as soon as they bloom are taken where wanted.—Field.

Brunsvigia Josephinæ.—Can anyone tell me how often *Brunsvigia Josephinæ* blooms in a wild state, yearly, or not so often? I have what, judging by Baker's "*Amarylloideæ*," seems a flourishing plant, with fourteen very large leaves, 4 inches to 5 inches across and 2 feet long. It has increased its leaves by four in the three years I have had it, but has never flowered. *B. gigantea* remained dormant two years, and is now growing well. Does not this suggest that they may be naturally irregular bloomers, taking their time about it?—W. S.

Calceolaria fuchsifolia.—Although but little known or cultivated at present, this semi-shrubby species of *Calceolaria* makes a very pretty show during the present month. Its flowers are of a bright yellow, a colour which, in some shade or other, is common to all but a few of the wild forms of this genus. The foliage, however, is very distinct, the leaves being smooth, dark green, slightly toothed, and, as the specific name implies, very like those of a *Fuchsia*. It is well adapted for cultivation in the greenhouse, being dwarf and easily made to assume a compact bushy form. It strikes readily from cuttings, which may be taken at any time during spring. The young plants should be occasionally pinched, and kept growing throughout the summer under ordinary greenhouse treatment, potting them in a light loamy compost. By flowering-time they will be about a foot high and nearly as much through, and may be conveniently accommodated in 6-inch pots. Such plants ought to bear seven or eight of

the elegant panicles of flowers. The species is a native of the mountains of Peru, whence it was introduced in 1878. On March 29 of the following year a coloured drawing of it appeared in THE GARDEN.

ORCHIDS.

TRICHOPILIA SUAVIS.

THIS some years ago I used to look upon as one of the easiest to grow; but, to my surprise, a friend said to me the other day that it would not grow at all with him. The finest and most freely-flowered plants that I have ever seen were grown by Mr. John Day at Tottenham. *Trichopilia suavis* was first found by Warszewicz in 1848 growing upon trees on the volcano of Chiriqui at some 8000 feet elevation. It is also found growing in similar positions some few thousand feet lower down, and consequently cannot bear a very high temperature. A pure white variety has lately flowered. It appeared quite unexpectedly, I believe, and must have been a surprise to its possessor. There is, however, a tinge of yellow in the throat, which serves to enliven it, and the flower has the same exquisite fragrance as that of the typical plant. The typical plant has pure white flowers, spotted more or less with rich, bright rose-coloured spots, tinged with yellow in the throat. In the variety *alba* the flowers are pure white and quite devoid of the spotting. To grow this plant well, I mix an equal part of good brown peat fibre and chopped Sphagnum Moss, and with this at the time of potting I use some sharp Bedfordshire sand. The pots should be well drained and the plants set upon a slight mound raised above the rim of the pot. Set the plants when potted in the cool end of the *Cattleya* house, or, lacking this, in the warm end of the *Odontoglossum* house. *Trichopilias*, I find, do not require much water at the roots; but they revel in a nice moist atmosphere, which, however, requires to be moderated in the winter season. I have found, too, a light syringing beneficial in building up strong pseudo-bulbs and stout leathery leaves in place of the thin, spotted foliage, which I frequently see upon the plants growing in the strong heat of the Brazilian house.

W. HUGH GOWER.

Epidendrum aurantiacum.—J. Wheeler, in sending a bulb with leaves of this plant, says, "Can you tell me what this plant is? I bought it for *Cattleya Skinneri*, but it has small orange-coloured flowers, which did not open." The name I have given above. It was sent home by Mr. Skinner nearly fifty years ago. It was afterwards found in Mexico, and I think it is the plants from this region which produce the small flowers which do not open. The form from Guatemala, I think it is, produces larger open flowers of a deep orange-red, which last a considerable time in beauty.—W. H. G.

Angræcum eburneum.—The delicate constitution of the smaller *Angræcums*, which necessitates for that group very careful cultivation, is, fortunately, by no means so marked in this species. Like its better-known ally, *A. sesquipedale*, with which it simultaneously comes into flower, it will thrive quite well in the warm house without so much regard being paid to position and other conditions in its treatment as such species as *A. caudatum* or *A. modestum* require. It is the strongest growing representative of this genus. The flower-spikes are quite erect and sometimes over 2 feet in length, the most prominent feature of the blossom being the large, broad, cordate lip, which is of a pure ivory-like white. The value of the plant is enhanced by the long time the flowers last, as well

as by the pleasant perfume they give off. Most of the plants in cultivation are probably from Madagascar, where the species was first found. It was afterwards discovered in that remarkable group of islands in the Indian Ocean, the Seychelles, where the double Cocoa-nut Palm also has its only home.

B.

Cattleya Dowiana and aurea.—"H. L." asks why these two Orchids do not flower and what temperature they require. As soon as the bulbs are made up the plants should be placed in cool quarters, where the thermometer is allowed to fall to 50° or thereabouts as a minimum. In the cultivation of the three *Cattleyas*, viz., *aurea*, *Dowiana*, and *gigas*, the one great point is to rest them cool enough before the buds get into a forward state. Once do this and you will prevent autumn and winter growth, which gets them the name of being shy bloomers, because the growth which is made through the winter months is not sufficiently strong to make a sheath. "H. L." will not be able to accomplish this this season, but if he will take the matter in hand next autumn and prevent his plants starting say until about the present time, he will be able to flower them from the next growth. These *Cattleyas* require a lot of heat when making their growth, but a good rest afterwards.—W. H. G.

Lælia peduncularis (*G. Sheppard*).—This is the name of the Orchid flower which you send. It is considered a variety of the plant called *rubescens*, but both Lindley and Reichenbach accorded it specific rank. It is more robust in habit than *rubescens*, but the flowers differ considerably, the colour being rich rosy magenta. The lip has a distinct spot of rosy crimson at the base, and immediately in front of this a zone of pure white, leaving the front lobe of a rosy magenta. This plant does well in a hanging earthenware basket, which should be well drained. It requires a liberal amount of water during the growing season, but only just sufficient during the winter to prevent the bulbs shrivelling.—W.

NEW ORCHIDS CERTIFICATED IN 1892.

AT the July meetings the following were duly recognised: *Cypripedium Stonei* candidum, a very pale form with the other good qualities of the type, the dorsal sepal the most distinct feature; *Dendrobium crystallinum* (General Berkeley's var.), a very pretty variety, shown in profuse flower; *Phalenopsis Artemis* (*rosea* × *amabilis*), a choice hybrid in a choice genus, a rosy tint suffusing the flowers, which are intermediate in size; *Cattleya Schilleriana* Lowiana, in the flowers of which the singularity is the close resemblance of the lip to *Zygopetalum Mackayi*; *Cattleya Rex*, in which the flowers, as regards size, take after *C. Mendeli*, a pale buff colour taking the place of the pink in the petals and sepals, the lip being inclined towards *C. Dowiana*; *Cypripedium Youngianum* (*C. Veitchi* × *C. lævigatum*), another hybrid between two quite distinct species, and an extremely fine one also, being shown in first-rate condition with large flowers; *C. Bryan* (*lævigatum* × *Argus*).—This belongs to the class of dark-coloured hybrids, being also a distinct one.

In August were exhibited *Lælio-Cattleya Ingrami* (*L. pumila* *Dayana* × *C. aurea*), a remarkable hybrid, with flowers of an intensely deep crimson in the lip, the habit dwarf; *Cypripedium caudatum* (*Luxembourg* var.), with larger flowers also richer in colour, a very beautiful variety of this choice species; *Lælia crispa superba*, which is well denoted by its name, being one of the finest forms. *Oncidium macranthum nanum*, a distinct and very pretty variety, the shorter spikes being a decided advantage; *Calanthe Sanderiana*, a species with dark purplish-coloured flowers, very distinct; *Lælia Oweniana* (*L. Dayana* × *L. xanthina*), in which the last named parent is almost lost, the flowers possessing the rich colouring of *L. Dayana*; *Lælio-Cattleya Baroness Schroeder* (*C. Trianae* × *L. Jonghiana*), a lovely hybrid, with all the good qualities of *C. Trianae*, which it resembles the most

During September were shown *Cattleya Oweniana*, which has some affinity to *C. aurea*, but distinct, inasmuch as the sepals and petals are a straw white and the lip of a deeper shade of crimson, a valuable acquisition; *Cattleya speciosa* Sanderiana, a very lovely and distinct form, the sepals and petals pure white, whilst the lip has a golden blotch; *Sophro-Lælia Veitchi* (*L. elegans* × *Sophrontis grandiflora*), an altogether remarkable hybrid, the flowers in size being nearest to the latter parent, whilst in colour they are paler—a rosy crimson suffused with purple, a fine production; *Lælia Turneri superbissima*, the flowers of which are deeper in colour than those of the species, particularly in the lip; *Aerides Augustianum*, an altogether distinct variety, pale in colour and of medium growth; *Cattleya Statteriana*, which belongs to the *C. aurea* family, being a superb variety, intensely rich in its colouring, the lip remarkably fine, being much expanded; *Cattleya Minucia* (*C. Loddigesi* × *C. labiata*), which approaches more nearly the former than the latter parent in habit of growth, but has some of the fine colouring of its other parent. October was not productive of many new varieties, no awards being made at either meeting.

In November, however, this deficiency was fully atoned for, when the following were shown: *Cymbidium hybridum Winnianum* (*C. eburneum* × *C. giganteum*), the plant shown being a finely grown one with six spikes; the flowers partake largely after *C. eburneum*, the spikes and growth after *C. giganteum*; it is in all respects a notable hybrid possessed of remarkable vigour: in colour the flowers are a creamy yellow with crimson spots on the lip; *Cattleya leucoglossa* (*C. fausta* × *C. Loddigesi*), a hybrid on one side of the third generation, the *C. fausta* parentage being *C. exoniensis* × *C. Loddigesi*; in this descendant the colour is a delicate rose, with yellow on the lip, the sepals and petals finely shaped, clearer than in *C. Loddigesi*, a very handsome hybrid as well as a fine feature from the point of hybridisation; *Spathoglottis Viellardi rubra*, deeper in its colour than the type, and altogether a choice variety; *Cattleya labiata Sanderæ*, a variety with bold flowers of large size and fine shape, rosy mauve in colour, with crimson-purple lip, one of the finest forms; *Lælia Perrini nivea*, a pure white and very charming form of a good Orchid; *Lælia elegans excellens*, with flowers of fine proportions and very rich in their colouring, particularly in the lip; *Cypripedium Arthurianum pulchellum* (*C. Fairrieanum* × *C. Arthurianum*), in which the parentage of the first-named is very clearly seen, whilst it has the fine and distinct properties of *C. Arthurianum*, itself one of the choicest hybrids; *Cypripedium Morganæ burfordiense*, a very fine form of this, one of the grandest hybrids ever raised amongst the class; in this plant the colouring was deeper than in the type; *C. Tityus* (*C. ænanthum superbum* × *Spicerianum*), an extremely interesting hybrid; on the side of its first-named parent it is of the third generation as a hybrid, in spite of which its relation to *C. Spicerianum* is evident; *Cattleya labiata albanensis*, a pale form of *C. labiata* with a fine lip; *Catasetum tubulare* var., a form not particularly handsome; *Cypripedium Perseus* (*C. Sedeni porphyreum* × *C. Lindleyanum*), best described as *C. Sedeni* greatly improved, with richer flowers, very prettily spotted; *Lælio-Cattleya Aurora* (*C. Loddigesi* × *L. pumila Dayana*), with much resemblance in growth to the latter with more of the colour of the former parent.

At the December meeting there was a goodly number of new kinds, as follows: *Cattleya labiata alba*, a pure white variety, with the lip finely fringed; in its colour it is the best yet seen; in fact, it is supposed to be the first white form that has been shown; *Sophro-Cattleya Calypso* (*C. Loddigesi* × *Sophrontis grandiflora*) is a most beautiful hybrid, its parentage being very marked; the flowers are of a rich rose colour suffused with violet in a faint manner, the lip being distinctly marked with golden-yellow and tipped with deep rose; *Lælia anceps Oweniana*, a distinct form of rich colour, with lines of white upon the sepals and petals;

Cattleya amethystoglossa (Selwood var.), quite distinct enough in the ground colour of the flowers to merit attention (a creamy white), the lip a rosy purple; *Masdevallia hybrida McVittæ* (*M. tovarensis* × *M. Veitchi*) has pale pink flowers with the habit of *M. Veitchi*; *Cypripedium Johnsonianum* (*C. nitens* × *C. Lawrenceanum*), a fine rich purple hybrid, the dorsal sepal very distinct; *Lælia Fincheniana* has pure white sepals and petals, the labellum purplish violet and white; it is in the way of *L. anceps*. This completes the list of new varieties which have been duly recognised, save those to which botanical certificates were awarded, most of which whilst being interesting are scarcely ever so particularly handsome as to claim special notice.

ORCHIDS.

Cœlogyne cristata hololeuca (*G. Turner*).—I have received flowers of this plant from a small grower who says: "This has cropped up among some imported pieces that have been growing with me for about five years, and this season it bloomed." My friend evidently had this plant in his possession at a time when it was very rare, but it is now becoming more plentiful. It still commands a good price, pure white flowers being so much in request. The blooms of this plant are wholly pure white. I prefer a flower with a stain of yellow in the throat, such as is to be found in the variety *Lemoniana*, for instance, which gives it life and brightness. The plant is somewhat more lax in its growth than the typical plant.—W. H. G.

Cypripedium spectabile.—It is a well-known fact that even in the hands of good growers of hardy plants generally success with this splendid Orchid is the exception rather than the rule. I have not yet met with anyone who can tell us a certain or royal way to success. To the general failures there may doubtless be many contributing causes. A few points one may have become rather certain about, such as what the plant does not like or even what the plant should absolutely have. For instance, I feel sure that the plant does not like to be set very deeply in the half rotten stuff we usually employ. Neither should its roots in their naked state be pressed together *en masse*, for these are in the wild state no doubt held asunder by pieces of vegetable matter. I admit it is difficult to solidify the wigs of roots when planting, but I would do it with silver sand rather than leave it undone. This would point to the importance of the imported roots being sent with all the soil they would fairly carry. This would no doubt be costly to the importer in the way of carriage, but it would be the less costly and safer plan to the planter, who would doubtless be only too glad to pay an extra price for such roots. Failing such roots, and dealing with those that are in large masses, Mr. Dod's plan of trimming off the wigs should commend itself. I am pretty confident that two most essential things to do are to afford the plant a moist shady place, and above all to secure firmly the young growths against wind. I have seen these snapped off by the half dozen, and after a storm even those that have not been actually detached have never looked healthy again. It only seems reasonable that the plants should have support of this kind when we remember that the foliage is of a very top-heavy character, and the base of the stem thin and somewhat brittle. This *Cypripedium* at home mingles with a large amount of other herbage, and even bog-loving shrubs, so as practically to have more shelter and mechanical support therefrom than we could actually afford without a deal of care in our gardens.—J. Wood.

SHORT NOTES.—ORCHIDS.

Lælia harpophylla.—S. Johnson sends me the finest flowers of this species I have ever seen. They each measure over 4 inches across, broad in proportion, the colour bright cinnabar-red, the narrow lip reflexed and with a crisped margin. I have not seen much variation in this species, and am glad to record such an advance.—G.

Cattleya labiata Trianae.—From Mr. J. Broome, of Llandudno, comes a very good and

brightly coloured form of this plant, with large and broad petals of a soft flesh colour, lip broadly marked in front with very bright magenta, which runs in a triangular streak into the deep orange in the throat. It is a very handsome variety.—G.

Cattleya Trianae alba.—"W. W." sends me a very fine flower of this charming variety. The flower measures nearly 8 inches across, the sepals and petals being round, full and pure white, the lip also pure white with a stain of pale yellow in the throat. It is pleasing to find this variety has become more generally distributed than was the case a few years since.—W. H. G.

Cattleya Percivaliana.—F. M. Burton sends me two distinct flowers of this variety for an opinion. The form with light sepals and petals would be a very nice flower had it a better lip. The dark form is a better flower, but it is wanting in the rich orange, which gives such a warmth to good varieties of this plant. The flower of *Cattleya chocoensis* is very good, but this Orchid has lost favour with the majority of *Cattleya* growers because its blooms never fully expand.—G.

Lælia anceps Dawsoni.—Hugh Nicol sends me a flower of this beautiful variety, saying it is from a plant which formed part of the original one imported by the Messrs. Low and Co., now many years ago. The bloom is rather small, pure white; the lip is also white, the front lobe flat, and of a rich rosy purple, having at the base immediately in front of the throat several deep yellow crests, the side lobes streaked with radiating lines of rich purple. This variety is one of the rarest and best that has come to hand out of all the white forms, and I was very glad to see it again.—W. H. G.

GARDEN FLORA.

PLATE 897.

THE ONCOCYCLUS GROUP OF IRISES.

(WITH A COLOURED PLATE OF 1, IRIS GATESI;
2, I. LORTETI; 3, I. LUPINA.*)

THE editor, in asking me to write a note in explanation of the accompanying plate, suggested that I should say a few words about the whole group, of which the three Irises here depicted are beautiful members.

Everyone knows *Iris susiana*, "that Flower de luce," says Parkinson, "which for his excellent beautie and raritie deserveth the first place." It seems to have become known in Western Europe about the middle of the sixteenth century, having been introduced from Constantinople. It very early became a favourite, and seems to have been cultivated with considerable success, for there are few collections of specimens, or of drawings of Irises, in the seventeenth and eighteenth centuries which do not include *I. susiana*. The specimens preserved or figured vary a good deal in size, and Parkinson distinguishes two kinds, the greater and the less, the latter differing from the former in that "the flower is neither so large or faire, nor of so perspicuous marks and spots, nor the colour of that lively (though darke) lustre." "These," he continues, "have been sent out of Turkie divers times, and it should seem that they have had their origin all from about Susis, a chiefe citie of Persia. They have been sent unto us and unto divers other in other parts from Constantinople under the name of Alaia susiana, and thereupon it has been called, both of them and us, either *Iris chalcædonica* or *susiana*, and for distinction, major or minor; in English, the Turkie Flower de luce, or the Ginnie Hen Flower de luce, the greater or the lesser."

* Drawn for THE GARDEN by H. G. Moon from flowers sent May 30, 1892, by C. G. van Tubergen, Jun., Haarlem. Lithographed and printed by Guillaume Severeyns.



GROUP OF IRISES.
1 IRIS GATTONI 2 IRIS GATTONI 3 IRIS GATTONI

For more than two centuries *I. susiana* remained isolated as a species, wholly distinct from all other kinds of *Iris*, until the end of the last century and the beginning of this, when *Iris iberica*, *I. acutiloba* and *I. paradoxa* were discovered.

In 1846 Siemssen, having the opportunity of observing at Jena in a living condition plants of

A natural group—that is to say a group the members of which are not merely superficially alike, but possess such resemblances as to justify the view that they are “related by blood,” that they have a common ancestry—cannot be defined by a single token. It is the aggregate of resemblances which shows their affinity, and if we attempt to insist on any one character, it will sooner or later fail us.

That a number of *Irises* do, with the three original *Oncocyclus* *Irises*, form a fairly well-defined group there can be no doubt, and the term *Oncocyclus* has been now in use so long, that much may be said in favour of retaining it, it being understood that it is employed not in its original natural meaning, but in a new and artificial sense.

The characteristics of this group are in the main as follows:—

In the rhizome the young bud, instead of being attached to the stock by a broad flattened base, and projecting slightly, stands out in the form of a nipple, the base of which is often much constricted. In many forms the attachment is lengthened into a cord, often a very narrow one, so that the bud is at the end of a “stolon.” According to the narrowness and length (or the reverse) of the connection of the bud with the stock, the rhizome may be spoken of as more or less spreading or creeping, or more or less compact.

The foliage, as compared with that of most other *Irises*, is scanty; the leaves are relatively narrow, sometimes very narrow, and in the majority of cases very falcate or sickle-shaped.

The stem or scape, rarely exceeding 1 foot and generally a few inches only in height, bears a single flower (accompanied in rare cases by the rudiment of a second one), which is conspicuous by its size, by its colouring, or by its markings, or by all three. The spathe valves are large and long, generally inflated, green, and persistent for some time after flowering. The flower always has a perianth tube above the ovary of some considerable length. The outer perianth segment or fall bears on the claw and hinder part of the blade a number of hairs, which in some species are sparsely scattered and generally large and complex in structure, but which in other species are gathered into a more or less compact “beard,” in which case the individual hairs are smaller and simpler in structure; in some species an intermediate condition is met with, in which a more or less compact median beard is flanked by scattered hairs. The inner perianth segment or standard very frequently bears hairs on the claw, but these are usually scanty and very often wholly absent.

The fall varies much as to relative size and as to shape in the different species, but the standard is relatively large and, being in all cases larger than the fall, and in most cases markedly so, is very conspicuous. The crests of the style are also nearly always large and conspicuous.

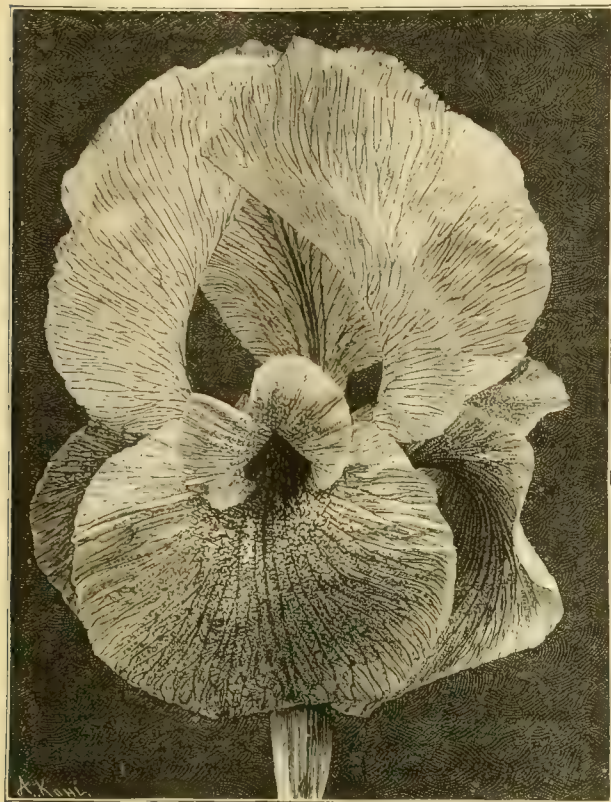
The colour of the whole flower is rendered striking, sometimes extremely so, sometimes less so, by the contrast between the colour of

the veins and that of the ground substance, the coloured lines of the veins running frequently into an irregular network or being broken up into a series of dots or blotches. And the fall in nearly all cases bears on the blade in front of the hairs or beard a conspicuous large patch of deep colour, which serves as a “signal” for insects. The veins are, as a rule, not only extremely bold, but of a somewhat peculiar nature. Each of them shows a thin median streak of a deeper, well-defined colour, flanked on each side by a band of lighter colour, which is not only diffuse, but irregular in outline; it breaks away into the surrounding ground in many different ways. The outline of the whole vein is frequently a regular or irregular zigzag.

The three-sided ovary becomes after fertilisation developed into a very large also three-sided capsule, which when ripe splits at the apex and for some little way down from the apex along the sides in a characteristic manner, the axial junction remaining intact, so that the three chambers do not, as in most other *Irises*, come apart. It contains a variable, but generally large number of relatively large seeds. In the fresh ripe seed the wrinkled body of the seed, generally brown or reddish brown, contrasts strongly with the fleshy-looking creamy white appendage called a strophiole, which is sometimes as bulky as itself.

Of the above features, those on which Siemssen insisted were the long perianth tube, the disproportionate size of the standards, the diffuse beard, or collection of hairs on the fall, the dehiscence of the capsule, and the strophiole of the seed.

Some of these characters, for instance, those pertaining to the root and seed, are shared by certain other *Irises*, as, for example, *I. Korolkowi*, but these latter bear two or even three flowers on the stem, have flowers of a different form, and may by other characters as well be distinguished as a separate, though allied group, to which I have given the name *Regelia*. The characters which I have given above as belonging to the *Oncocyclus* group are exceedingly consistent. When, for instance, a plant is sent to me from its native home and reaching me withered and



Iris Gatesi.

I. acutiloba and *I. paradoxa* which had been brought from the Caucasus by Koch, was so struck by their peculiar features that he proposed to found a new genus *Oncocyclus*, derived from *ὄγκος*, a curve (allied to the Latin *uncus*), and *κύκλος*, a circle. Though he does not explicitly state so, he apparently meant this name to denote the orbicular and curved shape of the standard, the large development of which as compared to that of the fall, so conspicuous in the above two species, served him as one of the distinctive marks of his new genus. Siemssen further recognised that *I. iberica* also belonged to his new genus; but, curiously enough, makes no reference to *I. susiana*. The new genus, however, was not generally accepted, and with reason; but the name *Oncocyclus* may be conveniently used to denote the group or section of the genus *Iris* to which the above-named *Irises* belong.

Since that time, and especially of late years, several new species have been found (and many of them, thanks chiefly to the energy of Herr Max Leichtlin, have been brought into cultivation) which are obviously in such close affinity to the four *Irises* just spoken of, that they must be considered as belonging to the same group, even though the features by which their affinity is shown does not include the particular feature on which the name of the group is founded. This is a difficulty which is always apt to arise when the name of a group is founded on some one structural character.



Iris iberica. Engraved for THE GARDEN from a photograph sent by C. G. van Tubergen, Jun., Haarlem.

dry, possesses a root such as I have described above, the remains of narrow falcate leaves, and a stem, bearing within large conspicuous spathe valves the remnants of a solitary flower, in which one can perhaps only recognise that there is present a three-sided ovary with a fairly long tube, I have no hesitation in putting it down as

an *Oncocyclus Iris*, and I feel sure that I may look forward to a flower which will certainly prove interesting and may be very beautiful.

The species, so far known, which belong to the group thus defined are as follows:—

I. SUSIANA (Linn., Sp. Pl., 55).—This is so well known that I need say little about it. Its distinguishing features may be briefly summed up thus: The root is compact, the leaves are relatively large, sometimes a foot or even more in height, and nearly an inch in breadth, distinctly yellowish green. The flower is relatively very large; the falls are rather longer than broad; the styles are bent down so as to be nearly horizontal, and the prevailing colour, a dark grey, is produced by numerous veins and dots of a dark almost black-brown with a slight tinge of purple* on a creamy white ground, which acquires a brownish hue owing to the diffusion of colour from the margins of the veins and dots. The hairs of the fall are black. As the flower withers the purple constituent of the colour becomes very prominent.

I. IBERICA (Hoffman, Comment. i., 41).—I take this second since it is the best known next to *susiana*, and each of the two may serve as a standard for a group of less well-known species. The distinguishing features of *I. iberica*, whose home is in the Caucasus and adjoining regions, are as follows: The rhizome is compact, the several parts, buds and branches being more slender than in *I. susiana*. The foliage is dwarf, the leaves being narrow, often not more than a quarter of an inch in breadth, and short, 4 inches to 6 inches in length, but very falcate. The stem is short, sometimes only 1 inch, and rarely more than 6 inches or 8 inches in length. The flower, though varying in size and generally smaller than in *I. susiana*, is large enough to seem wholly disproportionate to the foliage. The fall is more or less orbicular, remarkably concave, and the style is not merely horizontal in direction, but curved sharply downwards so as to rest in the hollow of the fall, and an insect crawling in search of nectar up the tunnel, of which the style forms the roof, has at first to ascend almost directly upwards. While the fall is marked with bold netted, irregular coloured veins, the veining of the standard is thin and delicate, often hardly visible; hence in this respect the fall and standard contrast strongly with each other, whereas in *I. susiana* they are much more alike. On the blade of the fall, just in front of the end of the style is a very conspicuous signal, in the form of a patch of deep colour with a very sharply defined outline, marking the entrance to the nectar tunnel. Whereas *I. susiana* varies on the whole very slightly and merely in size and depth of colour, *I. iberica* varies very widely, not only in size, stature, but in colour and in the character of the venation, especially of the falls. In what is perhaps the most common form, the general colour of the fall is a peculiar dark brown-purple, difficult to describe, due to thick irregular, netted, more or less diffuse veins and dots, which almost hide the creamy white ground colour, while the white ground colour of the standard is so little broken by these purple veins or small dots as to appear almost white. The veins of the fall may be very thick and diffuse, running into irregular blotches, or may be thin and comparatively speaking sharply defined, and hence the prevailing tone may be more or less brown or more or less purplish black. The signal patch is very constant, being of rich deep, almost black-purple. The colour of the standard is very variable, due chiefly to the diffusion of one or another hue over the ground substance; thus it

may be a light bluish purple, almost a blue, or a reddish purple, almost a red, a creamy white tinged with brown, so as to be a stone colour, and so on. Since *I. iberica* is not a florist's flower, it is unnecessary to give each plant exhibiting any individuality of colour or form a separate name; otherwise from what I have seen myself I could easily throw into circulation some two dozen names or so. Regel (*Gartenflora*, t. 386) figures a var. *ochracea*, in which the fall is a rich orange tinged with brown, and the standard a nearly pure white. This I have not seen, but the var. *Belli*, mentioned by Mr. Baker ("Irideæ," p. 20) with dark lilac standards, seems to me one of the many varieties which have come before me. All these are beautiful flowers, even the least charming of them to my mind far exceeding in beauty *I. susiana*; but I give the palm to the two varieties from Kurdistan, which I owe to the great kindness of the Rev. Dr. Reynolds, of Van. One of these is remarkable for the large size of the flowers, which combine the magnitude of *I. susiana* with the graceful outline and purity of colour of *I. iberica*. The other, though rather small, seems to me by its exquisite tints to be one of the most lovely flowers I know; the standard is a pure dead solid white, with only a few hardly visible black-purple spots around the base of the claw; the fall is marked with a thick irregular network of a chocolate-brown, while the signal is a deep crimson, and the style is almost quite black. The plant known as *I. iberica* var. *van Houttei* appears to me to be one of the hybrids between *I. iberica* and *I. susiana*, of which I will speak later on.

I. GATESI (Foster, *Gardeners' Chronicle*, 1890, ii., p. 18).—This was discovered in the country above Mardin, in Armenia, by M. Max Leichtlin's collector Sintenis in 1888, and is named after the Rev. T. G. Gates, of the American Mission at Mardin, through whose kind assistance Sintenis came to know of it. It comes very near to *susiana*. The rhizome is perhaps still more compact, and the foliage smaller, shorter and narrower, and of a darker green than in *susiana*. The stem is taller, reaching 1½ feet or even 2 feet, and the flower when well grown larger than that of any *susiana* I have ever seen. The fall is relatively broader, more than 4 inches across, and curved so as to be convex from side to side as well as from above below. The standard is nearly orbicular and very large, 5 inches or even more across, and when the flower is fully expanded in a calm atmosphere stands erect, so curved as to be concave inwards both from side to side and from above below, so that the surface is somewhat saddle-shaped. The prevailing colour of the specimens so far cultivated is, when the flower is seen at a distance, a soft delicate grey, brought about by very thin clear veins (those of *susiana* are thick, blotchy, irregular) and minute dots or points of purple on a creamy white ground, the dots being predominant on the fall and the veins on the standard. The hairs on the claw beneath the style, grey or brownish flecked with dark purple, are crowded irregularly into a diffuse beard, which, bifurcating in front, embraces a purple patch of no great size or conspicuousness produced by the aggregation of purple dots. The style, whose yellowish ground colour is sprinkled with purple dots, is bent horizontally close down on the claw of the fall and bears two large spotted and streaked semicircular crests with finely serrated edges. The ripe capsule is exceeding large, as much as 5 inches in length. To my mind, this *Iris* when seen at its best, with standards and falls fully unfolded, and its delicate tint not yet marred by bruises, rain-drops, or the beginnings of withering, is of surpassing grace and beauty. The accomplished artist has doubtless faithfully represented in the plate the specimen given him, but it was not in good condition; the fall especially is too much folded up, the standard has in part collapsed, and the colour is not that of the flower in its pristine beauty. The substance of the petals even in best grown specimens is somewhat flimsy; the flower does not bear travel, and even gentle winds soon deform its natural grace of outline. As far as I can learn, all the flowers which have been borne by the roots, which Sintenis sent to M. Max Leichtlin have the

same grey hue which I have just described; but Sintenis, in announcing his discovery of the plant to Max Leichtlin, spoke of it as of a sky-blue colour. Whether the blue was that of a dried specimen (for as in *susiana* the blue or purple becomes prominent after death), or whether there is a sky-blue variety remains to be seen. If the latter does exist, I cannot but think that it will appear to have touched the very limits of graceful beauty.

I. SARI (Schott, *Baker, Gardeners' Chronicle*, 1876, ii., p. 788).—This, which was described by Schott in MS., but first published by Mr. Baker, derives its name from the river Sar, in Cilicia, in the neighbourhood of which it was found. It comes near to *susiana*, having a compact rhizome, relatively large foliage, a fairly tall (a foot or less in height) stem and large flowers; indeed the var. *lurida*, which alone I have seen in cultivation, is often mistaken by a casual observer for *I. susiana*. In this var. *lurida*, the flower of which is rather smaller than that of *susiana*, the fall is somewhat narrower than in *susiana*, distinctly convex from side to side, and marked with thick irregular netted dark brownish purple veins, the colour of which diffuses into the ground substance between; below the end of the style the blade of the fall bears a "signal" patch of dark almost black-purple, but the outline of this is much less sharply defined than in *I. iberica*. Beneath the style on the claw is seen a diffuse beard of scattered hairs, which are yellow in the median region, but purple towards the sides. The orbicular standard is marked throughout with thick veins and numerous dots of very dark purple. The style, which is reddish brown with a purple tinge, is not bent down as in *I. susiana*, and still more in *I. iberica*, but hardly horizontal, even inclined upwards. As a minor point, it may be mentioned that the scape is to a much larger extent covered by clasping leaves than is the case with *I. susiana*, in which the scape is largely naked. On first opening the flower has a general dark grey appearance not unlike *I. susiana*, but as it grows older the purple hue becomes more predominant, and when the flower begins to wither becomes very marked, at least in the standards; but though the several plants in cultivation vary somewhat as to the prominence of the purple, I have not yet seen a perfectly fresh flower with so distinctly lilac standards as that figured in *Botanical Magazine*, t. 6960. I am now speaking of the var. *lurida*; in the type, as described by Schott, the fall as well as the standard is a bright lilac, but this I have never seen.

I. HEYLANDIANA (Boissier, *Fl. Orient.*, v., 130).—This species, which is found in Mesopotamia, comes near to *I. Sari*. The foliage is perhaps narrower and the scape more completely clothed by clasping leaves. Both fall and standard are marked with brown-violet or black-purple veins on a dingy white ground, the purple hue not being so prominent as in *I. Sari*, and the white ground coming more to the front. The hairs on the claw of the fall are not purple, as in *I. Sari*, or black, as in *susiana*, but white, more or less tinged with yellow.

I have in cultivation a plant under this name which I owe to the kindness of M. Max Leichtlin, and which answers fairly well to Boissier's description, save that the root is compact and not creeping. If my plant is the true one, then the differences between *I. Heylandiana* and *I. Sari* are perhaps hardly of specific value; indeed, I may remark that in general among these *Oncocyclus Iris*s there has been a tendency to establish species on very slight differences. In my plant the claw of the standard bears a few scattered hairs, which I have not seen on *I. Sari*; but this is a very minor feature.

I. LORTETI (Barbey, *Herbor. au Levant*, p. 178, t. 7).—This most beautiful *Iris* was discovered some years ago between Meis and Hounin, in South Lebanon, by Dr. Lortet, the accomplished naturalist of Lyons. It was described by Barbey, "*Herborisations au Levant*," p. 178 1882, who there gives a large coloured figure of it. Thanks to the unwearied zeal of M. Max Leichtlin, a considerable stock of roots has recently been imported from Palestine.

* I may here say that I use the word purple in its broad meaning as signifying one or other of the several colours which, not being present in the visible spectrum, are complementary to the certain parts of the green of the spectrum, and which may be considered as mixtures of red and blue, following upon the violet of the blue end of the visible spectrum, and thus uniting it with the extreme red of the red end. Shortly speaking, I apply purple to any colour in which blue seems to be mixed with more red than can be recognised in the violet of the spectrum.

In general features it comes very close to *I. Sari*, but its wonderful colouring puts it by itself as, perhaps, the most beautiful Iris in the world. In the specimens gathered by Lortet the outer segments are described and figured as showing a very pale blue ground covered with crimson spots, which, scattered sparsely over the marginal parts of the fall, are concentrated into a dark crimson patch or "signal" in the centre beneath the end of the style; the inner segments or standards are similarly described as being of a delicate pale rose. In a plant flowered by myself this summer the falls showed a creamy yellow ground marked with crimson spots, concentrated at the centre into a dark crimson signal, while the standards were nearly pure white, marked with very thin violet veins, hardly visible at a distance. The plant figured in *Botanical Magazine*, t. 7251, from Mr. Elwes' garden gives the prevailing tone of the standards as a light violet, while the veins, spots, and signal on the fall are purple.

I learn that the plants imported by M. Max Leichtlin show considerable variation in colour; apparently, however, the "note" of the plant is a peculiarly charming combination of crimson spots and blue or violet veins on a white or creamy yellow ground.

The flower figured by Barbey is as large as that of an ordinary or rather small *I. susiana*; the one shown in this plate is not quite so large. I imagine that, when well grown, the flower will be found to be about as large, but on the whole rather smaller than that of a well-grown *I. susiana*. When the plant is well grown, the foliage seems to be larger, longer, and broader than even that of *I. susiana*.

I. BISMARCKIANA (*Gartenzeit.*, 1892, 355, fig. 72).—This Iris, found in the Lebanon, has been introduced by Messrs. Dammann, of Naples. I only know the rhizomes and imperfect dried specimens of the flower. It is described as having a flower as large as *I. susiana*, with grey falls and sky-blue standards. Some years ago I received from Miss Lee, of Nazareth, rhizomes of an Iris which seems fairly common in Palestine. I exhibited a flower this at the Royal Horticultural Society under the provisional name of *I. Sari* var. *nazarena*. But it differs from *I. Sari* most distinctly in the characters of its rhizome, which is not compact, but spreading or creeping to a very marked extent; it sends out long, thin, stolon-like shoots many inches in length. In this it agrees with *I. Bismarckiana*, and by this the two differ from all the Irises of which I have so far spoken. I am very much inclined to think that my Iris is identical with *I. Bismarckiana*; at all events, I do not put it forward as a new one until I have had an opportunity of comparing authentic specimens of the two in a living state. Besides the creeping rhizome, my Iris possesses the following features: in foliage and in its relatively tall stem it resembles *I. susiana*, and is nearly as large in flower. The fall, obovate, with the blade convex from side to side, is marked by an irregular network of dark reddish brown-purple veins on a straw-coloured ground, if we can give the name of vein to a regular row of spots or blotches running into each other. In the middle of the blade in front of the end of the style is a well-defined heart-shaped "signal" patch of intense, almost black, crimson or red-purple. Behind this and stretching along the claw beneath the style is a diffuse beard of not very numerous dark purple, almost black hairs, disposed chiefly on each side of the middle line, leaving a bare median streak. The standard, orbicular, or nearly so, but somewhat obovate, with a bluntly serrate edge, is marked with thin blue veins on a creamy white ground, there being no spots or dots, though on the claw the veins become blotched as they assume a red-brown-purple colour. The style, which is horizontal, or even inclined upwards, is somewhat narrow, bears deltoid crests, which are divergent, reflexed, and have a finely serrate edge; it is marked with numerous reddish brown spots or blotches on a creamy white ground. The flower is very striking and handsome, though it is inferior in beauty to Lortet's, Gatesi, or *iberica*. I have observed in this species what, as far as my experience goes, is very rare in *Oncocyclus* Irises—the rudiment

(not more than the mere rudiment) of a second flower within the spathe valves.

I. LUPINA (Foster, *Gardeners' Chronicle*, 1887, i., p. 738).—The five Irises of which I just spoken so far resemble *I. susiana*, that they may perhaps be put into a group with it. *I. lupina*, a native of Armenia and Central Asia Minor, which was made known to me by Mrs. Barnum of the American Mission at Kharput, is in some ways intermediate between *I. susiana* and *I. iberica*. The rhizome is compact; the foliage, though somewhat variable, is dwarf like that of *I. iberica*, sometimes exceedingly dwarf, 3 inches or so in length, and then extremely falcate. The flower, borne on a stem sometimes 1 inch or 2 inches, sometimes 6 inches or even more in length, differs in form from both *I. susiana* and *I. iberica* in that the fall is distinctly lance-shaped, narrowing to a blunt, but still pointed tip, and the standard also is oval, not orbicular. Its colour, moreover, is very distinctive, being brought about by irregular brownish red veins on a yellow or greenish yellow ground, the red of the veins often merging into purple. The claw and the hind median part of the blade of the fall bear a number of large yellow hairs arranged in several rows, some of the hairs being tipped with purple, and on the blade of the fall in front of this diffuse beard is a more or less triangular "signal" patch of very dark almost black-purple. The style is curved down close over the fall, and bears very large semicircular crests with serrated edges. The claw of the standard is furnished with quite numerous hairs. Though the colour is always the result of a contrast between a yellowish ground and a red-brown, more or less purplish veining and mottling, the exact result varies much in different plants. In some plants the ground colour is a nearly pure bright yellow, and sufficiently abundant to give a good contrast with the red-brown veins; the whole flower is then to my mind exceedingly handsome. In other plants the ground colour is greenish yellow, and the total effect is spoilt by a certain dinginess. In other plants, again, as in the one figured in the plate, the peculiar red-brown-purple of veins so encroaches on the ground colour, especially in the standards, as to make these too sombre and dark. In its native home it is called the "Wolf's-ear," to which indeed an opening bud presents no small likeness. Hence I have called it *I. lupina*.

I. ATRO-PURPUREA (Baker, *Gardeners' Chronicle*, 1889, i., p. 330).—This Iris, introduced into cultivation from Syria by Messrs. Dammann, may perhaps be considered as coming within an *iberica* group. The foliage is not unlike that of *I. iberica*, and the stem, though always of some length, never rises very high. The flower is somewhat small. The fall, narrow and ovate, bears on the claw and hind part of the blade a yellow patch, on which are numerous, but scattered yellow hairs, tipped with dark purple or black. In front of this is a semicircular "signal" patch of almost black-purple, and the rest of the fall is a very dark purple, almost black, no distinct veins being discernible. The standard, larger and orbicular, is also of a deep black-purple, but on this veins of a still deeper colour may be distinguished. The style is of a reddish purple-brown, with relatively small quadrate crests. Within the spathe valves a rudiment of a second flower may sometimes be seen. The plant varies somewhat, one variety being called by Messrs. Dammann "Odysseus."

I. MARIE (Barbey, "Herborisations au Levant," p. 159, under the name *I. Helenæ*).—This, which very clearly belongs to the *iberica* group, was discovered by M. Barbey on the confines of Egypt and Palestine, and was first named by him *I. Helenæ*. Owing to the name having been already used by Koch for an Iris of which I will speak later on, M. Barbey has recently withdrawn the name *Helenæ* and proposed that of *Marie*. The rhizome is compact, but rather slender, the foliage not unlike that of *iberica*, but narrower and less distinctly falcate. The stem is short—about 6 inches. The flowers, which are somewhat smaller than in *I. iberica*, are of a uniform lilac colour, though marked with veins, but the uniformity is broken by a conspicuous "signal" patch of deep

purple on the fall. The standard is larger and more rounded than the fall. The claw of the fall is beset by numerous deep purple hairs, which, scattered at the sides, are crowded together along the middle line more after the fashion of the beard of an ordinary bearded Iris.

I. BARNUMÆ (Foster and Baker, *Gardeners' Chronicle*, 1888, ii., p. 182).—This Iris, a native of the hills of Kurdistan, in the neighbourhood of Van, was made known to me by Mrs. Barnum, of Kharput, after whom I have named it. It seems closely allied to *I. Mariæ*, and with that Iris may be classed in the *iberica* group. The rhizome is slender, and especially when starved has some tendency to creep. The foliage is not unlike *iberica*, but perhaps narrower and less falcate. The stem is some few inches high. The flower, which is distinctly smaller than in *iberica*, has the fall smaller and narrower than the orbicular standard, both of which are of vinous-red-purple marked with darker veins, the standard being lighter in colour than the fall and its veins more conspicuous. The style, which is horizontal, is of a brownish yellow colour marked with red-purple spots or splashes, and bears somewhat triangular crests with finely serrated edges. On the claw of the fall numerous hairs, bright yellow tipped with purple (there are also a few hairs on the claw of the standard), are crowded together into a triangular space, the apex of the triangle pointing forwards and abutting on a signal patch of deep almost black purple, which, however, is much less conspicuous than in *I. iberica* and many other *Oncocyclus* Irises. This collection of hairs may be called a beard, but it differs from the beard of a so-called *Pogoniris* Iris, such as *I. pumila*, since the hairs cover a relatively wider space, whereas in a *Pogoniris* Iris they are confined to what is almost a linear space along the median vein. *I. Barnumæ* possesses every character of an *Oncocyclus* Iris except that the hairs on the fall are somewhat crowded together; it seems to me wholly irrational to separate it from the group on this account. Moreover, there are several scattered hairs outside the triangular space spoken of above. Further, a plant found near Urumiah, on the confines of Kurdistan and Persia, kindly sent me by Dr. Cochran, of that place, in every way resembles the plant from Van, save that the hairs, which are dark purple, are much more diffusely scattered. I have also received from Dr. Cochran a plant almost exactly resembling the typical *I. Barnumæ* save that the entire flower is a fine rich yellow; and in this, too, which if I wished I might call var. *flava*, the hairs on the claw are much more scattered, so that the crowded arrangement of the hairs in the typical form seems more or less an accidental matter. Mr. Baker, in his "Irideæ," has placed *I. Barnumæ* in the section *Regelia*. I can only say that it seems to me to have none of what I consider to be the distinctive features of that group. The typical *I. Barnumæ* falls much short of *I. iberica* in point of beauty owing to the somewhat dull vinous-red-purple colour; but the yellow variety is in my eyes an exceedingly charming plant, and it has the additional virtue of being deliciously fragrant, the odour being not unlike the Lily of the Valley.

I. ACUTILOBA (C. A. Meyer, *Ind. Cauc.*, p. 32).—This Iris, a native of the Caucasus and known for some considerable time, though rarely met with in cultivation, differs so much in certain respects from other *Oncocyclus* Irises, that it may be taken as the centre of a sub-group of its own. The rhizome is slender and very distinctly creeping. The leaves, which are slender and narrow, are exceedingly curved, forming a semi-circle, with the tip bent down to the ground. The stem is an inch or two or even less in height. The fall is very narrow, not much more than half an inch broad, almost strap-shaped, with a lanceolate blade, which is sharply reflexed, in fact, curled back on itself. The standard is very much larger, oblong, twice as broad as the fall, and more than twice as long as broad, erect with a wavy edge. In fact, that feature of the *Oncocyclus* group, which consists in the standard surpassing the fall, is greatly exaggerated in this Iris. The style, which lies down close on the fall, than which it is rather narrower, bears two small triangular crests. The claw

of the fall beneath the style is densely covered with short, dark purple, almost black hairs, which stretch on to the blade in front of the style, and in front of these is a conspicuous, but rather smaller "signal" patch of deep purple, the edges of which are very irregular. The rest of the fall is, according to Meyer's description, a very pale lilac, with darker, conspicuous veins; while the whole standard is of a fuller, but still pale lilac, and the style a pale yellow with purple streaks. In a plant which I have had in cultivation for some years, and which agrees in respect to everything but colour with Meyer's description, the body of the fall is creamy white marked with thick purple veins, and tinged, especially towards the front of the blade, with brown; the standard is creamy white, suffused with brown and marked with close-set, thin purple veins; while the style is a pale greenish yellow, striped with rows of purple dots. Among the drawings and MS. notes by Dean Herbert, preserved in the Lindley Library, is a sketch of an Iris named *I. acutiloba major*. In this the standard is broader than in my plant and very strongly veined. The species probably varies a good deal. The flower is not without charms; indeed, has a quaint beauty of its own, but is far less showy than *I. iberica* and some others.

I. MEDA (Stapf, Denkschrift Wien, Acad., vol. 50, 1885, p. 1).—This Iris is a native of Persia. The rhizome, though small and slender, is compact. The leaves are very narrow, narrower than in *I. iberica*, and for the most part erect, not falcate. The stem is about 6 inches in length, more or less, but seems to vary a good deal. The fall, which spreads horizontally, is elliptical, but narrow and pointed, the blade being sharply curled back on itself. The standard is also elliptical, but rather larger than the fall, and the style, which lies close down on the claw of the fall, is narrow, ending in two small triangular crests. In the plants which I have cultivated, and which, like many other of my garden rarities and treasures, I owe to M. Max Leichtlin, the colour of the fall, standard, and style is a greenish yellow, marked in the case of the fall with thick purple veins, in the case of the standard with brown veins, which, well defined in the median region, become diffuse towards the edge, and in the case of the style with rows of brownish dots. On the claw of the fall beneath the style a number of bright orange hairs form a distinct linear, but thick beard, which is continued on the fall in front of the style (being here especially thick), ending against an oval, well-defined signal patch of deep, almost black-purple. In the typical plant described by Stapf the fall is lilac in colour with a yellow beard and a deep purple signal patch, while the standard is of a paler lilac. He says there is a yellow variety, and of this my plant seems to be an example. The roots given me by M. Max Leichtlin come from two different gatherings, and the plants, though all of the variety yellow, differ in some minor features. Now, *I. Meda* exhibits the characters of an *Oncocyclus* Iris in rhizome, in general habit, in capsule, in seed, and in other features—in fact in every respect except that the hairs on the fall are not scattered, but crowded together into a beard. In this feature only does it markedly fail in answering to the distinctive tokens as given by Siemssen, for other partial failures, such as the erect attitude of the leaves, the shortness of the perianth tube, and the slightness of the difference in size between standard and fall, are shared by one or other members of the group, and indeed of themselves are not of great moment. Led by the feature of the beard alone, Mr. Baker ("Iridææ," s.v.) places *I. Meda* in the *Pogoniris* group, and indeed says that it differs very little from *Chamæiris*. I cannot accept this view. As I have already said, the character of the beard is perhaps the least safe token to trust to in judging of the affinities of Irises, and when weighed against all the other characters may without any fear be at once thrown on one side. Anyone who has grown *I. Meda* cannot help recognising its *Oncocyclus* nature; it needs exactly the same cultural treatment as do the other members of the group; and indeed when it and *I. acutiloba* are put side by side in flower,

everyone would, I think, say at once that the two not only belong to the *Oncocyclus* division, but to the same group of the division. And one may continue to take this view of the *Oncocyclus* nature of the plant, while admitting that in its beard, in its short perianth tube, and in some other features it exhibits a tendency to approach the ordinary dwarf bearded Iris. As a garden plant *I. Meda* is not so striking as *I. acutiloba*; some of the specimens, however, have the charm of being sweetly fragrant. Though the figure of this species in *Botanical Magazine*, t. 7040, is said to have been drawn from a plant supplied by myself, I fear some accident or other must have happened, for I am bound to say that the resemblance between the figure and any plant of *I. Meda* grown by me is extremely small.

I. POLAKI (Stapf, *ibid.*).—This Iris, also a native of Persia, which I only know from the author's description, seems very closely allied to the foregoing *I. Meda*. It has much the same general characters; the fall, however, is a dark purple, with a very dark purple, almost black beard, and an intensely coloured deep violet or black-purple "signal" patch, and the standard is a deep lilac with deeper coloured veins. The author says it differs from *I. Meda* in having relatively longer leaves, a shorter stem, a still shorter perianth tube, broader, more darkly coloured flowers, with broader perianth segments. And what I have said concerning *I. Meda* may probably be repeated concerning it.

I. PARADOXA (Stevens, *Mem. de la Sol. Imp. Nat. Mosc.*, v., p. 355).—In this singular Iris, a native of West Persia and the Caucasus, fitly called "paradoxical," one of the features of the *Oncocyclus* group, the disproportion between fall and standard is carried to extremes. The fall is reduced to a narrow strap half an inch or less in width, stretching horizontally outwards and ending in a rounded apex. It looks very much as if the lateral parts of an ordinary fall had been cut away by two parallel incisions, leaving only the median region containing the beard. The standard, on the other hand, is large, orbicular and erect; and while the small fall is stout and firm, almost leathery, the standard is delicate and flimsy in texture. The style, which lies close down on the fall, being gently curved over it, bears two very small nail-like crests, the division between the two being very slightly marked. The rhizome, though slender, is fairly compact, and the narrow, short, scanty leaves are very falcate, though different plants vary a good deal in the amount of curvature. The ground colour of the claw is a rich crimson or deep pink, but beneath the claw and for some little distance in front of it the crimson hue is all but entirely hid by numerous short dark purple, almost black, hairs, so thickly set as to imitate velvet very closely indeed. This velvet area, at some distance in front of the end of the style, comes abruptly and squarely to an end, being marked off by a cross bar of rich crimson devoid of hairs. The small portion of the fall in front of this bar is of a creamy white, traversed by radiating thick dark purple veins, which are so close set as to leave little of the ground visible. Along the edge of the hinder part or claw of the fall, by the side of the velvet beard, is a rim of similar veined nature. The standard in the type, as described by Stevens, is marked by deep violet or bluish violet veins, the interspaces between which are coloured of a paler violet. Over the claw of the standard and along a median streak over the blade the colour is a creamy white, studded with violet dots. A number of dark hairs are also seen on the claw. The style is brownish yellow, marked with dark purple spots or dots arranged in lines. The plant varies much in size and colour. I have grown plants differing a good deal in the exact hue of the dominant violet, and plants have been observed with white standards or with red-purple standards, the purple being so red as almost to be called merely red. The total effect of the flower is very striking, and, unless an element of grotesqueness be thought inconsistent with beauty, very beautiful. It at once suggests the idea that it is some strange butterfly which is pretending to be a flower.

I. HAYNRI (Baker, *Gardeners' Chronicle*, 1876, ii., 710).—This Iris, a native of Gilboa, in Palestine, has been so named by Mr. Baker. The diagnosis was founded on two dried specimens, and the description is very incomplete. The specimens evidently belonged to an *Oncocyclus* Iris, but whether they really represent a distinct Iris, or are only examples of *I. Bismarckiana*, remains to be seen, if it can ever be settled.

I. HELENÆ (Koch, see *Wochenschrift in Gartenbau-Verein*, Preuss., 1870, No. 23).—This name (in favour of which Barbey has substituted *I. Mariæ* for his previous name of *I. Helenæ*) was given by Koch to an Iris found by him in the Caucasus, near the town Helenenburg. It illustrates the difficulty of determining Irises from dried specimens only, to mention that while some authorities say Koch's type specimens are those of *I. iberica*, others say they are of *I. acutiloba*. From the description given in the journal quoted above, I should be inclined to think that it was simply a deformed *I. iberica*.

The above-named Irises are all the known and described Irises which I can with certainty place in the *Oncocyclus* group, but the future will doubtless add to the list. M. Max Leichtlin has received at various times from Persia Irises undoubtedly of the *Oncocyclus* group, some of which, had they prospered, might have proved new species; but, unfortunately, difficult of cultivation as are all the members of the group, those from Persia are, perhaps, the most troublesome. I believe I am not betraying confidence in saying that M. Max Leichtlin has also quite recently received from Persia rhizomes which seem likely to furnish one new species, if not two or more of this group. And I myself received some few years ago from Central Persia, through the kindness of Mr. Reece, of the telegraph service, rhizomes of an Iris, certainly an *Oncocyclus* Iris, and apparently belonging to the *acutiloba* division, but probably a new species. Unhappily, the only flower it has yet produced was deformed, so that I cannot satisfactorily describe it. Moreover, I have a suspicion that some of the dwarf, single-flowered Central Asian Irises, which have generally been described as belonging to the ordinary *Pogoniris* division, will, when they come into cultivation (if ever they do), and are thus more closely studied, prove to be in reality *Oncocyclus* Irises. I am nearly sure that *I. tigridia* belongs to this group, and I fancy others do so. There are also probably in Beloochistan and Afghanistan, in the region stretching from South-east Persia to the Himalayas, several Irises either belonging to this group, or forming connecting links between it and other groups. I know of one such Iris growing in the neighbourhood of Quetta, but my many prayers, directed both through official and private channels, have hitherto failed to gain an answer in the shape of living roots.

The striking features of an *Oncocyclus* Iris, the large flower, so out of proportion to the scanty foliage, the conspicuous coloration, the boldness of the marking, as seen, for instance, in the intense colour of the "signal" patch on the fall, the manner in which the anther is covered over and hidden by the curved style, all these and other features tell us very clearly that the flower needs the intervention of some insect to secure fertilisation. From the frequent occurrence of seed-pods on imported rhizomes, I am led to infer that in its native home an *Oncocyclus* Iris goes to seed freely; and further, from the condition of imported roots, strengthened by the behaviour of the plants cultivated in this country, I am also inclined to believe that the life of an individual rhizome is not a very long one, and that the race is largely continued by seeding. Here in this country plants left to themselves do not seed freely.

But this is due not to the coldness of our climate, but to the absence of the proper fertilising insects. Our bees, accustomed to more sober flowers, appear frightened at the strange aspect of an *Oncocyclus Iris*; at least I have never, so far as I remember, seen one of these *Iris*s visited by a bee or other insect. On the other hand, if the flower be artificially fertilised, it goes to seed with great readiness. I think I may say that I am more sure of getting seed from an *Oncocyclus Iris* than from almost any of the ordinary bearded *Iris*s. They cross readily with each other, and hybrids may be without any great difficulty obtained between them and the ordinary bearded *Iris*s. M. Max Leichtlin, for instance, has produced several hybrids. I myself, too, have reared and flowered the following hybrids, and possess many more in various stages of development.

I. IBERICA × *I. SUSIANA* AND *I. SUSIANA* × *I. IBERICA*. (The species coming first in these and the following hybrids is always the mother seed-bearing plant.)—Of these two crosses I have raised several plants. Though varying in the exact colour and size of the flower, the height of the stem, &c., they all have a common likeness, and are all more or less intermediate between the two parents. One of them so exactly repeats the *I. iberica* var. *insignis* of Van Houtte, or *I. iberica* var. *van Houttei*, that I have no hesitation in recognising that plant as a hybrid.

I. PARADOXA × *I. IBERICA*.—I have so far raised some four or five hybrids of this strain, differing chiefly in size and in the colour of the standards, but all, so to speak, half way between the two parents; the fall especially is strikingly intermediate. The flower is a very handsome one, and the plant seems perhaps more robust than either of the parents.

I. IBERICA × *I. PARADOXA*.—This, again, is like the preceding; but in one plant which I reared the flower was a very large one, since the parent (*I. iberica*) was not a pure strain, but itself a hybrid with *I. susiana*. It was, moreover, rendered especially beautiful by the standard being a heavily veined red-purple.

I. LUPINA × *I. IBERICA* AND *I. IBERICA* × *I. LUPINA*.—In these cases, again, the *I. iberica* used was in reality a hybrid with *susiana*, and some of the plants bear very large handsome flowers, in which one can trace the characters of the two parents. One of them, in which the colouring is a mixture of yellow with brownish crimson, is to my mind exceedingly beautiful.

I. LUPINA × *I. PARADOXA*.—I have so far flowered three or four hybrids of this kind, all of which, especially in the fall, betray their double parentage. One of them, by reason of the contrast of the violet hue of the standard with the yellow and purple of the fall, is especially charming.

I. MEDA × *I. PARADOXA*.—This has a relatively small flower showing the characters of both its parents, but follows its mother in being less handsome than any of the preceding.

The following are hybrids between an *Oncocyclus* and an ordinary bearded *Iris*:—

I. LUPINA × *I. CENGIALTI*.—This has the inflorescence of the father, but in flower and rhizome is intermediate between the two parents. It is an interesting plant, but the colour is disappointing, being a fusion of the yellow and brown-purple of the mother with the light blue of the father into a dull, peculiar livid purple, a *teint dégradé*. It has an advantage over the mother in being perfectly hardy, needing no special culture.

I. CENGIALTI × *I. LUPINA*.—This resembles the preceding, but is of a better colour, though less vigorous in constitution.

I. CHAMÆIRIS × *I. IBERICA*.—This gives a pleasing little flower in which the *iberica* blood is shown by the more rounded form of the perianth segments, the boldness of the veining, the richness of the purple colour, a rudimentary signal patch on the fall, and the presence of scattered hairs outside the beard. Without being especially handsome, it is a useful little plant. The seed-

bearer was not a typical *I. Chamæiris*, but one of the numerous probable garden hybrids of the wild species.

I. ITALICA × *I. IBERICA*.—This again has very much the same characters as the preceding. In both cases the hybrid plant is not vigorous; it does not need special culture, but it grows slowly and blooms shyly.

I. BALKANA × *I. IBERICA*.—I have flowered two hybrids of this kind. One was a most charming flower with a rich yellow fall, heavily veined with purple, and a light purple standard. Unhappily, in moving it I lost it.

I. SUSIANA × *I. PALLIDA*.—I have raised several hybrids of this strain, which in rhizome and foliage are quite intermediate between the parents. Unfortunately, they are most difficult to manage. I have wholly lost several before they flowered, and those which have flowered have always, as is often the case in *Iris* hybrids, produced deformed flowers. The flower if properly developed would, as far as one could judge, be one having the form, markings, and general characters of *I. susiana*, but one in which the black and grey of the mother were changed into the deep and light blue of the father. If well grown it would have been exceedingly handsome.

The cultivation of the *Oncocyclus Iris*s has recently been so fully discussed, that I need say nothing here on the subject.

Shelford.

M. FOSTER.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

PREPARING HOTBEDS FOR SOWING SEEDS.—A gentle hotbed will be found of great assistance just now for forwarding some of the vegetables which are benefited by a little assistance in this way. Generally the seeds are sown in boxes, but unless the plants are well cared for, they are apt to receive a check, either through being drawn or crippled from the want of timely pricking off. For a small garden a gentle hotbed that will hold a two-light frame will prove of great assistance in the raising of the different kinds I shall recommend. Not a violent heat through a preponderance of stable litter, but a depth of about 2 feet, and the greater portion of leaves is best. After the frame is put in position and with a surfacing of light soil to the depth of 6 inches, the surface of the bed should be about 10 inches from the glass. After the seeds are raised and the seedlings pricked out, the frame may be utilised for forwarding early Vegetable Marrows, or even a few French Beans. In large gardens where quantities of vegetables are needed, frames are in great request, and even in small gardens they will be also useful.

AUTUMN CAULIFLOWERS. — Veitch's Autumn Giant should now be sown, but to ensure an early supply as well, note should be taken of Eclipse or Sutton's Autumn Mammoth, two varieties which will precede the Autumn Giant if sown at the same time. Either sow thinly in drills on a gentle hotbed or in a box of light soil. If in the latter, take particular care as soon as the seedlings are through the soil to place the box on a shelf in a greenhouse temperature. When sown in a frame the lights may be tilted according to the weather. A sowing should also be made in the open air about March 21, weather permitting.

BRUSSELS SPROUTS.—There are two evils to be guarded against in the cultivation of Brussels Sprouts: one, that of sowing the seeds in too much heat, and the other raising the plants too late. Our springs appear to have altered too much to depend upon sowings made in the open air, unless in favourable districts and soils; therefore, as a safeguard it is best to raise the plants in a cold frame. In this way the plants are hardy and strong. Boards fixed together—if a proper frame should not be available—will suffice. Into the frame, when placed in position, put 3 inches or 4

inches of light and friable soil, on which sow the seeds very thinly. If kept close, free from frost and fairly moist, the seedlings will soon appear, when ventilate as needed. When large enough the seedlings must be pricked out before being eventually placed in their permanent quarters. If the seeds are to be raised in a box, pay particular attention to watering and pricking off.

SEED POTATOES.—These will now require careful attention or the sprouts will become much too long and blanched to make a good start when the time comes for planting. Seed Potatoes which have lost their primary sprouts are of no value for planting. If they are already spread out thinly in boxes or even a light room, let the air when the weather is mild circulate around them, when the sprouts will be sturdy, of a deep green colour, and start freely into growth when planted. Any tubers that may have been received from seedsmen and do not appear to have started should be placed in a single layer in a box and stood in a greenhouse, for unless they are treated thus it will be late before they start, and when planted, even on the same day, they will be quite a month later than others with a good strong sprout. In the case of the first earlies, too much stress cannot be placed upon this detail in the routine of Potato culture.

CULTURAL REMINDERS.—Just now the careful cultivator will have to pay great attention to the ventilation of young vegetables being forced on hotbeds. The ventilation is most important with such subjects as early Potatoes, young Carrots, and Radishes, which are now appearing through the soil. On fine days give ventilation before the sun has raised the temperature very high. Put a little on at first, increasing it towards 11 o'clock. Early ventilation and then closing early, so that the sun-heat may be retained through the fore part of the night, will help subjects on considerably. The soil about Potatoes will no doubt be moist enough at present, but Radishes and Carrots must be freshened up with tepid water in the early part of the day, so as to keep them in a growing state. If such subjects lack moisture in the soil, the quality is lessened considerably. Also pay due attention to matting the frames up closely at night. A. YOUNG.

HARDY FRUITS.

PEACHES AND NECTARINES.—Pruning and nailing these may well be deferred another fortnight or three weeks, or till the flower-buds, which are very plentiful this season, begin to show colour, the aim being to retard them as much as possible. The trees move admirably, always provided pains are taken in the operation either now, or, better still, just when the wood-buds are bursting. Those, therefore, who may have trees that they would like to shift to a better position or are anxious to give some of the best varieties more room may well wait a few weeks longer, or till both top and root growth is commencing. Fewer roots are lost owing to imperfect healing of the wounds in connection with the early spring removals than at any time previous, and it is possible to move quite large trees at that period, especially if they have been partially lifted or root-pruned at any time during the past two years, without the loss of a crop. The trees ought to be thoroughly well undermined, the commencement being made by means of a deep circular trench cut not less than 4 feet away from the stems. The aim should be to save as many healthy roots as possible and to preserve a moderately large ball of soil. It is possible to be over-anxious with regard to the latter, extra large balls or any that cannot be conveniently shifted on and off and carried on a short, wide, and stout board being liable to break to pieces. Replant rather high to allow for sinking, the collars being at all times best kept well above the ordinary garden level. Also give the trees the benefit of a fresh start in moderately good loamy compost, and the roots being well and evenly distributed among this will soon commence forming fresh fibres. Mulch with a good thickness of partially decayed leaves in preference to straw

manure. It is not yet too late to partially lift and root-prune trees that are either too vigorous to be productive or are too deeply rooted to grow so healthily as desirable. It is advisable to do one side of the trees this season and the other half either next autumn or the following spring, a severe check being thereby guarded against. Now is also a good time to fork in a dressing of newly-slaked lime. If this is applied at the rate of a 5-inch potful to every square yard of border it would in some cases correct sourness, and in others, may be, supply a much needed element in the soil.

PLUMS AND CHERRIES.—Bullfinches have already started on the flower-buds of the former, and if these pests cannot be destroyed they must be warded off the wall trees by means of slackly-hung fish nets. These birds are very sly and work rapidly, not unfrequently doing great damage among the trees before being much noticed. Much that has been advanced concerning moving Peaches and Nectarines also applies to Plums and Cherries. Both the latter kinds of fruits are best kept well together against moderately warm to quite the coldest walls, and they can then be either more effectively protected or netted over when the fruit is ripe. Both root strongly and can usually be transplanted with a good ball of soil and roots. All, with the exception of Morello Cherries, ought ere this to be pruned, and in the case of wall trees re-fastened. Morello Cherries need not be touched till the Peaches and Nectarines are pruned and re-nailed, allowing the young shoots to be away from the walls serving to retard blossoming considerably.

PEARS.—If need be, comparatively small trees of these may yet be transplanted with every prospect of their growing well afterwards. It cannot be too often pointed out how necessary it is that the surface roots should be taken good care of, and also that trees with their roots either principally very deep-running or in greatly impoverished soil will not produce fruit of the best quality, starved trees likewise seldom bearing every season. Though somewhat late to commence root-lifting, there is yet no good reason why any special tree should not be taken in hand now, one side only being done, and the roots brought up to nearer the surface and relaid in fresh loamy compost. Much of this extra work might be avoided if only proper steps were more often taken towards keeping the roots active near the surface. This can best be done by means of liberal mulchings of strawy manure every winter or spring, also avoiding digging and cropping so close up to the trees as formerly. Where the soil is naturally poor, and in some cases it is constantly dry, loosen the top soil, bare the surface roots, and, after applying a good thickness of good solid manure nearly rotten, follow up with a good soaking of soft water, or, better still, liquid manure. The soil being levelled back over the mulching prevents the latter from becoming dry later on, and the roots deriving so much benefit from the extra food and moisture about them there is a marked improvement in the quality of the fruit the same and next two or three seasons. It is very necessary that a pathway be formed just in front of the wall trees, and early mulching of straw litter prevents this either binding or lifting up badly during the pruning and nailing operations, also, as previously shown, otherwise acting beneficially. Ashes from the stovehole and other places are sometimes substituted with very good results, these lasting well and also preventing a rapid loss of moisture by evaporation and consequent cracking of the surface soil. Especially are the paths of ashes desirable where the trees are naturally in no need of any assistance in the shape of manures.

YOUNG FRUIT TREES.—If these are ordered from nurserymen, removal ought not to be delayed till top-growth has commenced, or the chances are both the roots and tops will be damaged during transit, being kept longer out of the soil than is good for them. Those late planted, with the exception of most of the maidens, ought not to be hard pruned, and, in fact, in very many cases would be best preserved intact. In all probability, if trained trees of Apricots, Plums, Cherries, Pears and Ap-

ples are not pruned they will make little or no wood-growth, but the roots would have a good opportunity of becoming strengthened, top-growth being correspondingly improved during the second season following upon planting. If cut back, the chances are neither top nor bottom growth would be of a satisfactory character, and cutting away so much strong wood would therefore mean a great loss of time. Reserved and duly laid in to its full length, fruit-buds, or the foundation of the same, would be formed at nearly every joint during the first summer after planting. This early productive habit of growth will thus be brought about without any trouble in the shape of lifting or root-pruning; while, on the other hand, it may be necessary to treat precocious-bearing trees somewhat liberally at the roots in order to prevent their becoming stunted in growth. Maidens of Pears and Apples to be grown as single cordons should not be shortened, but in all cases where three or more branches are required, cut them back to within about 5 inches of the point of union of the scion with the stock.

W. IGGULDEN.

PLANT HOUSES.

POTTING PALMS AND FINE-FOLIAGED PLANTS.—In dealing with Palms in particular, it should be borne in mind that it is a very easy matter to spoil rather than improve the plants by potting them too frequently. When the plants are over-potted the roots run away to the sides of the pots, leaving the inner portion of soil untouched, so to speak, until it becomes partially sour; then, of course, they do not take to it kindly. It is somewhat surprising how long a Palm will remain in the best of health without potting at all. When in some cases repotting would be expedient in the case of other plants, the Palms, by careful attention to watering and the judicious use of stimulants, will stand over quite another season. To assist Palms, I have not found anything to surpass Standen's manure (Gardeners' and Amateurs' Friend), a slight dusting being sufficient to last for a week or fortnight. To return, however, to the potting more particularly, I have to state that when it is done, let it be done well, using good soil and taking pains with the work. Firm potting should be the rule, allowing at the same time a good margin at the top for watering, for as Palms are gross feeding plants as regards moisture at the roots, they require in this respect a good provision to guard against drought. If the advice of not potting too often has been carried out, there will not be much soil to be removed before potting, liberating the points of the roots being about all that is needful; the less the roots are disturbed or mutilated the better for the plants. For the strong growing kinds with gross feeding roots turfy loam is the best soil to employ for large plants, adding some leaf soil if they are small ones. Others that are not such coarse-rooting kinds, although of strong growth (the Kentias, for instance), may have a little peat with advantage, whilst others with more wiry roots should have more peat still. In either case a dash of bone-meal will be an assistance, with sand, of course.

CROTONS.—These are another example where overpotting is neither desirable nor beneficial, provided good attention in other respects be accorded them. When small plants, for instance, can be grown on single stems to between 4 feet and 5 feet in height, and that whilst in 6-inch pots and clothed with foliage to the pot, too frequent potting cannot be considered desirable. Leaf soil with mellow turfy loam will suit them well, using a little peat if the plants are specimens, so that they may remain even longer without another shift. Whilst the plants are still at rest it will not hurt any that happen to be at all unhealthy at the roots and that are in rather large pots to reduce them and pot again into the same size, but not the same pot, for all pots even if washed want a period of exposure to the air. Do not attempt to keep any scrubby plants when young ones can be grown on so rapidly to supply their place, unless it be to retain any particular variety for stock.

DRACÆNAS.—These also may be confined to very small pots with good attention to watering, remaining thus in a far better state than if over-potted, retaining the lower leaves far better. For Dracænas I prefer to use rather more of a peaty soil or a light fibrous loam and leaf-mould. Although Dracænas enjoy moisture at the roots, anything approaching a stagnant condition must be carefully avoided; hence fibrous peat is better than heavy loam. A small proportion of soot will greatly assist the Dracænas, just sufficient being used for it to be slightly detected in the soil. When potting look after the tap roots for increasing stock (as well as by eyes from old stools); by removing the tap roots the plants can be got lower into the pots, thus allowing of a better surface-dressing. Tall plants inclined to be leggy should have the tops taken off and put into the propagating pit or be mossed around and partly cut through if the convenience for propagation be not so good.

ALOCASIAS.—These as to soil require to be divided into two sections. Such as *A. metallica*, *A. Lowi*, and *A. Sanderiana* delight in rough fibrous peat and Sphagnum Moss, with charcoal added for specimens, and plenty of silver sand. Failing sufficient Moss, a top-dressing of cocoa fibre (not refuse) will suit them well. These plants are just as well kept elevated somewhat above the rims of the pots. About every other season it is advisable to repot the plants, shaking them quite out of the soil. The pots should be drained quite half way up with clean crocks. The other section, as represented by *A. macrorrhiza variegata* and *A. zebrina*, will thrive better in a more loamy soil, and may be kept level with the pot, whilst so much drainage is not needed. *A. Jenningsi*, a pretty decorative variety, may, like *Caladiums*, be grown in leaf soil and loam.

OTHER FINE-FOLIAGED PLANTS.—Of these, the Pandanads, when of any size, will all thrive very well in turfy loam, only using leaf soil or a little peat for small plants; as in other cases, guard also against overpotting. *Rhopalas* should be potted mainly in peat and sand; the same may be said of the *Marantas*, but *Dieffenbachias* can be grown remarkably well in leaf soil and turfy loam with some spent Mushroom manure. The ornamental forms of *Anthuriums* come almost under the same treatment as the *Alocasias*; being of a coarser growth, some fibrous loam may very well be added, and the plants may be potted more firmly. *Aralias* should be potted in peat and loam, but nothing approaching a heavy soil. *Cissus discolor* thrives well in leaf soil and sand, or, failing the former, peat instead should be used.

JAMES HUDSON.

ORCHIDS.

When writing about Orchids we are too apt to pass over the beautiful greenhouse or garden frame species and varieties, but they are an interesting section of the Orchid family, and some of the South African and North American species are remarkably beautiful. When their culture has been mastered they can be managed with very little trouble, but it is quite necessary to attend to their requirements at the right time, such as repotting them when they need it, watering them freely at one time and keeping them well on the dry side at another. The *Disas*, for instance, are not only interesting plants, but some are exquisitely beautiful. *D. grandiflora* is the best known of them, and grows freely if it has the right treatment. Now is the time to repot the plants. They require pans of various sizes, or they will thrive in well-drained flower-pots. They begin to grow early in the year, and should be repotted before new roots are made. Use for potting material good fibrous peat broken up by hand, some well-rotted cow manure, Sphagnum Moss, and coarse white sand. They can be freely propagated by division, parting the old plants out by hand and carefully saving all the roots uninjured. The variety *superba* is the brightest and best, and *D. Borelli* does not differ much from this species. Several distinct species

have been recently introduced, and require very similar treatment. The Orchis family contains some very beautiful things. At the head of them stands *O. foliosa*, which should be grown in every greenhouse. The tuberous roots are repotted annually when at rest in the winter, loam, leaf mould and coarse white sand being the best potting soil. *O. maculata superba* is a very fine variety of the Meadow Orchis. I have seen it grown with truly handsome spikes of rich mauve and purple flowers, and the deep green leaves are purple spotted. The *Satyrums* from South Africa are distinct and handsome, and, like the Orchises, they die down in winter, and the tubers should be repotted when the plants are at rest. A little turfy peat, fibrous loam and sand suit them. Years ago I used to grow this plant well in a greenhouse. The *Cypripediums* are also very charming plants. They are mostly Canadian and North American, and are deciduous. The queen of them all is *Cypripedium spectabile*, which will grow out of doors in England, but I have always treated it as a greenhouse plant, and what a charming plant it is when well flowered. I grow it in fibrous peat with a little Sphagnum. I see clumps of it are at the present time advertised to be sold in fine condition. Drain the pots well and plant the clumps without dividing them. The flowers are rose and white, sometimes pale rose, at other times a very deep rose. *C. pubescens* is next to this as a useful greenhouse plant; the flowers are bright yellow and dull purple coloured. It requires the same treatment, and should be repotted annually before it starts to grow. For this I use fibrous loam with the peat. *C. Irapeanum* may be mentioned as a handsome species, far superior to *pubescens* in its bright deep yellow flowers, 4 inches or 5 inches across; it has been often imported, and by the appearance of the clumps it would seem to grow in marsh land. I have several times tried to grow it from plants imported direct, but have always failed to flower it more than once. Has any British gardener succeeded in establishing it? The Siberian *C. macranthum*, on the other hand, has done well with me as a greenhouse plant; so also has *C. Calceolus*. Others that grow and flower are *C. candidum* and *C. parviflorum*, but the pretty little *C. guttatum* I cannot grow even. All the above are well worth the most careful attention. There are other pretty little Orchids which may be grown in frames; most of them thrive in small pots in well drained, fibrous sandy loam mixed with nodules of limestone.

With the increasing warmth and bright weather we have had the plants seem to improve daily. For the last few days the sun has shone brightly, and the nights with a few exceptions have not been cold. We have for the last three or four days been repotting the *Cypripediums*. Some of the species are planted in fibrous peat and Sphagnum, others in equal portions of peat and loam; some seasons we have repotted them earlier. *C. Spicerianum* thrives best in loam, but as it requires abundance of water at the roots, the fibre decays during the twelve months, and becomes sour even with ample drainage. I use Sphagnum with the potting compost, and it is encouraged to grow on the surface. We also use a little fibrous yellow loam for the hybrids that have been raised from *C. Spicerianum*. The vigour and beauty of the foliage of *C. Leeanum* are pleasing to an Orchid fancier. Others that have been surface dressed or repotted are *C. Stonci*, *C. grande*, *C. Dominicanum*, and several other hybrids. In repotting or surface-dressing Orchids finish off the surface well; the pieces of peat must be alternately placed with Sphagnum in a live state, and intermixed with pieces of drainage and charcoal. Another point I always insist upon is to see that the plants themselves are thoroughly cleaned before repotting them. Wash the leaves well with a soft sponge, and examine the bulbs of all that have bulbs to see that no scale has made a home on them. Attend now very carefully to the watering of all Orchids starting to grow or in a growing condition. They are not so easily injured by over-dryness as Heath or other finely rooted, hard-wooded plants, but anything that is

likely to check the steady growth of a plant must be injurious, whether it is lack of water at the roots, or over-dryness in the atmosphere when it ought to be moist. The most serious of the ills that check the growth of Orchids and disfigure them to boot is the insidious yellow thrips working unseen in the yet undeveloped growths.

J. DOUGLAS.

FERNS.

PROPAGATING FERNS.

"DOODIA'S" remarks with regard to the advantages of young plants over old stunted specimens come at a seasonable time, the spring being the best time to commence operations either by division of old plants or by raising young stock from spores. The latter is the better method for all such as may be obtained in that way; but there are many of our most beautiful Ferns which do not mature their spores, and in some cases do not show any signs of producing them. These must be propagated by divisions or in some instances by bulbils, which are formed on the surface of the fronds.

In these notes I will deal with such as should be propagated by division, foremost amongst which is the beautiful *Adiantum Farleyense*. When breaking up large specimens, there is some risk of losing them, but if young plants which have not become pot-bound are taken, they may be divided into two or three, or perhaps more, and if potted straight away and put into a close frame, they will suffer very little and will soon start away again. This beautiful Fern is often grown under heavy shading. I find, however, that it will do better when more exposed to the sun and light. If potted in good porous loamy compost and liberally supplied with water, it will grow freely enough. It is perhaps hardly necessary to mention that it requires a stove temperature. I once saw some beautiful plants of *A. Farleyense* under rather unusual treatment. It was in the spring-time, and they were on a shelf in a house with a southern aspect and without any shading; the pots stood on a bed of growing Sphagnum Moss. The healthy condition of the plants and the lovely tint in the young fronds fully proved that the conditions were exactly suitable.

Any of the other *Adiantums* which have spreading rhizomes may be propagated in the same way, and it will be found that all those with the red tint in the fronds succeed best in a sunny position, while those of a more sombre hue delight in a shady position.

Many of the *Davallias* may be propagated by division, and sufficient stock kept up with little trouble. Most of the *Davallias* may also be raised from spores, but it is a slow process, and where only a limited number is required it is hardly worth the trouble. *Microlepia hirta cristata* is a grand Fern when frequently divided and grown in small pots, but larger specimens are not nearly so elegant. All the forms of *Nephrolepis* are much prettier when grown on freely from single crowns. Old specimens get too dense and do not make such fine fronds. As I have previously stated, the spring is the best time for dividing Ferns, but in the case of old stunted specimens they should first be potted on or surfaced, it being essential to secure a few new roots. In some instances where the crowns do not spread far, as in the case of some of the *Pterises*, some surface soil may be added and a little later on some of the outside crowns may be cut away with roots without disturbing the old plants much, and where it is desirable to preserve the old specimens this is an advantage.

Some advocate dividing Ferns while they are dormant, but my experience is that it is much better to do so after the spring growth is well started. Of course, it requires care, and they must not stand about to get withered, for if the young fronds get permanently damaged there will be no vitality left. After being kept close and shaded for a few days they may be gradually exposed to more light and air again. In potting the divisions

it is best to use small pots, and they can be potted on as soon as they are well established. In potting Ferns it is of the greatest importance that the crowns of the plants should be kept low enough for the new roots, which come from the base of the lower fronds to come into contact with the soil.

F. H.

A seasonable note.—Just now, when potting is more or less being carried on amongst all kinds of plants, a word of two may save some of the seedling Ferns which may be springing up here and there. In Orchid pots and baskets particularly will these be found. *Adiantums* in variety, *Pterises*, *Gymnogrammas*, *Aspleniums*, and other kinds will all prove useful. Seedlings which spring up spontaneously amongst other plants usually thrive well, and it is generally pretty easy to secure them with sufficient roots to ensure their safety. I have noted in some cases that the seedlings have come up so thickly in other pot plants as to quite cover the surface. These if taken in time will make capital little stuff for pricking off into pans if quite small or for potting singly if sufficiently large. In this way it is quite possible to keep up quite a young stock of Ferns that in due course would be far more serviceable than retaining so many old stunted plants. Where any seedlings are growing upon walls, by all means leave them alone in their position. Do not heedlessly cast aside young Ferns of any kind, more especially where any quantity is wanted for decoration. Their use will save many plants that take longer to become established.—G. H.

***Adiantum fragile*.**—A beautiful little specimen of this species comes to me from the Messrs. Birkenhead for a name. It is a singular and well-marked plant, which is found growing on calcareous rocks in Jamaica and in the island of Cuba. Specimens of this plant came into my possession now many years ago through Capt. Toppin, of the 5th West India Regiment, who brought me a lot of Ferns to name which he had collected in the West Indies. I have never before heard of it in cultivation. It is a very slender plant, with a wiry rachis and with very short stipes. It has the peculiarity of casting its pinnules, leaving quite bare stems, caused, I have no doubt, through inattention to watering.—W. H. G.

***Adiantum macrophyllum striatum album*.**—Messrs. Rogers, of Fern Bank Nurseries, Loddsworth, Sussex, send us some specimens of this Fern. The plant would appear to be a good robust grower and a decidedly handsome and highly decorative form of the old *macrophyllum*. We are not aware if its young fronds assume a reddish pink tinge as in the typical plant, never having seen it growing, but the mature fronds are broadly and regularly streaked with white, rendering it very handsome and distinct.

Ferns for covering walls.—Brick pockets are sometimes built in the walls for planting Ferns in, and in some instances these may be used with advantage, but it would entail some cost as well as trouble to re-build walls for this purpose, and it is hardly necessary, for on walls where there is sufficient moisture many of the Ferns with spreading rhizomes will, when once established, grow freely and eventually cover a considerable space. Many of the *Adiantums* and some of the *Polypodiums* also succeed well. For such as require more soil to root into some rough compost may be fixed to the wall by means of galvanised wire netting. Cork pockets may be made to hang against the wall, and many Ferns do well in these. All the *Platyceriums* may be recommended for growing in pockets, and when hung against a moist wall succeed better than when in a drier position. The *Davallias*, too, are almost all of them suitable for the purpose, *D. dissecta*, *D. Griffithiana*, *D. Mariesi*, *D. elegans*, *D. Tyermanii*, and similar varieties being the most useful. The *Nephrolepis* do better when the compost is fixed to the wall by means of wire netting. The varieties should be selected according to the space that can be given them. *N. pectinata* is the best of the smaller growing sorts. *N. exaltata* and *N. philippinensis* are also

useful. *N. davallioides* may be used where space is not limited. *Goniophlebium subauriculatum* is another fine Fern for growing against a wall, but requires a warm position. Under good treatment the long pendulous fronds are very effective. *Hypolepis distans* spreads very freely. *H. repens* may also be included. Many other Ferns might be added to this list, but the above will be found a useful selection. It requires a little care in arranging the different sorts, but with a little judgment a large space may be made very effective.—F. H.

TREES AND SHRUBS.

A FEW GOOD SHRUBS.

THE following shrubs are both very ornamental and quite distinct, while judiciously planted they afford a pleasing variety to the few common subjects which are repeated again and again in most gardens.

DEUTZIA CRENATA FLORE-PLENO.—Notwithstanding the fact that this *Deutzia* is easily propagated and a cheap plant in nurseries, a good specimen of it is not often met with, yet at its best it is really a very beautiful shrub. Apart from the beauty of the blossoms they are borne in the greatest profusion. It is not particular as to soil and situation, but succeeds best in a fairly deep open loam that is not dried up during the summer. As with many of the *Spireas*, this *Deutzia* is much improved by a little extra attention, for the trimming out of old and exhausted wood allows the younger and more vigorous shoots a better opportunity to develop themselves, which treatment results in finer blossoms. There are two well marked forms of this double *Deutzia*, and it is difficult to say which is the more beautiful. The first, known by the name of *candidissima plena* and *Pride of Rochester*, produces pure white blossoms, while the second has the outside of the petals deeply tinged with a kind of rosy purple. This feature is especially noticeable in the bud state, but it is also prominent in all stages of the flower. The variety in question is known as *rosea plena* and *extus purpurea*.

AZALEA ODORATA.—This possesses a plurality of names, for besides the above it is also known as *Azalea fragrans*, *Rhododendron azaleoides*, and *R. sub-deciduum*. It is supposed to be a hybrid between *Rhododendron ponticum* and one of the hardy *Azaleas*, and according to Loudon was raised about 1820. The flowers of this *Azalea* vary a good deal in colour, for in some they are very much of the hue of *Rhododendron ponticum*, while in others they are nearly white, and various intermediate shades of lilac and mauve are also represented among them. The leafage, too, is by no means uniform, that of some specimens being very much paler than others, and while a few of them are almost if not quite deciduous, the majority of them retain a good many of their leaves throughout the winter. A bed of this *Azalea* is a very beautiful object at a time when most of the hardy *Azaleas* are over. During sunshine the fragrance of the blossoms is very noticeable.

CYTISUS ANDREANUS.—Few plants, especially hardy shrubs, have advanced so rapidly in popular favour as this Broom, of which some thousands must have been sold by our nurserymen within the last few years. It is principally increased by grafting on to the common Broom, and the point of union being in most cases close to the ground, it may in planting be covered with soil, so that the graft will in time push forth roots of its own, and as the stock never produces any suckers, many of the objections to grafting do not apply in this case. As far as my experience extends, this variety cannot be reproduced from seed.

MAGNOLIA STELLATA.—This is one of the early flowering *Magnolias* and blooms about the same time as the *Yulan*, but, unlike that magnificent tree, this will flower freely when not more than a couple of feet high. It forms a numerous-

branched bush, while the flowers, which are each about 3 inches in diameter, are composed of several strap-like petals of a pure white. A small bed planted with this *Magnolia* and carpeted with the North American Partridge Berry (*Gaultheria procumbens*) forms a very pleasing feature, as the white flowers contrast with the bronzed leaves and bright red berries of the *Gaultheria*, while the surface of the ground being covered, the blooms of the *Magnolia* are not so liable to be splashed during heavy rains as they would be without something of the

rather spreading bush, clothed with beautiful light-coloured pinnate leaves, and about August is plentifully furnished with spikes of bright rosy-pink blossoms. In common with many leguminous plants, this *Indigofera*, from the deep-descending nature of its roots, will thrive in rather light sandy soils better than many other subjects.

RUBUS DELICIOSUS (the Rocky Mountain Bramble) is widely removed from any other Brambles. Its slender branches are clothed with Currant-like leaves, and the blooms resemble pure white Dog



Rhodotypos kerrioides.

kind. *Magnolia Halleana* is also another name for this species.

RHODOTYPOS KERRIOIDES.—The specific name of this is very appropriate, for it much resembles the well-known *Kerria japonica*, except that the blooms are larger and pure white, like single Roses. It is a native of Japan, from whence it was introduced in 1866, quite hardy, not at all particular as to soil, and will flower for months together.

INDIGOFERA FLORIBUNDA.—Though more tender than any of the preceding and often treated as a wall plant with satisfactory results, this *Indigofera* is very beautiful in the open ground, for even if cut down by the winter it quickly recovers, and not only grows away freely, but will flower towards the end of the summer. In the open it forms a

Roses. Like the last, this is often trained to a wall, and in such a situation it flowers profusely; as a shrub, too, in the open ground it usually blooms well. It has been introduced into this country for more than twenty years, but is still quite an uncommon plant in nurseries.

DAPHNIPHYLLUM GLAUDESCENS.—This differs from the whole of the above in being evergreen in character, and it must be regarded as a decidedly ornamental member of this class. It forms a sturdy growing, freely branched, rounded bush, plentifully furnished with foliage. The leaves are each 6 inches or 7 inches long and a couple of inches wide. The upper part of the leaf is of a delicate pale green, while the under surface is clothed with a bluish grey glaucescence. The bark

of the young shoots and the midribs of the leaves, as well as their stalks, are red. A variety of this last is jessoensis, whose leaves are smaller and more rounded, while the habit of the plant is dwarfer. This is rather more tender than the type, which is scarcely ever injured, even during severe frosts. T.

Fabiana imbricata.—This shrub, where only partly protected by a belt of shrubs, has suffered very much from the recent severe frost. Planted at the foot of a south wall and mulched with partly decayed leaves, it not only is safer, but the warmth from the wall encourages a fuller crop of its funnel-like blossoms. The finest specimen I ever saw was growing against a south wall, which had the extra protection of a glass verandah.—M.

Berberis Wallichiana.—The evergreen species of Berberis are (exclusive of the Mahonia section) by no means numerous, yet they include among their number two of our most beautiful flowering shrubs, viz., B. Darwini and B. stenophylla. While less showy than these two, B. Wallichiana is a very handsome shrub, quite distinct from any of the others. It forms a dense compact bush, freely clothed with large oblong-shaped leaves of a deep glossy green tint, while the light, clear yellow flowers are borne about the months of May and June. The berries which succeed them are of a purple hue, but, as a rule, they are not particularly numerous. While very ornamental throughout the year by reason of its handsome foliage, this Berberry is, of course, additionally so when in bloom, as the contrast between the deep-tinted leaves and the clear yellow blossoms is very marked. It is a native of the Himalayas, and was originally discovered by Wallich, but, I believe, introduced into cultivation by Messrs. Veitch through their collector Thomas Lobb. Unlike many plants from the same region, it is seldom affected by even our most severe winters. This Berberry is also occasionally met with under the name of B. Hookeri. In addition to the above-mentioned Berberis three other species may be noted. They are B. empetrifolia, remarkable as being one of the parents (B. Darwini was the other) of B. stenophylla; B. dulcis, a free-growing bush whose bright yellow solitary flowers are borne on very long stalks; and the curious B. congestiflora hakeoides, a sturdy growing bush, whose leaves, which are from 1 inch to 2 inches long, are roundish, of a stout coriaceous nature, and furnished with large conspicuous spines upon the margin. The flowers are of a golden yellow colour and crowded together in dense heads. It is widely removed from any other species of Berberry. All of the above with the exception of B. Wallichiana and the hybrid B. stenophylla are natives of the southern portion of South America.—T.

The Mexican Orange Flower.—There can be little doubt about the hardiness of Choisya ternata in most parts of England. My experience of it is that it is far more hardier than the Laurustinus. If it could be made to flower later than it does naturally, then it would be far more popular than it is, for very few shrubs are more easily cultivated than this, and it can be increased by cuttings very quickly. Its great fault, however, is caused by its precociousness in flowering, as in three years out of four its flower-buds are destroyed by late spring frosts. [This at least is the case here in Suffolk, and I have seen it lose its crop of flowers even in Cornwall by frosts and cutting winds. The buds are certainly very tender and susceptible to injury from these causes, so that it is but seldom seen in its best form out of doors, and there is but little inducement to plant it largely, except in very sheltered spots or in a mild climate. It grows freely, and its natural habit is good and well balanced.—J. C. TALLACK.]

Erica codonodes.—Here this shrub is not hardy, except where protected from north and east winds by Evergreens. We have several plants of it which have stood uninjured through the last six winters. The plants in question are growing close to the edge of a small piece of water, but are well protected by Rhododendrons, &c. Not more than

20 feet away were half a dozen others, but these being exposed to high winds the frost of 1890 killed them entirely. In the open this shrub is a long way from being hardy, which is a pity, as it is one of the few hardy subjects that flower twice every year—now, and again in October. Planted in peat and under the protection of a south wall or bank of shrubs it well repays a little extra labour. We have so few hardy trees or shrubs that flower in January, that those we have ought to be taken care of.—E. MOLYNEUX, *Swanmore, Hants.*

—In exposed positions this plant gets terribly disfigured by 20° of frost in Somerset. It must have a very sheltered place to be at all reliable. I would not think of planting it in the open outside of Devonshire. If I had a rather large unheated house to furnish I would use it there, as the fact that it blooms at mid-winter enhances its value. What it wants is protection from cold, cutting winds.—J. C. C.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY.

FEBRUARY 14.

THIS meeting was a very full one, being in the opinion of many the best ever held in February. Orchids were strongly represented, and that in good variety also, but the Cyripediums were the most *en evidence*. It is marvellous with what rapidity new forms of the Slipper family appear. In spite of the numbers of new hybrids the quality is well maintained, distinct additions appearing at nearly every meeting. The exhibition of New Holland plants and forced Lilacs with other early spring flowers also claimed a good share of attention, whilst the handsome hybrid forms of Amaryllis have thus early in the year made a good impression. Some few Chrysanthemums were also shown, and that in good quality. Of fruit there was a large display of Apples in an excellent state of preservation. The beautiful examples of home-grown Oranges were also much admired.

Orchid Committee.

The exhibits on this occasion were many, and the awards also more numerous than usual. First-class certificates were awarded to—

DENDROBIUM OWENIANUM (D. Linawianum majus × Wardianum, grand var.).—This is a lovely hybrid, having all the free characteristics of D. nobile, being of similar growth, but paler in colour, promising, however, to be equally as free flowering. Some five or six plants were shown, all being uniform in this respect. The lip is that of D. Wardianum in colour, the sepals and petals are coloured as in that species, but in form take after those of the other parent. A fine hybrid, raised by Mr. Norman Cookson, Oakwood, Wylam-on-Tyne. Exhibited by Messrs. Sander and Co.

CYMBIDIUM GRANDIFLORUM.—This is a species with remarkably fine flowers (as large as in Cattleya Trianae), with six to the one spike, and of fine substance. The sepals and petals are of a pale yellowish green shade, the lip being larger than in many species and nicely fringed, spotted towards the edges with brownish spots, and others of a crimson shade in the centre. A very distinct species. From Messrs. F. Ross and Co., Merstham.

PHALENOPSIS SCHILLERIANA VESTILIS.—This is a pure white variety and might fairly have been called "alba"; the foliage is that of the species, but the markings which distinguish it are not so well defined. One might almost surmise that it is a cross between P. Schilleriana and P. amabilis, the foliage being short and sturdy, as in that species. From Messrs. Hugh Low & Co.

PHAIUS AMABILIS.—This is a lovely hybrid (P. tuberculatus × P. grandiflorus). The sepals and petals resemble those of P. tuberculatus, being of a pale flesh colour, the lip having more of the latter parent's features and in colour a curious blending of pale brown, with purple towards the throat. The plant was a small one, but bore half-a-dozen

or so of fine flowers; with age it should be even finer. From Messrs. J. Veitch and Sons.

Awards of merit were given to—

CYRIPEDIUM WINNIANUM (C. Druryi × villosum), which has lustrous flowers of the colour of those of the latter parent, but brighter and more compact in form. It is a very charming hybrid of much promise. From Messrs. Veitch and Sons.

DENDROBIUM NOBILE AMESLE. in which the sepals and petals are of a French white, the lip being finely marked with a very dark velvety maroon spot in the throat and edged with white, the flower of the size of that of D. nobile. An imported species from Messrs. Sander and Co.

LÆLIA HYBRIDA MAYNARDI (L. pumila Dayana × Cattleya dolosa).—This has the dwarf habit of L. pumila, the colouring of the flower showing traces of C. dolosa very clearly, the lip of a rich shade of violet-crimson. From Messrs. Sander and Co.

CATTELEYA TRIANA (Hillingdon var.).—This has extra large flowers, the sepals and petals broad, the lip also broad and the colouring bright and distinct, a fine form. From Mr. W. Whiteley.

CATTELEYA TRIANA FLORENCE LE DOUX.—A distinct form with pale sepals and petals, the lip extra large, finely blotched with velvety crimson, another good variety. From Mr. Le Doux, East Molesey.

ODONTOGLOSSUM CIRRHOSUM (Le Doux's var.).—An extra vigorous form of this lovely Odontoglossum, the lip possessing a deeper golden blotch, whilst the individual flowers are large; it might have been majus. From Mr. Le Doux.

MESOSPINDIDIUM (COCHLIODA?) VULCANICUM GRANDIFLORUM.—A very fine variety with much larger flowers, and also of more vigorous habit, than the type, the individual blooms larger than those of Epidendrum vitellinum majus. From Mr. Le Doux.

CYRIPEDIUM CONCO-LAWRE (C. concolor × Lawrenceanum).—In this fine hybrid the form and markings of the flower are those of C. concolor, but the blooms approach those of the other parent in size, with veinings of its colour, but in a subdued form; the plant bore a twin-flowered spike. From Sir Trevor Lawrence, Bart.

Botanical certificates were voted to *Elia barbata* (Reich.) and *Diuris maculata*, two small forms of Orchids more interesting as curiosities than for their showy character. The latter has pretty yellow flowers, and is an introduction from Queensland in 1825. Both came from the Royal Botanic Gardens, Glasnevin.

Messrs. Sander and Co. had a choice group of various kinds, which consisted of *Phalenopsis Sanderiana*, one plant bearing a short spike of fine flowers of a rosy pink shade, suffused with violet; *P. Stuartiana*, a finely spotted variety; *Lælia anceps Schrederiana*, with very pure white flowers, having broad petals; one of the best forms. *Dendrobium* were represented by *D. nobile Ballianum*, a pale form; *D. nobile*, imported plants; *D. Leechianum*, much resembling *D. Ainsworthii*; *D. Sanderæ*, with white sepals and petals, the lip expanded and with a dark blotch of maroon. *L. Skinneri alba*, always a choice and much appreciated, as well as beautiful, Orchid, was represented by two plants bearing fine flowers; *L. Skinneri* was also represented by very fine forms, distinct in shading, *L. S. picturata*, very bright, and *L. S. leucoglossa*, with broad petals, being two good varieties. *Cyripedium Exul*, a variety with small, but distinctly marked flowers, and a good example of *Dendrochilum glumaceum* were also shown; also *Masdevallia Hincksiana* and *Arpophyllum spicatum* (silver Flora medal).

Messrs. B. S. Williams and Son had a large group of finely grown and well-flowered *Cyripediums*, remarkably vigorous and bearing large flowers for their kinds. These consisted of *C. Morganæ*, very fine in size and colour; *C. Williamsi*, with large blooms, having much of C. superbum, but devoid of the spots. *C. nitens*, shown in a basket in excellent condition, is a finely marked hybrid and very showy. *C. insigne* and *C. Harrisonianum* were shown in variety. *C. Leeanum*, *C. eury-*

andrum, *C. Sedeni candidulum*, *C. Meirax* and *C. Fitchianum* were also in good form; *C. selligerum*, rich in colour, and *C. Measuresianum*, with *C. Sallieri* and *C. Amesianum* were also included. Other things consisted of *Lælia harpophylla* and a fine form of *Cattleya Trianae alba* (silver Flora medal). Messrs. Hugh Low and Co. sent a beautifully flowered lot of *Phalænopsids*, chiefly *P. Schilleriana*, many with branching spikes of good size, the colour also good. *P. Schilleriana aurea* was also shown, and *Saccolabium bellinum*, making in all a very charming exhibit of well-grown plants (silver Flora medal). Messrs. Pitcher and Manda had a group of small plants of *Cypripediums*, consisting of several hybrids, *C. porphyrospilum* (Lowi \times venustum) being a very distinctly marked and pretty variety, as well as an unusual cross, *Odontoglossum Insleayi leopardinum*, with good spikes, *Cattleya Trianae* and *Odontoglossum Rossi aureum* were also shown here (silver Banksian).

Mr. G. Le Doux had also a small group consisting chiefly of good forms of *Cattleya Trianae*, the best of which were *Empress Frederick* and *Formosa*, the lip of the latter finely blotched with dark crimson; *Miltonia Roezli magnifica*, an excellent variety, was included (silver Banksian medal). Mr. Crispin, Fishponds, Bristol, sent a large boxful of cut *Cypripediums* in numerous varieties, amongst which *C. Haynaldianum* in fine condition, *C. calurum*, *C. vernixium*, *C. gemmiferum*, *C. Sallieri Hyeannum*, and others were shown (bronze Banksian medal). Mr. Ingram, Elstead House, Godalming, had *Cattleya Warocqueana alba* (Linden's var.), a pure white form. From Mr. E. G. Wrigley came *Cattleya Trianae alba*, a lovely variety with golden yellow blotch on the lip. Mr. Lucas, Warnham Court, sent cut blooms of *Dendrobium Wardianum album*, and plants of *Angræcum hyaloides*, a very small, but compact plant, and *A. polystichum*, with *Renanthera*-like growth, both bearing small white flowers, and the Warnham Court var. of *Cattleya Trianae*, the lip of which is its distinguishing feature, a rich velvety crimson colour. From Mr. White, Arddarroch, Dumbarton, came a small form of *Cattleya amethystoglossa*, and from the Royal Botanic Gardens, Glasnevin, *Dendrobium teretifolium* and *Epidendrum xanthinum*. Messrs. Veitch and Sons again showed *Epidendrum Endrosio-Wallisi*, a small, but most interesting Orchid; and from Mr. Winn, Selly Hill, Birmingham, came a hybrid *Cypripedium*, bearing an extra large flower, *C. The Duke* (*barbatum grandiflorum* \times Stonei). A few other cut examples were shown from various sources, but not specially noteworthy.

Floral Committee.

The work of this body was at this meeting comparatively light, the Orchid and the fruit committees having the greatest share of the labour. No first-class certificates were awarded, but awards of merit were made to—

AMARYLLIS HON. W. F. D. SMITH, a remarkably fine self, with extra large and finely formed flowers of an intensely deep vivid crimson, darker at the base; the plant bore two spikes, one only developed. From Viscountess Hambledon, Greenlands, Henley-on-Thames.

CHRYSANthemum BEAUTY OF CASTLE HILL (Japanese large flowering), with extra fine flowers, strikingly distinct and showy, the colour a golden yellow with bronzy yellow centre, the florets narrow, the form good. From Mr. Owen, Maidenhead.

Mr. Miller, Ruxley Lodge, Esher, had a beautiful mixed group of plants, consisting mainly of Orchids interspersed with a few other flowering plants. The Orchids consisted of good decorative kinds, *Cœlogyne cristata* being finely represented by well-grown and most profusely flowered plants, being of themselves quite a feature. *Phaius grandiflorus* was also well shown, the spikes strong, and carrying each an extra number of fine large flowers. *Calanthe vestita lutea*, bearing also good spikes, and *Cypripedium insigne* were also in good condition. Of other flowering plants, some beautiful examples of *Thyracanthus rutilans* were shown, with Lily of the Valley and

other early flowering plants (silver-gilt Flora). Messrs. Paul and Son, Cheshunt, sent a group of *Cœlogyne cristata*, small, but densely flowered plants, and profusely bloomed examples of the pure white Lilac Mme. Legraye, the best of all whites for forcing, and very free. *Alba grandiflora*, *Mathieu Dombasle*, a double Lilac, and *Abel Chateney*, a double white form, were also shown, but they did not show to such advantage as the first-named. *Lachenalia Nelsoni* in fine colour, with other kinds, was also staged here. Messrs. H. Low and Co. had a very attractive and showy group of early-flowering Cape and New Holland plants, embracing *Acacia lineata*, *A. cordata*, *A. rotundifolia*, and *A. Drummondii*; *Pimelea spectabilis*, *Eriostemon linearifolium*, *Correa cardinalis*, and *Chorozema Lowi*, their new variety, which blooms profusely in a small state. The flowers are of a brighter shade than those of any other kind (silver Banksian).

From the Hon. P. C. Glyn, Rooksnest, Godstone, came some superb cut specimens of *Acacia dealbata*, much finer than the imported examples; also several dozen cut blooms of *Camellias*, as *fimbriata* and *Countess of Dorking*, with other good old kinds (bronze Flora).

Messrs. E. D. Shuttleworth and Co., Peckham Rye, and Fleet, Hants, had a small group of such forced flowers as *Lilies of the Valley* and *Azalea mollis*, interspersed with *Dracæna Lindenii* and *Cocos Weddelliana*. With these were included some very good examples of early forced *Daffodils*, consisting of such good kinds as *Emperor*, *Ard-Righ*, *Sir Watkin* (extra), *Henry Irving*, very fine; with *obvallaris* (the Tenby), *rugilobus*, *bicolor Horsfieldii*, the double *Daffodil*, *Countess of Annesley*, *poeticus ornatus*, *Leedsii*, *Circe*, and *incomparabilis Cynosure*—in all a very attractive exhibit (bronze Flora). Mr. Chas. Turner staged a quantity of well grown and freely flowered *Cyclamens*, the plants of large size (bronze Flora medal).

Messrs. Cutbush and Son had a number of dwarf and profusely-flowered *Erica Wilmoreana*, very showy, and a lot of well-grown *Dracænas* of the narrow-leaved kinds, as *D. superba* and *D. elegantissima*, with *D. Sidneyi*, which has its foliage more recurved. Messrs. R. Veitch and Son, Exeter, showed two examples of *Arum sanctum palæstinum*, with dark maroon spathes; also *Asparagus retrofractus arboreus*, an erect growing form. Mr. Mortimer, Swiss Nursery, Farnham, Surrey, had a valuable decorative *Chrysanthemum* called *Golden Gem*, just the kind for cutting, being still very fresh and good. Mr. H. B. May showed a small basket of *Carnation Miss Joliffe* in good form. Messrs. J. Laing and Sons showed *Clivia Exquisite* with well formed flowers. Messrs. J. Veitch and Sons sent *Pandanus Baptisti*, a spineless species with graceful arching foliage, deep green in colour, with here and there golden stripes, a promising decorative plant. Several good and very vigorous forms of seedling *Amaryllis* came from Viscountess Hambledon's garden, all being of good quality and extremely showy from a decorative point of view.

Fruit Committee.

Some splendid collections of fruit, several lots of seedling Apples, and a quantity of Mushrooms and other vegetables were staged at this meeting.

An award of merit was given to—

APPLE STANDARD-BEARER, a variety above medium size, somewhat like *Lady Henniker* in shape, with firm, brisk flesh of good flavour. It was of a dull yellow colour, slightly tinged with red on the sunny side and russet on the reverse. It is said to be a heavy cropper. From Mr. W. H. Bannister, Cote House Gardens, Westbury-on-Trym, Gloucester.

Seedling Apples were sent by Mr. Clarke, Saffron Walden, and Mr. R. Maher, Yattendon Court, Berks. Some very fine Apples, grown within the five mile radius, were sent by Mr. Roupell, the varieties being *The Queen*, *Newton Wonder*, *Beauty of Kent*, *Prince Arthur*, *Melon Apple*, and *Baumann's Red Winter Reinette*. A very large collection of fruit in excellent preservation (100 dishes of Apples and six of Pears) was staged by Messrs.

Cheal, of Crawley. The fruits, remarkable for their beautiful colour and clear skin, were firm and of large size, and comprised the best keeping varieties. Among those noted for size, colour, and good quality were *Annie Elizabeth*, *Waltham Abbey Seedling*, *Winter Queening*, *Fearn's Pippin*, *Ribston and King of Pippins*, *Royal Russet*, *Bess Pool*, *Col. Vaughan*, *Swedish Reinette*, *Cox's Orange*, *Lane's Prince Albert*, *Mother Apple*, and the recently certificated new Apple named *Armored*, a great addition to our late keepers (silver-gilt Knightian medal). Mr. A. H. Smee, The Grange, Wallington, Surrey, sent seventy dishes of Apples of distinct varieties. This was a very fine collection, and included some kinds rarely exhibited, the best dishes being *Bismarck*, *Golden Noble* (very fine), *Lady Hayes*, *Ramborough*, *Beauty of Kent*, *Jubilee*, *Annie Elizabeth*, *Baumann's Red Winter Reinette*, *Pearson's Plate*, *Court Pendu Plat*, *Wealthy*, *Wadhurst Pippin* (very fine), *Caroline*, *Sandringham*, *The Queen*, and others (silver-gilt Knightian medal). Messrs. Rivers and Son, Sawbridgeworth, sent thirteen distinct varieties of home-grown Oranges and one dish of Citrons, with a very fine lot of Apples. The Oranges were staged in beautiful condition, being specially bright and clean with foliage attached. The varieties staged were *St. Michael's*, the *Variegated Orange*, *Seville*, *Maltese Oval*, *White Orange*, the *Long Orange*, *Maltese Blood*, *Pernambuco*, *Silver Orange*, &c. Among the Apples were some noble fruits of *Wadhurst Pippin*, *King of Tompkins County*, *Buckingham*, *Nancy Jackson*, *Tower of Herts*, *Jacquin*, *Bismarck*, *Cox's Orange*, *Reinette dorée de Henogen*, *Belle de Boskoop* and a very fine dish of *Passe Crassane Pear* (silver-gilt Knightian medal). From Lord Foley's gardens (gr., Mr. Miller), *Ruxley Lodge*, were sent numerous varieties of Apples, including good *Blenheim Orange*, *Claygate Pearmain*, *Cellini Pippin*, *Minchal Crab*, *Beauty of Herts*, several dishes of *Pears* and a basket of *Black Alicante Grapes*, with some pots of *Strawberries* in bloom (bronze Knightian medal). Mr. Miller also sent several lots of *Peach wood* in bloom from the open walls to show earliness of season, also a dish of *Mushrooms*. A box of *Peaches* was staged from the *Cape Fruit Syndicate Co.* These were flavourless and undersized. A quantity of *Mushrooms* was staged of excellent quality, those from Mr. Hardy, Ash House, Parson's Green, S.W., being very fine and of great substance. Mr. George, of Putney, and Messrs. White, Camberwell, showed excellent dishes. Messrs. Laxton, Bedford, sent *Laxton's Chou de Bedford Broccoli*. This was considered too coarse to find much favour, being somewhat like a large Cabbage. A very good lot of *Witloof Chicory* was sent; this was nicely blanched and not at all bitter, thus showing its value either as a salad plant or for cooking as a vegetable. It had been grown in the society's gardens at Chiswick.

Annual Meeting.

The general annual meeting was held at the society's offices, Sir Trevor Lawrence in the chair. The secretary read the minutes of the last meeting, and the report, having been handed to the Fellows present, was taken as read. Forty-seven new candidates were elected. A hearty vote of thanks was passed to the three members vacating their seats at the council—Baron Schroeder, Rev. W. Wilks and N. N. Sherwood. Messrs. A. Sutton and Laing were appointed scrutineers of election of new members of council, Sir J. T. Llewelyn, Bt., the Hon. W. Rothschild, and J. T. Bennett-Poë being declared unanimously elected. The retiring officers were all re-elected. The chairman stated the year just closed had been one of steady progress and good work. The Temple show was very satisfactory, and the conferences at Chiswick on fruits and Begonias were encouraging. The meetings at the Drill Hall were much better attended and had given great encouragement. With regard to the work done at Chiswick in the way of testing vegetables and fruits, much good had been accomplished. As far as the proceedings of the society were

concerned, the country members now got full value, as they were kept fully informed of the society's doings by the journal. The conifer conference report was a valuable book, and enabled Fellows at a distance to reap the benefits of the work of the society. This work necessarily causes the society a large outlay, and this brought him to appeal to the Fellows to get a larger number to bear the strain. The loss of Fellows was also to be taken into account, and though there was an increase of 206 Fellows, there was only a slight gain in the amount brought into the society. Last year the large vinery needed extensive repairs, this alone absorbing £386, including new boiler. Had this not occurred, the balance would have been on the right side of the year's total, but for some time less would be needed, as most of the buildings were now in a fairly good state of repair except two old houses they did not require and which would be removed. The report furnished to Fellows gave full particulars as to expenditure, and it would be found the work had been done very economically. With regard to the scheme for examination of students in horticulture, 72 candidates presented themselves at Chiswick, and they now had the promise of three scholarships of 10s. a week for three years from the Company of Gardeners, and hoped to get more from the Government in due course and to extend the work. Chiswick had done good work at a net cost of £1514, including repairs. Their thanks were due to the gentlemen who read papers at the various meetings, and he anticipated the papers promised for this year would prove equally interesting. He then called on Professor Foster to move the resolution concerning the secretary, Rev. W. Wilks, that in future he be a paid officer of the society. This was seconded by Mr. Hudson and carried unanimously. Sir F. Lawrence, in referring to the Chiswick Gardens, spoke of Mr. Barron's good work and the excellent way he conducted the affairs of the society.

NATIONAL CHRYSANTHEMUM SOCIETY.

The general committee of this society held a meeting at Anderton's Hotel, Fleet Street, on Monday evening last, Mr. R. Billantine being in the chair.

After the minutes of the preceding meeting had been read and confirmed, the secretary announced that Sir Edwin Saunders would not be able to take the chair at the annual meeting next Monday, and it was resolved to ask Mr. H. R. Williams, one of the society's vice-presidents, to occupy that position. It was resolved to have the society's form of certificate reduced by process and printed for the purpose of adapting it to commendations and votes of thanks for exhibits staged at the meetings of the society.

An interesting letter was read from Mr. J. Earland acknowledging the receipt of the silver-gilt medal awarded to him for the frozen Chrysanthemums he sent from New Zealand last autumn, and giving some account of his work in the raising of new seedlings. The chairman announced that the two stands of frozen prize blooms which the N.C.S. had decided to send out to New Zealand as a reciprocal exhibit would be despatched by steamer on the 24th inst. The special prize fund, without counting cups and medals offered by friends of the society, now amounts to £128 14s.

The draft report and financial statement which will be presented to the annual meeting were then discussed and agreed. The past year promises to be a very successful one, but the actual figures cannot yet be ascertained, as some important items may yet come in before the auditor's work is finally concluded. Eleven members and four Fellows were elected, and three societies affiliated, including one in Ireland, viz., the Dalkey, Killiney and Glenageary Chrysanthemum Society.

Votes of thanks to the chairman and the secretary brought the meeting to a close.

United Horticultural Benefit and Provident Society. The monthly meeting of this society was held at the Caledonian Hotel, Adelphi Terrace, Strand, on Monday evening last. Seven new members

were elected, and one other nominated. Two members only are on the sick fund. The annual meeting will be held at the above hotel on Monday evening, March 13, at 8 o'clock. Mr. Arthur Veitch has kindly consented to preside.

Gardeners' Orphan Fund. I have the pleasure to inform you that Baron Ferdinand de Rothschild has kindly consented to preside at the annual dinner of the Gardeners' Orphan Fund, on Wednesday, March 22, at St. James's Hall, Regent Street.—A. F. BARRON, *Hon. Secretary.*

The Gardeners' Royal Benevolent Institution.—As an instance of what local societies are able to do in aiding the gardening charities we are asked to mention that the Reigate and District Chrysanthemum Society has remitted to the Gardeners' Royal Benevolent Institution no less a sum than £136 10s. during the four years it has been established, and has thus been the means of nominating thirteen of its members as life members of the institution. Mr. James Brown, the indefatigable honorary secretary of the Reigate Society, expresses a hope that kindred societies, if able, may be induced to do likewise, and thus not only add to the funds of an excellent charity, but also benefit their own members by conferring upon them, as funds permit, the privileges of life membership of the institution.

ANTHRACITE COAL AND GARDEN BOILERS

IN the absence of fuller information it is not possible accurately to determine why "G. C. L." (see page 98) has failed with the above named coal, which I consider the best for horticultural purposes generally. The suggestion to remove the boilers to such a distance is a serious item, and one which I should myself consider long and well before deciding upon. Of course it is not impossible by any means, for there are many places where the boilers are situate at far greater distances and do their work well, but the seriousness lies in the fact that the cost would be nearly doubled for maintaining the heat as before. For some years past I have used anthracite, and I always speak of it in the highest terms. One large saddle boiler in particular happened to be so arranged by working in conjunction with others, that the flue had to cross a roadway 10 feet or more before it reached the chimney. This flue, moreover, was nearly level, but with a chimney-stack 16 feet high anthracite coal was a perfect success, the boiler itself being merely covered with iron sheets to throw off the wet. In the early part of 1891, with bitter cold wind blowing day and night (it happened in the month of March), I have recorded in my diary the fact that it burned for twenty-one hours, and maintained a splendid heat without any interference. In other words, it was made up under my personal supervision at 5.30 p.m., and was not interfered with till 2.30 p.m. the following day, and would have easily gone to twenty-four hours had it not been severe weather at the time. I continued this test for some days purposely to convince a stoker that anthracite could be burnt in that particular boiler. The size I prefer to use is about that of a 2-lb. loaf of bread, as I have found that the more open the fuel lies in the fire-box the better for combustion generally. Draught, then, I consider an all-important point, and in places where it can be done, I would much prefer 25 feet or 30 feet for a stack than one at 16 feet, because the damper will do the rest. Anthracite coal will not stand poking, neither does it require it, provided always you make up your fire with clear bars and then allow it to burn quite low again before recharging it. The fire that I record above as lasting twenty-one hours was never touched with a poker the whole time, and when eventually it was cleaned it was done more by pushing the embers to and fro with a strong iron hoe along the bars, which cleared them sufficiently to go on again as before. At a certain heat this coal has the peculiarity if interfered with of breaking up precisely as lime does in the process of slacking, and if interfered with much while in this state it quickly becomes a dead black mass. If left alone it will steadily

burn and consume almost every atom, and a fire that will burn steadily for such a time cannot do aught else but maintain a steady uniform temperature. Only a week or so since an instance was brought before my notice of a nurseryman having a fire of anthracite which lasted for nearly three days; the boiler was not in active use, and the fire was merely kept going for the purpose of keeping it dry; hence it was charged with anthracite and, the damper pushed nearly home and the weather being comparatively mild, forgotten, but being required a few days after, the proprietor was surprised to find fire still remaining, so that its lasting properties seem almost endless. I have successfully employed anthracite in varying forms of boilers. There are, of course, differences in the coal itself, and what I find best is that known as the "big vein"; this is very satisfactory, while "cobblestones" are just the reverse. By using anthracite night stoking can be entirely dispensed with, combined with which is the satisfaction of a good heat being maintained and a good fire still remaining to work upon; the saving, too, of labour is considerable, so that even if the coal in some districts is the most expensive, I believe it would be equally cheap all round in the end. Another point, it is smokeless, and has not those overwhelming sulphurous fumes attending the use of coke. The ashes and clinkers also are reduced to a minimum, a proof that the greatest amount possible is obtained from the coal. It is to be hoped that "G. C. L." may yet see his way to overcoming his difficulty in the existing stokehole with perhaps a few needed alterations. E. JENKINS.

Hampton Hill, Middlesex.

NOTES OF THE WEEK.

Early-flowering Irises.—Three others of the early-flowering Irises have stood the late winter at Oakwood. *Iris Bakeriana* is in fine flower, and *I. histrio* and *I. histrioides* are in large bud. The only protection when growing that they have had was a few Oak leaves. When the flowers open they have a glass over them when the weather is trying.—GEORGE F. WILSON.

Chinese Primulas.—Messrs. Veitch send us a gathering of flowers of their strain of Chinese Primulas, many of them being remarkably fine and showing a decided advance in this favourite winter flower. Some of the semi-double varieties are very good. All the single sorts, ranging from rich crimson to pure white, have flowers of great substance, while at the same time they are large and of good form.

Coccocypselum discolor may be made note of as an interesting stove plant for a basket. It produces ultramarine-blue berries, very rich against the small deep-coloured leaves. An ordinary basket will suffice, and this should be lined with Sphagnum Moss, the soil being composed of equal parts loam and peat, mixed with sufficient sharp silver sand to keep it porous. It is a native of the mountains of Jamaica. There is a specimen in the stove at Kew.

The Glory of the Snow (*Chionodoxa Lucilae*) is a beautiful thing to grow in pots. It may be readily grown in this way, and home-grown bulbs should be selected, as when collected, it sometimes happens that bulbs of *Scilla bifolia* get mixed with those of the *Chionodoxa*. They are similar, but it is disappointing to get such a mixture. The bright cheerful blue colour of the *Chionodoxa* makes it of special value for this purpose. *C. sardensis* is also useful, the flowers of the richest blue.

The weather in New Orleans.—This is the coldest winter we have had in New Orleans for a long time. We have had 7° to 8° of frost, which destroyed a few of the Palms out of doors, *Phoenix reclinata* principally. *Phoenix canariensis* and *dactylifera*, *Latania borbonica*, *Rhapis flabelliformis*, *Cocos australis*, and *Brahea filamentosa* have not suffered, with the exception of some of the

outer leaves being scalded by the sun striking them while the frost was on them. *Seafortia* elegans stood 4° of frost last year; also *Cocos plumosa*. This year the *Seafortia* was killed. I do not know how the *Cocos plumosa* has done. We have had snow here only twice in fifty years.—C. R. PANTER, *New Orleans*.

Carnation Miss Joliffe Improved.—I must say another word in favour of this useful Carnation, which, in spite of all the bad foggy weather we have experienced, is now flowering freely with me. It was some time before I could feel convinced that plants which I had seen were any other than well cultivated examples of the old form, but after growing it myself, I must say I never had the old variety in such good condition at this season of the year, either with regard to quality or number of flowers.—H.

Hyacinthus azureus is one of the most charming of early spring flowers. It is known also as *Muscari azureum* and *M. lingulatum*, the plant doing well against a warm sheltered wall. The flowers are of great beauty, quite bell-shaped and of a beautiful azure-blue colour. It is always well to protect the blooms, and even leaves for that matter, by placing a line of coal ashes or similar material round the plant to prevent slugs from devouring them. Slugs are extremely partial to both foliage and bloom.

Seedling Clivias.—I am sending you blooms of my seedling *Clivias* similar to the group which I exhibited at the R.H.S. show last March. Grouped with Palms or in vases, *Clivias* are most effective for mid-winter or spring decoration. Of easy culture, lasting long in bloom, they merit more extensive cultivation.—P. DAVIDSON, *Iwerne Minster Gardens, Blandford*.

*** Flower-heads remarkably large and the colours good, but we cannot see any advantage in naming every sort, seeing that in the case of many there is so very little difference in the shade.—ED.

Gardens at Cannes.—In a recent letter Sir P. Currie writes to us of the gardens at Cannes: "The prettiest things in the floral way at Cannes were the common *Roses de Bengale*, which were rampaging all over the place, and falling in great festoons from the terraces. I like the terraced Olive grounds much and the blue-green shade where the *Anemones* and *Violets* will soon be making a lovely carpet. The sustaining walls built without any cement or mortar put our builders to shame, but it is perhaps the absence of severe frost that alone makes them possible. One has a surfeit of Palms at Cannes. The place has, I think, been spoilt by sweeping away the beautiful old Umbrella Pines and Olives, and filling every corner with those cabbage-like exotics. A tall Palm in a landscape is lovely, but the shorter varieties, crowded as they are, are quite uninteresting."

*** It is too often the rule to neglect or forget the native things of the spot. We remember with pleasure the few gardens in the Riviera where the fine Heaths of the district and the native trees and bushes were preserved. The gardens in the Riviera have a very hard look from the prevalence of plants for which the country is not really fitted.—ED.

The flowers of Siberia.—Can anyone tell us anything of the flora of Siberia? Although for the most part a frozen desert during the winter season, yet it is by no means a flowerless waste during the hot days of spring and summer; indeed, travellers now and then tantalise us with their praises of the flowers which spring up soon after the snow melts away. For example, in Sir John Lubbock's recent volume, "Beauties of Nature," in the introduction at page 28, he tells us that "M. Patrin, on coming down from the frozen heights of the Altai, came suddenly on a view of the flowery plain of Obi"; and the description goes on to say that the plain was "green only in places, and for the rest covered by three flowers—the purple Siberian Iris, the golden *Hemerocallis*, and the silvery *Narcissus*—green, purple, gold and white as far as the eye could reach." Is the Iris

referred to *I. sibirica* or is it *I. lævigata*, now believed to be the wild parent of the *I. Kämpferi* of Japanese gardens? Most of the Day Lilies, or *Hemerocallis*, extend from N. Europe through Siberia to Japan, but to what species the "silvery *Narcissus*" can belong completely puzzles me, and I shall be glad of any practical information.—F. W. BURBIDGE, *Dublin*.

Lachenalia Nelsoni.—In a small group of *Lachenalias* exhibited at the Drill Hall on Tuesday last, E. Nelsoni was by far the finest, surpassing in beauty *L. aurea* and the other forms shown with it. It is strange that such a beautiful flower as *L. Nelsoni* does not become more common in gardens, but one seldom sees it, although most useful at this season of the year. The good work accomplished by the late Rev. John Nelson in the raising of hybrid *Lachenalias* is well known, and *L. Nelsoni*, appropriately named after the raiser, is unquestionably his greatest triumph. A coloured plate of it, together with some others, was given in THE GARDEN, July 17, 1880, and an interesting note from Mr. Nelson concerning this hybrid appeared in the issue of February 5, 1881. At first it was considered too close to *L. aurea*, but there is no question as to its absolute distinctness and superiority over that type. The flowers of *L. Nelsoni* are large and rich golden yellow in colour, sometimes touched with green, which, however, does not detract from their beauty, whilst they are borne on strong scapes. The growth is free and robust. Well-grown plants will bear scapes carrying nearly twenty flowers, which stand out boldly from those of the other *Lachenalias*.

PUBLIC GARDENS.

Park at Stockton-on-Tees.—The new public park at Stockton-on-Tees, which it is hoped that the Duke of York will open in due course, is a fine open space lying between Stockton and the picturesque little village of Hartburn. For many years the ground was cut into grass fields, through which ran a public footpath connecting Hartburn with the town. The whole neighbourhood is now wonderfully improved, and quite a colony of charming villas has sprung up in the vicinity of the new park.

An open space for Clerkenwell.—The London County Council have in trust £10,000, received from the Treasury in lieu of the reservation as an open space of a portion of the site of Cold-bath Fields Prison, now entirely utilised for parcel post purposes. The Clerkenwell Vestry suggests that this money should be used in the acquisition, as an open space "for ever," of a vacant plot of land abutting upon Rosebery Avenue and opposite the New River Head, Sadler's Wells, which is now opened out to the public view. The ground in question is owned by the County Council.

The weather in West Herts.—During the past week the weather has been very changeable; the most noteworthy feature, however, was the violence of the wind after such a long period of calm weather. Throughout Thursday, Friday, and Saturday in last week the wind remained singularly high, and often rose to the force of a gale—direction south-west to west. Rain fell on each day of the week, but to the total depth of less than half-an-inch.—E. M., *Berkhamsted*.

RAINFALL IN 1892.

I SEND you, as in previous years, the rainfall record of Belvedere House, West Meath, and Belvoir Castle, Grantham. Both places have much the same relative positions. The fall in Ireland is much in excess of that in Lincolnshire, as during the first eight months of the year that county suffered greatly from drought. There is one peculiarity in the two records, both of which have been accurately kept. While the rainfall at Belvedere is more than 12 inches in excess of that at Belvoir, the days on which rain fell are less by 16 than at Belvoir. One thing surprised me this

year in Ireland: While it was a disastrous year for all fruits, and, as a rule, for many kinds of herbaceous plants, the *Roses*, especially the *Tea* varieties, at least in my garden, were quite up to the average. I have come to the conclusion that *Tea* *Roses* adapt themselves remarkably well to the Irish climate, and should be largely planted.

BRINSLEY MARLAY.

BELVEDERE, WEST MEATH.

SEVERE, WEST MEAD.			Number of days on which .01 or more fell.
Month.	Total depth.	Greatest fall in 24 hours.	
	Inches.	Depth.	Date.
Jan. ...	1.65	.26	21 14
Feb. ...	2.61	.56	7 17
March ...	.69	.32	14 6
April ...	1.31	.36	24 13
May ...	5.25	1.20	26 17
June ...	2.92	1.56	9 10
July ...	3.79	1.14	2 12
Aug. ...	7.56	1.53	7 19
Sept. ...	3.74	.64	2 16
Oct. ...	2.61	.80	14 15
Nov. ...	3.92	.59	17 20
Dec. ...	1.91	.27	8 15
Total ...	37.99		174

—JAMES BAYLISS.

BELVOIR CASTLE, LINCOLNSHIRE.

<div> <div></div> <div> </div> </div>			Number of days on which .01 or more fell.	
Month.	Total depth.	Greatest fall in 24 hours.		
	Inches.	Depth.	Date.	
Jan. ...	1.24	.25	11	19
Feb. ...	2.05	.52	15	17
March ...	1.36	.32	16	17
April ...	1.13	.27	28	13
May ...	2.47	.63	4	14
June ...	2.77	1.56	29	18
July ...	1.84	.70	20	11
Aug. ...	1.55	.28	24	14
Sept. ...	3.05	1.25	21	17
Oct. ...	5.92	1.48	3	24
Nov. ...	1.18	.24	5	16
Dec. ...	0.91	.28	9	10
Total ...	25.49			190

—WILLIAM INGRAM.

Names of plants.—*Jules*.—1, *Correa cardinalis*; 2, *Acacia platyptera*.—*W. W.*.—1, *Zygopetalum intermedium*; 2, *Cattleya Trianae*; 3, a good coloured *Lælia anceps*.—*Odonto*.—1, *Odontidium Phalenopsis*; 2, *Odontoglossum Andersonianum*, ordinary form; 3, *Odontoglossum crispum*, extra good; 4, *Odontoglossum Edwardi*.—*C. X.*.—1, *Cattleya chocoensis*, dark form; 2, *Odontidium curtum*; 3, *Cypripedium politum*, good bright flower.—*J. Seebright*.—1, *Calanthe Regnierii*; 2, *C. Sanderi*; 3, *C. Stevensi*.—*W. Harding*.—*Billbergia nutans*.—*E. Castle*.—1, *Cattleya Trianae*; 2, *Odontoglossum Edwardi*.—*C. R. Panter*.—Your tufted *Pansy* is probably *Abercorn Gem*.—*R. H. S.*.—1, *Conoclinium lanthirum*; 2, *Celsia cretica*.—*Harry Buckley*.—Forms of *Helleborus orientalis*.

"The Garden" Monthly Parts.—This journal is published in neatly bound Monthly Parts, in which form the coloured plates are best preserved, and it is most suitable for reference previous to the issue of the half-yearly volumes. Price 1s. 6d.; post free, 1s. 8d. Complete set of volumes of THE GARDEN from its commencement to end of 1892, forty-two vols., price, cloth, £30 12s.

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All of our readers who are interested in the improvement of cottage homes are invited to help us to make *Cottage Gardening* known. It is published at the very lowest price to meet the wants of those for whom it is intended, and copies will be sent for distribution, free, by the publishers, Messrs. Cassell and Company, La Belle Sauvage Ludgate Hill E.C.

No. 1110. SATURDAY, February 25, 1893. Vol. XLIII.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare*.

CHRYSANTHEMUMS.

SEEDLING CHRYSANTHEMUMS.

RAISING seedlings is the latest phase in the craze anent Chrysanthemums and their culture. Very few English growers probably have as yet saved their own seed, though I have no doubt the advice that has recently been given by that expert, Mr. C. E. Shea, on the subject will start numerous enthusiasts growing flowers specially for the purpose of giving either pollen or being fertilised with a view to saving seed. Personally I am of opinion that it is somewhat late in the day to start seed-saving, as it is possible to raise hundreds of seedlings and yet not one of these be either distinct enough or of sufficient value to warrant its preservation. Unfortunately, it will be a difficult matter to persuade many raisers that their geese are not swans, or, in other words, that the seedlings they have expended so much trouble on are either synonymous with others already in existence or of inferior merit altogether. The floral committees who have to adjudicate on the merits of new varieties of Chrysanthemums have during the past three or four seasons been inundated with novelties, but that is nothing to what is before them. In all probability, thanks to the introduction of American saved seed, and which was very well advertised, the majority of Chrysanthemum enthusiasts started raising seedlings for the first time last season, and seeing that it requires at least two years to fully test the varieties thus raised, not till next autumn will they be presented for certificates. According to Mr. Shea's experience, a very small percentage of seedlings raised from American seed is worth saving, for the simple reason that it has been largely saved haphazard; whereas if the crossing and fertilising generally had been carried out in a more careful manner, only the very best varieties being selected for the purpose of seed-saving, the greater portion of the seedlings resulting would be of some value. It may perhaps prove that Mr. Shea has scarcely done justice to the American growers who are supplying us with seed. They may have taken more pains in their selection of varieties to operate upon than he gives them credit for, though it may be they have not quite all the newest and leading varieties at their disposal.

One thing is very certain: the seed is very sound, mine that I sowed last February germinating very freely, suspiciously so in fact, choice seed as a rule not being remarkable for its germinating power. It was sown in a pan and treated much the same as we would treat Asters that might be wanted early, and the seed germinated nearly as quickly and surely. Nor were the seedlings as a rule slow in forming their first rough leaves or slugs backward in finding them out, and had not a close watch been set, all would have disappeared in one night. When fairly strong the plants were placed singly in 2½-inch pots and kept in gentle heat and not very far from the glass till they well recovered from the check given in removal. They were next located on a swing shelf in a greenhouse, and before becoming root-bound the majority

were shifted into 5-inch pots, near the glass in a pit with a little warmth being the next move. From the first, some grew strongly, others only moderately so, while a few were extremely feeble. These last never got beyond 6-inch pots and had such a sickly yellow hue, that at last they were pitched on the rubbish heap, there being no room for invalids amongst our Chrysanthemums. The very strongest were eventually shifted into 8½-inch pots, and the others were given ordinary 8-inch pots. All were duly staked and placed in the open with the rest of the plants being grown for producing large blooms. Most of them branched very late, the buds being taken mostly in September and October, while some few did not branch sufficiently early, and were made to flower at the first break. Those that opened in November, and which I need hardly add were some of the best plants, proved to be either single or semi-double varieties, and not to be condemned on that account. Others gave promise of being somewhat distinct; one in particular has quilled florets, the colour being pink; while about a dozen were destroyed very quickly after we saw what wretched mongrels they were. The gem of the batch flowered in January and belongs to the hairy section, being in the way of Louis Böhmer, only of a much more pleasing shade of pink. Unfortunately, the description of W. Falconer, a sport from Louis Böhmer, agrees only too well with the appearance of my seedling, and I shall be agreeably surprised if the latter ever obtains a certificate or any other distinctive mark of favour. All the same, eight strong plants have been raised, and a good trial will be given it before wholly discarding it. Another very sturdy grower bears some resemblance to Edwin Beckett, and this, again, will be taken care of for a time.

From the foregoing it will be gathered that raising seedlings, when once the seed is obtained, is a very simple proceeding and also a tremendous lottery. There is no difficulty worthy of being termed such in raising and flowering the plants, but will the raisers generally have sufficient discernment to decide which are worthy of being given a second trial and which shall be thrown away? If they are not sufficiently strong-minded, the chances are the place they are in charge of will be stuffed up with worthless varieties, these greatly interfering with the work of growing the very best forms in quantity and to perfection, and so be the means of inflicting loss instead of being a source of gain and credit, as fondly imagined at the outset. If there is ever likely to be any great demand for fine blooms in January and February, this ought certainly to give an impetus to seed-saving, as seedlings from midseason and naturally late varieties would appear to be at their best during those months. What is wanted is reliable seed saved especially for producing late flowers, and quite a grand display might be made during the months named.

W. IGGULDEN.

Chrysanthemum Ada Spaulding.—This variety is very useful for its late blooming qualities, and this circumstance will doubtless prevent it from being completely discarded, though it must certainly be included among the disappointing kinds. Previous to its being distributed in the spring of 1890 it was announced as a variety of the incurved section that had taken high honours in America, and an illustration of it represented as truly an incurved flower as one might wish for. It is now catalogued by the National Chrysanthemum Society as a Japanese incurved, which is certainly its true place, as the blooms are much too rough to be included with the true incurved varieties.

The colour of the flower is white, the lower half tinged with pink. Being a good late bloomer, it will no doubt be fairly useful in this way, though the colour is not particularly decided. That it was so much overpraised previous to being sent out doubtless told heavily against it when it first flowered, as a feeling of disappointment at seeing it would be quite natural. The blooms, however, keep wonderfully well even in the depth of winter. —T.

CHRYSANTHEMUMS ON WALLS.

Now is a good time to either put out fresh plants or renovate those already growing at the foot of south or east walls. Many of our plants have done duty for the last eight years, but last season the display was not equal to that of former years, the plants not having grown freely enough to reach the top of the wall. This I attribute to their having exhausted all the nutriment from the soil. I have removed the whole of the soil 18 inches wide and 15 inches deep, loosening the subsoil, which is heavy, cold, and tenacious; the trench I have had filled up with road-scrappings and parings freely mixed with leaves. To this half-decayed horse manure is added rather liberally, the compost being used in a rough state, so as to remain porous for several years again. Some of the most promising plants have been replanted into the fresh soil. Those sorts that are somewhat old and could not be replaced I was compelled to keep; they are still quite the best for this mode of culture. I allude especially to the Christine family. The plants are put out two to the yard. In cases where they are not strong plants my plan is to put out a yard apart two of the large-flowered sorts, filling in with a single-flowered or a pompon variety. All the parts of the wall are covered by this plan. A thin mulching of light manure is placed about the plants to protect them from late frost and to prevent evaporation during the early part of the summer.

Those who have not already adopted this method of securing a crop of flowers when the bulk of the inside blossoms is past would do well to utilise their old roots for the decoration of any bare walls with an aspect similar to that named. Last year I was enabled to cut really useful blooms the second week in December. As to variety, almost any sort will succeed except the large-flowered incurved kinds; these, by the natural formation of their florets, retain the wet, and for this reason they are not so serviceable as those with reflexed or imbricated petals. Japanese of the reflexed section can especially be recommended. Pompons not only flower abundantly, but last a long time in good condition; the colours, too, are bright and varied. The old stools that flowered in pots last season are much superior to plants raised from cuttings this year; they have so many more shoots starting from the base as compared with those raised from cuttings. Even from them many shoots will require removing; if all are allowed to grow they would weaken each other by overcrowding. The idea should be to have the entire wall hidden with the foliage and flowers of the Chrysanthemums. E. M.

Chrysanthemum New Year's Gift.—As a late flowering variety this flat-petalled Japanese sort is promising. The florets are broad and quite flat, slightly pointed. The colour is pure white, except in the centre, which is lemon, gradually changing to white as the florets unfold. E. M.

Specimen-trained Chrysanthemums are perhaps not quite so much seen at exhibitions now as they were a few years since; still, there are many grown, although of little use for conservatory decoration, except in extra large buildings. These must of necessity be dwarf and have a number of shoots low down near the base of the plants. Directly the cuttings reach 4 inches high, the top should be pinched out to induce additional growths, thereby laying the foundation of the future specimen. Some few persons prefer their plants grown as standards from 4 feet to 5 feet high. The

plants intended for this form of culture must be allowed to grow with one stem only at first until the desired height is reached.—E. M.

SHORT NOTES.—CHRYSANTHEMUMS.

Chrysanthemum L. Canning deserves mention as a particularly good late variety. It has a dwarf, stocky habit of growth, the flowers pure white, freely produced and of elegant shape. Growers of cut flowers for market should secure this.—H. S.

Chrysanthemum Secretary Farson.—This promises to be a useful addition to the incurved Japanese section. The blooms are fully up to exhibition size; the florets of medium width, narrower at the points. The colour is buff, heavily striped with purple; the points of the florets clear buff or shaded yellow.—E. M.

NOTES OF THE WEEK.

Fine Anemone fulgens.—We are sending you by separate post a few blooms of *Anemone fulgens* var. cut from the open ground this morning. We consider the blooms far superior to those of *A. fulgens* proper, the habit and general constitution of the plant being stronger and more vigorous.—HUBERT & MAUGER, *Guensey*.

* * Flowers remarkable for size and the colouring very brilliant.—Ed.

Forms of the Eastern Hellebore.—Messrs. Laing send us a number of varieties of this with French names, many of them beautiful, as all forms of the plant are. We, however, cannot see any advantage in giving so many names to forms of the old *H. orientalis*. Not one of these things, however interesting to look into, are better in effect in the garden than the forms of the same species that David Moore grew at Glasnevin many years ago.

The Cloth of Gold Crocus.—A very old Crocus is *C. susiana*, or Cloth of Gold Crocus, but it makes a brilliant patch of colour when the bulbs are planted moderately close together. It was brought from the Crimea as far back as the year 1605 or thereabouts, and is a bright flower on a February day. A large mass of it was in bloom recently in the Royal Gardens, Kew, and few early flowers are richer in aspect, the colour deep orange-yellow, made more intense by the dark-coloured outer segments.

A New Tree Willow.—Travelling the other day in Southern Germany, I remember seeing a beautiful *Salix*, and as you are fond of Willows, I thought it might interest you. Professor Dippel, of Darmstadt, our first authority about trees, was with me and told me that it was *Salix blanda*, a natural hybrid between *Salix babylonica* and *S. fragilis*. It is a stately tree, of perfectly pendulous habit, quite as good as *babylonica*, but much larger. It has the further advantage over the Chinese tree—I consider *S. babylonica* as such, that it is perfectly hardy in Germany; whilst *babylonica* is very often crippled by frost.—BARON VON ST. PAUL.

Calliandra Tweedei.—We have lately noticed this charming stove plant in two or three gardens, and when well grown it possesses much interest. The Bottle-brush-like flowers, deep crimson in colour, are in rich contrast to the feathery foliage, which is very much like that of a *Mimosa* in character. The plant makes quite a bush, and is so distinct in character from the general run of stove plants, that it well deserves a good place. It is the long crimson stamens that give beauty to the crowded heads of flowers. A great point is to get the growth well ripened, and propagation may be effected by striking the cuttings on a little bottom heat. It was introduced about fifty years ago from Brazil, and should be more common.

German Dendrological Society.—Perhaps it will interest you to hear that last year we established a "German Dendrological Society." My friends have called upon me to be the presi-

dent. The three directors of the botanic gardens of Berlin, Darmstadt and Heidelberg, the professors Engler, Dippel and Pfitzer, are vice-presidents, and a committee of nurserymen, country gentlemen and foresters is to assist us. Our aim is to study and to introduce into Germany trees and shrubs that may have either an economical or an ornamental value. Our investigations and trials will not only comprise the so-called "novelties," but include also those trees and shrubs which have been known for a long time, but which have not as yet received proper attention in gardens or forests. We hope to be able to form arboreta in proper situations, where the plants will be tried, and we will then make known our observations as widely as possible, to induce our countrymen to do more for their plantations than hitherto. England in this respect will be to us a brilliant example.—BARON VON ST. PAUL, *Fischbach, Schlesien, Germany*.

Iris reticulata.—In a sheltered corner the other day we noticed the first flowers of the netted Iris, which, singular to say, is not common in ordinary gardens. Mr. Allan at Gunton has, we believe, naturalised it, and finds that rabbits will not touch the plant. A few clumps of bulbs on the rockery or border are a pleasant spring picture, and the violet and gold flowers will scent the garden with a rich fragrance. Of all the bulbous Irises, not one equals in beauty *I. reticulata*, and the type is sufficient unless one wants to grow a collection, adding the many varieties of it. Plant the bulbs deeply, 9 inches not being too much, and in the summer months it is a good plan to lift them and replant at once. Messrs. Barr have just sent us some well-flowered examples of this Iris in pots. Few bulbs are more easily grown in this way, the shelter of a plant house sufficing. There is no reason why such a bulb should not be as common as any of the more popular early spring-flowering bulbous plants.

The Mezereon at Kew.—We noticed in the Royal Gardens, Kew, a few days ago the bushes of the Mezereon (*Daphne Mezereum*) bursting into bloom. A few bright sunny days are needed to expand the flowers fully, and these we may now reasonably expect. The *Daphne* is such a delightful shrub, that when used freely and boldly, as at Kew, note should be made of it. Each bed contains about twenty plants, tufts of *Ruscus* being planted between. When the *Daphnes* are in full bloom, the air is loaded for many yards around with the sweet fragrance, and the mass of purplish rose against the green Grass is a happy contrast. We should like to see a bed of the white variety, as such a feature would form a distinctly attractive spring picture. In all large gardens where there is a wide breadth of turf, on the outskirts of which bold masses of shrubs could be planted, space should be found for the *Daphne Mezereum* and its varieties. As the plants increase in size and get too close together, it is a simple matter to remove every other one and transfer to another position.

Notes on Snowdrops.—The winter-blooming *Galanthus* mentioned by C. G. van Tubergen in your issue of February 11 is probably a variety of *octobrensis*. In September, 1891, Max Leichtlin kindly sent me two bulbs named *G. octobrensis*, which came into bloom about the middle of November, 1892, and are only just out of bloom. Like those of your correspondent, they have the whitish glaucous line running down the centre of the leaves. On examination, it is possible they may be different, but, judging from the description, I should say your correspondent's *Galanthus* is a late-flowering variety of *G. octobrensis*. A bulb received from Max Leichtlin in July, 1892, named *G. octobrensis* (improved) flowered on Oct. 15 last and continued in bloom till the middle of December. This is no doubt the true type of *octobrensis*, flowering as it does in the month from which it takes its name, though the leaves and flowers of the earlier and later types were the same. We have a nice lot of *G. Fosteri* coming into bloom just now. It is a fine, showy, and distinct Snowdrop, and I hope to have a colony of it established in a good position in the Grass by

another year. I am indebted to my valued correspondent Max Leichtlin for a very interesting and rare Snowdrop from the Isle of Ihasos, which is just now in bloom. It is similar to *G. Fosteri* in the flower and markings on the cup. The leaves are broad, like those of *Fosteri*, but instead of being a dark glaucous green, like those of *Fosteri*, they are of a light green, like those of *G. nivalis*.—D. MELVILLE, *Dunrobin Castle Gardens*.

Chorozema Lowi, which it will be remembered was shown by Messrs. Low and Co., Upper Clapton, at the meeting of the Royal Horticultural Society on February 14, 1891, is one of the most charming indoor plants raised of recent years, and deserved well the award of merit given to it on that occasion. One may compare it to *C. Chaudleri*, but the flowers are of richer colour, and the growth is more bushy, yet it is not stiff. Another characteristic feature is that the leaves are of a deeper green than usual, and with more numerous spikes. Small plants are most ornamental early in the year, and a long succession of bloom is maintained, which will afford useful material for cutting if required. *C. Lowi* should be grown by all who care for good indoor plants, as it is exceptionally free and easily grown, a point of no small importance to amateurs.

Pleione humilis.—Just now a couple of pan-fuls of flowering pseudo-bulbs are very charming in the cool house at Kew. The flowers of this species vary from almost pure white to rose, but they always have a glistening, frosted-like surface. The lip is of a more pronounced shade of rose than the petals or sepals, and is further ornamented by patches of yellow and reddish brown, while several raised fringed lines traverse the centre lengthwise. The flower measures from 3 inches to 4 inches across. *P. humilis* should be repotted early in March. The best compost for all the *Pleiones* consists of fibrous peat and loam (from both of which the greater proportion of fine material has been removed) in about equal parts, adding to them chopped Sphagnum and coarse silver sand, the latter only sparingly. My experience with *Pleiones* is that they should undoubtedly be repotted each year. If properly grown they always fill the pans with roots, and the fact that they will take a very considerable amount of feeding with manure water when in full growth shows that they are likely to pretty well exhaust the soil in which they are grown. I find, too, that on account of their rapid increase they become much too crowded the second year. *P. humilis* has been known in gardens since 1850, in which year it was introduced from Nepal.

Calceolaria fuchsifolia (syns., *deflexa* and *grandiflora*).—I was very pleased to read the notice in THE GARDEN of the 18th inst. of this invaluable winter-flowering *Calceolaria*. I have grown it since 1878, and find it the best winter-flowering plant of its colour. It is also an excellent one for cutting, as the flowers stick persistently to the stem, even when rudely shaken. I would recommend taking the cuttings in December, striking them in a cool house from which frost is excluded. In May plant them out in good soil in the open 1 foot apart, where the only attention they require is to keep weeds down. In October they will without any trouble be found to have made nice bushy compact plants 9 inches to 12 inches high and as much through, with every point splendidly set with flower. They should then be lifted and potted in say 6-inch pots and placed in the greenhouse, where they will flower profusely all winter. This system saves the summer potting, watering, pinching, house room, &c., and makes very much better plants than I have ever managed to secure under the other method which I for years carried out. It is my impression that this *Calceolaria* was introduced previous to 1878, and was prior to that year figured in the *Botanical Magazine*, but of this I am not certain, as I have not the volume now beside me.—J. FORBES, *Harwick*.

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TREES AND SHRUBS.

THE VENETIAN SUMACH.

(Rhus Cotinus.)

THIS when in flower always arrests the attention, because of its singular appearance, of even those who do not take a general interest in shrubs. On account of the feathery nature of the sterile flower-clusters some call it the Wig tree, a name by which it is perhaps better known than Venetian Sumach. It is an invaluable shrub, as it is attractive at a time when shrubberies begin to look dull and monotonous. It is always a dwarf, spreading bush, rarely more than 8 feet high. Its glaucous round leaves make a pleasing contrast to the reddish feathery clusters. It is hardy, almost evergreen, and grows in all kinds of soils, but must always have plenty of room to allow of full development. The bush here figured is a conspicuous object on the lawn at Marsham Lodge, Gerrard's Cross, Bucks.

EXAMPLE OF RAPID GROWTH OF EVERGREEN TREES.

No remark is more frequent, when one advises the planting of a group of fine trees like Yew or Lebanon Cedar, than that the growth "is very slow." We are never deterred from planting anything because the growth is slow, as having found so many beautiful trees in the world when we came into it, we should keep up the stock. But the growth of some of the stateliest evergreen trees is not slow. The growth is so subtle and constant in certain trees that one does not notice it much, but persons looking in after a few years' absence notice immediately the beautiful growth which takes place in certain evergreen trees, of the highest value from an artistic point of view. In 1888 we planted some Cedars of Lebanon, 4 feet to 5 feet high, in a poor soil in a copse that had recently been grubbed, and these are handsome young trees now—pictures of grace and vigour, 13 feet high. We the same year made a plantation of Lawson's Cypress—little things that one could carry three of when planting. Now they are sturdy trees, loaded with rich foliage, and very steady in the teeth of violent winds; measured this week they are 13 feet high.

At the same time, or later, we made a large plantation of the common Yew to act as a high evergreen screen between the stable and the house. The Yews are not quite so tall as the Cedars or Cypress, but equally remarkable for vigour. Here we see three of the finest hardy evergreen trees for forming groups or shelter belts in the home landscape which are remarkable for rapid growth.

Often in planting such things the mistake is made of planting too thickly and not thinning in time. The only remedy is to have somebody near who takes the trees out of each other's way. The handsome growth we speak of will only be kept up and the trees become fine ones of their kind if we are as busy in thinning as we have been in planting. The wants of a country place are such that there is plenty of places for young trees. For instance, in the case of our Lawson's Cypress, as soon as we saw them filling up we took away the small ones, leaving those that had begun well; and so we must go on. In the coming spring we propose to make a bold group of the Cypress out of the smallest of the colony. The strongest trees will then be too big to move with advantage, even if we cared to do it. It would be better to use the axe than let trees of this or any other kind injure each other. Yews are often useful for forming covert in the centre of woods and in many other places; the danger is when they are in the fields, and the smallest of the colony of Yews will be transplanted far into the evergreen wood. People living in a country place, unless they consider this question, cannot always see how soon young trees want thin-

ning, because some evergreen trees grow winter and summer, and encroach on each other in a subtle way. We have seen some of the finest plantations in England and Wales ruined from want of attention—the very choicest conifers, and every variety or species that one could desire, crammed into plantations and forgotten a few years after they had begun to grow vigorously.

A good way is to walk round the trees and never let them touch each other. This rule should be rigidly observed for all such things as Cedars, quick-growing Cypress, Yew and other trees of any natural dignity. They may encroach on dwarf shrubs and plants, but should not touch each other, and with this precaution it is a pleasure to see them grow. They spread so rapidly under these conditions, that it is astonishing how often we have to use the spade or axe.

These words concern groups of precious trees in pleasure grounds near the house. It is another matter when we are dealing with woods. But even to these something of the kind will apply, as, whether we get a growth of 2 feet or 1 foot out of our young Scotch Fir or other trees is of some con-



The Venetian Sumach (*Rhus Cotinus*). Engraved for THE GARDEN from a photograph sent by Mr. Frederick M. Fry, 14, Montague Street, W.C.

sequence. We believe a fair amount of thinning and cleaning would greatly repay in such cases. The growth of young Scotch Fir and other evergreen trees in a wood is often at first interfered with by vigorous heath and ground plants. We often think it would be worth while to cultivate between the lines for a few years, and certainly early thinning and even the early removal of bad trees would be a great gain. How often do we see young plantations of Scotch Fir literally scalded from having been put in too thickly and never thinned.—*Field*.

White-flowered Erica carnea.—This form of the pretty little Winter Heath is not nearly so well known as the typical kind, but, flowering as they do so early in the year, a place may in most gardens be found for both of them. A very happy combination recently noted was a small bed planted with the white form of this Heath which served as a groundwork for the beautiful blue *Scilla sibirica*, the effect of which would be very pleasing

when the *Scillas* were fully expanded. The comparatively dry weather we have had since Christmas has been greatly in favour of this Heath, especially the white one, for with wet weather the flowers are more liable to be splashed and discoloured than in the ordinary form. This last, when planted in a light sunny spot, produces richer coloured flowers than where it is a good deal shaded, though in colour some individuals are certainly superior to others. Few of our outdoor shrubs bloom so continuously as this little Heath, for, given favourable weather, it will commence to flower soon after Christmas and continue till spring is well advanced.—*T*.

GRAFTING LILACS.

WITH respect to the practice of grafting Lilacs, one is tempted to say, Can folly further go? The man who adopts this method is the more especially blameable in employing the Privet as a stock. Everyone knows that the Privet forms such an abundance of coarse roots as to completely rob the soil around of its goodness, besides bringing it into a dust-dry condition in the summer season. After purchasing a collection of Lilacs and giving them a good position in the garden, it would come as an unwelcome surprise to find numerous Privet sprouts springing from their bases. If such happened to me, I should be inclined to root them out. In the case of most things which are commonly grafted, reasons, good, bad, or indifferent, can be given for doing so, but it would puzzle anyone to say why this method of increase should be applied to the Lilac, which strikes from cuttings almost as easily as the Fuchsia. I have propagated thousands of the best kinds of Lilac in this way, quite 95 per cent. of the cuttings making good plants. I note that M. Lemoine propagates his Lilacs in this way, and I doubt if on the Continent, where Lilacs are much more largely planted than with us, it would be possible to find a grafted plant. When things so easily raised from cuttings are grafted, one does not wonder that an art undoubtedly useful when judiciously employed should often be condemned. In propagating Lilacs from cuttings two methods may be made use of. One consists in potting the plants at the fall of the leaf, keeping them cool till January, and then giving them a temperature of not more than 50° till February, when they may have 5° more. The growth made will then be full and succulent, but not too tender, and the young shoots will make roots freely in a temperature of 60° more quickly and with greater certainty if bottom heat is employed. I have always used 4½-inch pots, preparing them exactly as is usual for Verbenas. When fairly rooted they are removed to a cooler house and from thence to frames where they can be hardened off. Later on, say early in May, they can be set out in the open ground in good well-manured soil, keeping them watered if the weather is dry until they get well hold of the ground, when they require no more attention than keeping them free from weeds. Another way consists in taking the cuttings early in August, just as the wood is maturing. The best place for them is the north side of a wall or hedge, where they get little or no sunshine. The soil must be light and rather sandy, and the cuttings should be very firmly inserted, leaving one or two leaves above ground only, as then evaporation is not so great and the cuttings are not so likely to flag. Kept well moistened, the greater portion will make good roots by the autumn, and can be transplanted the following March. J. C. B.

Hardy Heaths.—It is a pity that these are not more in favour for general planting. Most of them flower during late summer and autumn, but *E. carnea* is the exception, and although generally at its best during spring we might call it a winter bloomer. The few fine warm days that we have had to begin the month have brought out the flowers of this Heath in myriads. The Snowdrops are only just peeping through, and suggest a charming combination of two of the earliest flowers. Then there is the white form of this early

Heath generally called herbacea. It is but a fortnight ago that the verdant tufts peered through the snowy mantle that covered them for several weeks, and now they are fast becoming snow-white again with a profusion of the purest little bells. Another kind in the same bed, perhaps a variety of *E. carnea*, is also full of flower. It differs from the species just named in having a rather erect, but lovely tufted habit, and its bells are rather shorter, more inflated, and of the palest flesh tint. One can imagine how charming broad sheets of these would be in a garden that was furnished with a permanent growth of things for which it was adapted, and there are hundreds of gardens that would grow hardy Heaths, yet have not a single tuft of any kind. Then there is *E. codonodes* again, concerning which a note appears on p. 77 in *THE GARDEN* of January 28. I fear the request for information on its behaviour generally will not meet with much response, for it will hardly be found except in the few gardens of those who know and appreciate these things. Messrs. Wood, of Maresfield, Sussex, grow some quantity of it, and it does well in their nurseries. The place is bleak and cold, but the soil is well drained, being rather sandy, and in this no doubt is the secret of the plants' successful growth and perfect hardiness. If given a suitable site it would be the most charming shrub of winter. Its slender shoots of graceful green are almost like those of the Tamarisk, and recently when at Maresfield, all through the extensive nursery there I saw nothing so pretty as the numerous fine bushes of this Heath. The shoots of last year were showing myriads of buds along their whole length and promising a succession for many weeks. The opened flowers are of the palest flesh white, and the pink-tipped buds glow among the verdant leafage. A reference to Nicholson's Dictionary gives this Heath as a variety of *E. arborea*, the species just named being hardy, a native of Europe, growing 10 feet high, producing white flowers from February to May, and, lastly, having several varieties.—A. H.

BAMBOOS.

I AM glad to say that my experience of the Bamboos mentioned by "A Gloucestershire Parson" (page 112) is exactly the same as his, although we are situated among the hills and wilds of North Wales. With me the lovely *Arundinaria falcata* has suffered severely the past three winters, and most of the graceful green wanders are browned and killed to the ground; but each succeeding summer the growths from the crowns are plentiful and strong, many making 16 feet long canes. These with the odd ones that survive and throw a few side shoots form lovely clumps of delicate greenery even early in the summer. It is altogether a most desirable plant; a pity it is not oftener met with. *Bambusa Metake* has long ere this, I hope, fully established its claim to hardiness; neither wet, east winds nor frost seem detrimental to its well-being, and it thrives in almost any position. We have a few others growing here that withstand the rigour of our late severe winters equally as well as it, with the advantage of being more graceful and elegant and quite as free in growth, if not even more so. One which I believe to be *B. viridis glaucescens*, a most vigorous grower, produces quantities of underground stems that throw up strong canes from 10 feet upwards the first season, and are clothed the next and subsequent ones with thickets of side shoots. It is much more elegant in habit than *Metake* and a grand plant for a bold clump. We have one such now, although annually robbed for increase of stock, that occupies several square yards of a once sub-tropical bed, and even runs out on to the surrounding lawn. In connection with its associates and surroundings, this forms a pretty picture. Two other varieties less rampant and also less spreading in growth than the preceding ones are also thoroughly hardy and stand exposure to easterly winds remarkably well, possessing the graceful elegance of *Arundinaria falcata*, with the immense advantage of being evergreen. These are two sterling varieties, but as the

nomenclature of this class of plants is as yet rather mixed and uncertain, I shall abstain from attempting to name them, but herewith send you a sprig of each (Nos. 1 and 2), hoping you will kindly name them, as well as the others also enclosed. I shall also be grateful for a list of other distinct, tall-growing, graceful varieties, for I am anxious to increase our collection of these, being such lovely objects in the landscape, either singly or in clumps or groups on lawns, fringes of shrubberies, streams and lakes and even the outskirts of our woods.—J. R., *Tan-y-bwlch, N. Wales.*

* * The small-leaved kinds so much resemble each other it is not easy to determine them with certainty by means of branches, although in relation with the plant they appear quite distinct. No. 1, *viridis glaucescens*; 2, *aurea*; 3, *Metake*; 4, *Simoni*. Other good kinds are *violascens*, *mitis* and *Quiloi*, all of which reach 16 feet in height, *palmata* and *Ragamowski*, dwarfier kinds with magnificent leaves nearly twice the length and breadth of those of *B. Metake*.—Ed.

The Weeping Holly.—Amongst weeping trees, *Ilex Aquifolium pendula* is of note, and a fine specimen, illustrating its beauty when on a lawn, may be seen near the Cactus house in the Royal Gardens, Kew. The tree, or shrub, whichever one is pleased to call it, is of remarkably graceful character, the branches falling over naturally and quite touching the Grass. A mass of deep green leafage, bold and handsome, is presented to the eye, so thick that one cannot see the main stem, and the effect is richer when there is a good show of scarlet berries. The Weeping Holly is a charming variety for the outskirts of a large lawn, not alone for its perfect weeping habit, but also by reason of the bold, deep green, and dense foliage.

Scarlet-berried Ivy.—The note on page 118 regarding the ornamental features of the Tree Ivy, especially when studded with berries, induces me to ask if any of the numerous readers of *THE GARDEN* have fruited the scarlet-berried Ivy in this country. It was figured in the *Revue Horticole* as long ago as 1884, and was soon after sent here from the Continent, but though I have seen numerous examples of it under very varied conditions, I have not yet met with it in fruit; indeed, it has in no case shown any sign of thickening out in the tree-like manner that the common Ivy assumes preparatory to fruiting. Regarded solely as a climber, it is, however, a very pretty Ivy of a free yet slender growth, plentifully furnished with leaves, which are sometimes ovate, but usually wedge-shaped towards the point, with short side lobes at the base. The colour of the leaf is green, but suffused with grey along the veins, and this is generally so noticeable, that the entire mass of foliage has quite a greyish tint. It was illustrated under the varietal name of *aurantiaca*, and the berries there shown appeared to be a good deal in colour like those of the Mountain Ash. Although Ivies can be readily struck from cuttings, a good many, especially the weaker kinds, are grafted on to the stronger growing Irish Ivy, which continually pushes forth shoots below the point of union, and needs constant attention for their removal. The evil effects of this were pointedly brought home to me some time since when I was consulted regarding a specimen of the scarlet-berried Ivy which was growing very freely, and on examination it turned out that the shoots from the stock had completely overgrown the graft, which was not much larger than when planted, whereas the Irish Ivy covered a considerable space.—T.

Iris alata, called also *I. scorpioides*, is a very beautiful spring-flowering Iris and will bloom in the late autumn, even in mid-winter, if the weather is favourable. There is a special charm in the large blue flowers, enriched with blotches of yellow and purple-lilac, but they vary in this respect. Several of its varieties have received names; *speciosa* has larger and deeper coloured flowers, and

in *alba* they are milky white, but do not seem fixed, sporting to blue. One really does not want to give names to forms of a species unless the characters are sufficiently distinct and boldly marked. A sandy, warm soil and sheltered position should be selected, or a frame to protect the flowers from the weather. Cultivated, thoroughly well-ripened bulbs are best and should be planted very early in the autumn. They will, if strong and planted at the proper time, not delaying it too late, bloom well the first year.

KITCHEN GARDEN.

THE CULTURE AND BLANCHING OF DANDELION.

FROM time immemorial a salad has been made from the young leaves of Dandelion plants found growing wild in meadows, on roadsides, at the bottoms of walls, &c.; but the cultivation of the plant is of less ancient date, although it can be traced back to the end of the last century, as we shall presently see. At the present time, moreover, it is not very generally practised, notwithstanding its facility and the good quality of the produce which it yields. In Lorraine, however, Dandelion is extensively grown, and I can testify to the superior quality of the plants which are cultivated in the sandy soil of the Vosges Mountains. Of late years the acquisition of improved varieties, such as those named "*à cœur plein*" and "*amélioré très-hâtif*" &c., has caused the plant to be somewhat more largely grown in gardens.

According to a statement in the "*Bon Jardinier*" of 1839, the credit of having, about that time, made the first attempt to cultivate Dandelion was unanimously attributed to M. Ponsard, of Châlons-sur-Marne. This priority was, however, subsequently claimed in 1857 by M. Chatelain, a cultivator at Montmagny, and hence we may infer that between these two dates the culture of Dandelion was very little practised, if not entirely unknown in some localities.

On the authority of M. Joigneaux, we must go further back to find the commencement of this culture, and, in his "*Livre de la Ferme*," the author says that Bosc, in 1809, had already spoken of the culture of Dandelion. He also reminds us that, a good while before Bosc's time, Philip Miller, in his "*Gardener's Dictionary*," has a few words to say about this plant, and states that in his day it was "seldom cultivated." Writing about it in 1809, Bosc uses the following words: "Some amateurs sow it in their gardens. Its culture is easy, only requiring the seed to be sown before winter in a well-prepared bed with any aspect, to keep the bed free from weeds after the plants have come up, and to cover the plants with straw, leaves, or any other suitable material for the purpose of blanching the leaves." Since the year 1809 the methods of culture have been improved. "The market gardeners at Nancy," write MM. Decaisne and Naudin in their "*Amateur des Jardins*," "sow Dandelion seed in April and May, prick out the seedlings in rows in June or July, and blanch the leaves in October by covering the plants with soil 5 inches or 6 inches deep. As soon as the leaves make their appearance above the surface of the covering of soil, they are cut off at the neck of the root and sent to market. Dandelion leaves in this condition form a very tender salad, for which they are superior to blanched Chicory or '*barbe de capucin*.'"

Dandelion is grown in two different ways, according as it is required to be used green or

blanched only at the centre, or entirely blanched either where it grows or in a cellar. In the former case the time of sowing differs according as the seedlings are to be pricked out or not. It may be stated at once that for a careful mode of culture pricking out is to be preferred, as one has then the opportunity of selecting the most vigorous plants, from which the largest crop of leaves will be produced. Such plants will be much superior to those which are sown to remain, whether broadcast or in rows, and merely thinned out.

In growing Dandelion which is to be used green or blanched only at the centre the seed is sown in February or in the beginning of March (if the plants are not to be pricked out the seed need not be sown before May or the beginning of June, but we have seen that it is best to prick them out). The sowing is made in the end of a well-prepared bed, using seed in the proportion of one ounce to 24 square yards. The seedlings, if carefully attended to when young, will be fit for transplanting in May, when they should be pricked out at an average distance of 6 inches apart every way, varying, however, according to the richness of the soil. When they have taken root firmly the only attention they will require during the summer will be that of weeding and hoeing. Watering may be dispensed with, as the plants do not require any except in unusually dry seasons. In October the rows are earthed up so as to half cover the leaves, of which gatherings may be made from November on through the whole winter, drawing the knife through the plant underneath the soil.

In growing Dandelion which is to be entirely blanched where it grows, the instructions as to sowing, &c., given in the preceding case will be equally applicable. The arrangement which admits of the heaviest crop being taken from a given area of ground is that in which the planting is made in beds about 4 feet wide, separated from one another by alleys or spaces 2 feet in width. During the summer the soil of these intervening spaces having been duly broken up can be utilised for growing various crops, so that there may be no waste of ground. In the beds the Dandelion plants are set out in eight rows in each bed, and at a distance of 5 inches apart in the rows.

The best time for commencing the blanching of the plants in the beds is the beginning of February, although in well-drained soils it may be done in November. Blanching in February for preference, the beds are first covered with a layer about 2 inches deep of spent hotbed compost, on the top of which is placed a layer, 5 inches or 6 inches deep, of soil taken from the intervening spaces or alleys and finely broken up before it is put on the beds. As soon as the leaves have pushed through the layer of soil and appear above the surface they are gathered, the root of the plant being cut through just below the neck, so that all the leaves may come away together. Usually, however, the leaves are cut through above the neck of the root with the object of obtaining another crop from the same roots under the same treatment in the following year; but from numerous trials and experiments made by M. Hardy, it would appear that there is no advantage in making use of the same Dandelion plants for several seasons, as, after the first season, they come into flower much earlier and produce a smaller proportion of leaves than young plants do, and the leaves are also not so fine. Besides, for marketing purposes the clusters of leaves are more attractive to purchasers when they are gathered with the neck

of the root attached, and they also keep fresh much longer.

If only a small quantity of Dandelion is needed for the use of a single family, beds will not be necessary, as the plants may be set out in a few rows sufficiently far apart from one another to furnish from the intervening space soil enough for the earthing up. This mode of growing Dandelion is common in many parts of the Vosges region, and gatherings are made of the leaves during the whole of the month of March and the beginning of April.

The following method of blanching Dandelion in cellars, which is practised at Versailles, is recommended by M. Hardy: In autumn, roots of Dandelion plants which were pricked out in April are made up into bundles in the same way as Chicory roots are bundled for "barbe de capucin," care being taken to reject any roots that are too coarse, as these would produce several buds instead of one, and would yield only small leaves. The Dandelion roots are then treated in the same way as the Chicory, but their growth is not so rapid, and it takes about three weeks to have them well blanched. The yield by this process is not very large. At Versailles, from plants that were pricked out 6 inches apart every way, the yield per area of 120 square yards was about sixty bundles, each measuring 32 inches in girth.

As, under a careful system of culture, beds of Dandelion plants should not last longer than one year, it is important to secure a supply of good seed for the following season. With this object some of the plants which are most abundantly furnished with the broadest leaves are allowed to bloom and run to seed, and as their flowers make their appearance the blooms which expand on any of the other plants are nipped off, which serves two purposes, viz., that of relieving the plants from the weakening effects of flowering, and that of preventing the soil in the vicinity from being filled with self-sown Dandelion plants. The seed of the selected plants is gathered as it ripens, after the dew of the preceding night has evaporated from it and before it has been dispersed by the wind, which easily blows it away. This seed preserves its germinating power for three years, but it is better always to use seed that is not more than one year old.

The culture of Dandelion is, as may be seen from the foregoing account, very easy and very simple, and produces an excellent salad-plant which is not sufficiently appreciated nor even sufficiently known, and is far superior to the common wild Dandelion which may be gathered everywhere in spring. There is always some spot in the kitchen garden where it may be grown every year, and with the exception of the wireworm, which sometimes attacks its roots, there is no insect or disease known to injure this thoroughly hardy plant.—*Revue Horticole*.

Early Carrots.—To those in quest of good early Carrots, I would recommend Parisian Forcing and Early French Horn. Both are exceedingly early. It seems strange that in many gardens you see nothing but the Short Horn as an early kind. The two kinds named above are a long way before that kind in point of earliness. When well cooked they are so soft, that they, as it were, melt away in the mouth. I need them early, and accordingly sow them in January on a hotbed. F. A. C.

Winter Spinach.—Abundant evidence is to hand this year of the superior hardiness of round v. prickly Spinach. The latter will doubtless come again presently, as the hearts are sound, and furnish us with a good supply, but at present it looks very sickly, and has lost all its outer leaves, whilst, on the other hand, I picked from a

bed of the round immediately it was clear of snow. The quarter devoted to winter Spinach has had very little in the shape of manure since the winter of 1890. It was heavily manured and deeply dug then, and planted in the spring of 1891 with Brussels Sprouts and sprouting Broccoli. These stood until February, 1892, when the ground was cleared, forked and planted at once with Duke of Albany Potato. I lifted a good crop of this at the end of July, spread on a surface dressing of native guano, pricked this in, gave a slight treading to settle the soil, and sowed Spinach the second week in August. This has been the routine followed for this particular series of crops for several seasons, and I find it answers the purpose admirably for winter Spinach. The growth made is stouter and more sturdy than when I sowed on more recently manured land, and the percentage of loss comparatively trifling.—E. BURRELL, *Claremont*.

Celery and the frost.—The Celeries have had a severe time of it during the past month, and upon examination of varieties I find none have stood the test so well as Standard-bearer. This is certainly one of the hardiest varieties grown. Of course much of its hardiness is due to its sturdy habit and solid growth. There are many larger Celeries, but I do not think they equal this for late planting and frost-resisting properties. The plants I write of as having taken little harm by the severe weather were grown as sturdy as possible. The plants were raised on a cold frame, sown thinly, kept thin, and transplanted into their permanent quarters direct. By this means short thick foliage is the result, and it is surprising how such foliage compared with that which is drawn resists frost. Another point is late moulding. This allows the leaves and stalk to get hard before the soil is applied. Of course for early supplies this plan cannot be adopted, and in heavy land it would be difficult, but in light soils it has a great advantage in warding off frost, and excessive wet does not rot the centre, as is often the case with early moulding. For late uses the best white is Sandringham, but this is less hardy than the first-named. Objection may be made to red Celeries on account of their colour, but if Standard-bearer is kept for late use it loses much of its pink colour, is one of the best-flavoured kinds grown, and requires less protection than the white varieties.—S. H. B.

LEEKS.

WE find in our best vegetable competitions that Leeks have attained not only to a high position, but also have been shown in very superior form. Something of this advance on the part of a vegetable which has never been held in very high esteem in England, although very popular in Wales and in Scotland, is perhaps due to improved varieties and something to superior methods of cultivation. No doubt now the most popular exhibition Leek is the Long Winter, otherwise Exhibition, Champion, and other designations. This when fully grown has leaf stems about the size of an ordinary broom-handle, and should be blanched clean and as white as snow to a height of from 12 inches to 14 inches. It is not often that so unusual a length of pure white stems of good size is found, but some exhibited at Manchester last autumn under the name of Exhibition were of that length, and generally considered by competent judges to have been so far the best seen anywhere. I have learnt from the grower that the plants were raised from seed sown in a pan under glass in January; later dibbled out into small pots singly, grown on in 5-inch pots, the stems being kept well down, and from these when 10 inches out of the pots turned out into well-prepared soil, and in a row at 15 inches apart. The planting was done through the unusual aid of a Potato dibber, holes with its help being made 12 inches deep at the required intervals. Into these holes the plants were dropped, so that fully 8 inches of the stems were below the surface. Then old pot soil was placed in about the stems for a few inches in depth, and as the plants grew

this was added to, until in time not only were the holes full up, but earth was added to form a ridge, and thus the considerable height of blanching was accomplished. Of course, plenty of water was given when needed, but as the soil was very deeply trenched and heavily manured, and was also of a retentive nature, no considerable quantity was necessary. It was found that roots went down into the soil a depth of 18 inches, showing how much plants of this description like ample root-room below. The practice of using old sandy pot soil for blanching is a good one, as this compost is less likely to stain the stems than the ordinary manured soil does.

Messrs. Dobbie and Sons have shown very handsome samples of the Champion or Long-stem Leek, and it is evident that Leek culture is in the far north better understood than in the south generally. Still, we have some growers and exhibitors who can well hold their own, although they be but few. The long-stemmed form, with its non-projecting root or bulb, is now held in much higher esteem than is the broad short-stemmed Lyon or Rouen variety, although at one time that was the more commonly exhibited. Leeks are, of course, only useful when blanched, and the narrow long stems are more acceptable when cooked than are the short thick ones. Very much of acceptance depends upon cooking; hence, perhaps, it is that the Leek is far from being a common vegetable, and more often used to flavour soups, &c., than employed to make a separate vegetable dish.

A. D.

PLANTING POTATOES.

WITH the exception of the first early varieties, that can hardly be grown too quickly and are lifted and consumed before they are really ripe, it cannot be said that the highly-enriched soil of any good kitchen garden presents good Potato ground. It is even doubtful whether in such rich soils tubers ever exhibit the best quality or flavour, for should the breadths escape disease, the exceeding coarse growth which always results fails to produce in the tubers that solidity and excellence usually found in tubers grown in an open field. It is wise for gardeners to have always in reserve a piece of land outside the ordinary kitchen garden, which is, however deeply worked, yet but always moderately manured. Capital successional crops are Peas and Beans, especially that these manufacture or deposit nitrogen in the soil sufficient for their own purposes and any succeeding crop. Then Cabbages, or any member of the Brassica family, may follow, having had a fair dressing of stable manure, and Potatoes should follow, these being helped by superphosphate and potash in chemical or mineral form, dressed into the drills with the sets. In such cases, if the soil be generally well suited for Potatoes, the crops should not only be large, but of great excellence. To apply artificial manures efficiently with Potatoes, I have always found it best to sow in the compound thinly with the seed tubers in drills. These should be prepared roughly in good time, so that the work of planting may not be hindered later on. Ordinarily, all strong-growing varieties are planted too closely together. That is done on the mistaken assumption that density of plant means density of tubers—a great error. Ordinarily when the cultivation is good it is found that rows 3 feet apart will give a better tuber produce than will rows only 2 feet apart. In the latter case the plants are far too crowded to permit of full development. It is common practice to plant in the rows at 12 inches apart. I prefer from 15 inches to 16 inches. In setting out ground for furrows 3 feet apart, the ordinary course, therefore, is to mark out the ground in 3-feet widths with a line and a hoe, then with a long-tined fork throw up each breadth into a sharp rough ridge. That admits of full aëration or sweetening of the ground. Advantage is taken of hard weather to run along the furrows half decayed leaves or short fresh stable manure, which later is deeply forked in. This acts as drainage, especially in adhesive soils. Shallow drills are drawn along

the centre of the furrow with a hoe; into these the sets are laid, and the dusting of dry manure given also; that which has little of nitrogen and more superphosphates and potash as more productive of firm well-fed tubers is best. Then the sides of the ridges are forked in on the sets to a depth of 4 inches. It is surprising how soon in the moist soil the manures become available for the rootlets of the shoots, the sets put forth, and the aid thus afforded early is sustained for some time. Later the soil between the rows is forked over to fully pulverise it and prepare it for the earthing, which should always be efficiently done, and can be so when the plants are 3 feet apart. Those who want very fine tubers will do well to disbud the sets to one shoot. Those who prefer many of less size may allow each set to carry three or four shoots. Medium-sized tubers are for ordinary consumption always better than are large ones.

A. D.

Storing Onions.—I found that at Titsey Park, where the gardener had in his store a very fine lot and a splendid sample of Onion Maincrop, the practice of roping, if the term may in this case be applied, was of an unusual character. Not straw, but stout rods of Hazel or Ash were used, and fully 5 feet in length. Some 9 inches of either end were not used, but the rest was, and the ropes were therefore some 3½ feet if really not 4 feet in length. The plan adopted is as follows: these rods, which are about 1½ inches through, are tied tightly with string at either end, then are split right down through the middle, these halves being again split. A dextrous labourer has a tool to keep open the splits, into which is pressed the stem of the Onion plant, and that he does going round the sticks, so that the Onions lie close together until nearly the top is reached. Then they are hung up in a cool shed, and so keep well all the winter.—D.

Disbudding Potatoes.—The value of keeping Potato seed tubers in shallow boxes and sprouting them in very gentle warmth before planting, especially early varieties, has been so often shown, that it need not be dealt upon. But it is not so easy to induce persons who take so much pains to go still further and remove carefully with the point of a small knife all the side buds or shoots, leaving only the strongest, or two at the most, which are usually from the crown of the tuber. A medium-sized set, especially if whole or uncut, having one stout well-developed shoot will as a rule give better crop results than will one that is three times the size and has several shoots, and to employ large tubers, especially when the sprouting and disbudding processes are employed, is waste. The practice of disbudding is good for all tuber sets where it can be adopted, and it is not difficult in gardens where the plantings do not exceed ten or twelve bushels, as the work can always be done on wet days.—A.

Mint for forcing.—For market it is needful to make Mint culture a speciality and to do it remarkably well. It is only where there are to be had clusters or masses of roots that can be cut out with a sharp spade in squares a few inches thick, and in that way be carried into houses or frames in bulk, so that the short growth is dense and strong, that such form of Mint culture pays. In private gardens where a few boxes of forced Mint will suffice, or perhaps a frame is specially filled with the clumps of roots, it is a good plan to prepare these by setting in stout tops or cuttings thickly so as to ensure even plants all over the box or beds, and by giving liberal waterings with liquid manure ensure free and almost luxuriant growth. Boxes for Mint culture should have an inside depth of from 6 inches to 7 inches, be filled with some good turfy material and decayed manure one half, the rest being good sandy soil. Then if the Mint tops be pricked out into these at 3 inches apart, and the boxes stood in a close frame, especially having a little bottom-heat, the cuttings will soon root, and during the summer give such growth as to produce a mat of stout roots. Old clumps of roots may be broken up, the stouter

pieces selected and laid in on 5 inches of soil and pressed into position then be covered up with an inch of fine soil, well watered, and stood in a frame to induce quick growth. So treated it is very easy to have enough boxes of Mint for gentle forcing and to keep up a good succession all through the winter.—A.

EARLY LETTUCES.

AUTUMN-RAISED Lettuce plants are, as a rule, sown too early, and those who did so will now have to suffer for their pains, and we must now endeavour to fill up this void. The sowing of the seeds, although a very simple operation in itself, is in many cases the source of failure, or rather the cause of the plants not hearting so well as they should do. A Lettuce is of little value unless it is well hearted, be it early or late; therefore means should be taken in even the smallest detail of culture that the plants should not suffer in this respect. Thick sowing is an error to be avoided. In the garden which I now have charge of, it used at one time to be asserted that hearted Lettuces could not be grown, but I soon found out the cause, and Lettuces will now succeed as well as could be wished. It was simply in the sowing that the error was made. If good full-hearted Lettuces are to be had, the plants must have free development from the very earliest stage. It is no uncommon occurrence to see the seeds sown in a seed-box so thickly, that a few plants out of a corner are all that are used. There may be one or two plants by themselves, but what a contrast are these to the others. They are sturdy little plants, not drawn in the least, and may be lifted with a label with a fair quantity of roots. Such plants as these do not wither up under sunshine, but take readily to the soil they are pricked out in and grow steadily ahead.

The seeds should be sown thinly in an ordinary cutting box, the soil being equal parts of loam and leaf soil. What varieties should be sown will, of course, depend upon the grower. One may pin his faith to one variety and another to another. I am not so dogmatic as to assert that only the Cabbage forms should be grown, and that those who use the Cos forms only do not know what a good Lettuce is. They each have their admirers. The earliest Cabbage forms turn in the quickest; therefore, if Lettuces are expected as early as possible from cultivation carried on mainly in the open air, a good selection should be sown, also a good Cos form as well. A gentle heat is needed to raise the seedlings, but as soon as through the soil, remove to a shelf near the glass in a greenhouse temperature, where the plants will gain strength. Before the plants are eventually planted out they will have to be further prepared by pricking off into low frames or temporary shelters. The plants must be prepared by placing a layer of rotten manure on a level surface to the depth of 2 inches and the same depth of light soil. The plants pricked out into this 4 inches apart each way will if kept sprinkled for a few days, and also shaded if needed, soon become established. The time for planting in the open will of course depend upon the weather. Directly the weather is genial, after the plants are strong enough to be trusted in the open, they must be planted out. The soil for Lettuce must be rich and well pulverised, and for the first batch, select a warm sheltered spot, especially for the Cabbage forms, as these come along more quickly on a warm south border. The plants being lifted with a trowel, must be planted intact with the soil adhering to the roots, when they will start ahead. A cheap

method of forwarding a few rows is by using long portable protectors, as I have previously described in the pages of THE GARDEN. They are cheap and easily made. Nine-inch or 12-inch boards are placed on edge and joined together with a few cross pieces, so that when fixed they are a foot apart. Along the top edges are cut grooves into which glass is slid. By having them in 6-foot lengths they are handy to move about. It is a very simple contrivance and well adapted for the purpose indicated. By using these protectors Lettuces may be cut quite a fortnight earlier. A. Y. A.

Hardiness of Lily-white Seakale.—The only fault I have to find with the improved form

uninjured. I shall not be surprised, therefore, to hear that the Lily-white Seakale has not been injured in some districts, but, all the same, maintain that it is not nearly so hardy as the form it is rapidly superseding.—M. H.

Beck's Dwarf Green Gem Bean.—I was pleased to see on p. 70 a word of praise for this excellent Bean. It is of quite dwarf growth, very early, and crops remarkably well. It originated, I think, at Shipston-on-Stour as a sport from the Dwarf Fan or Cluster, which is regarded as the earliest and dwarfest of all our garden Beans, and it bears pods containing three or four beans. In consequence of its colour, it is to be preferred to any of the white Beans for table purposes, and it is always scarce and dear, as seed growers appear to experience difficulty in getting sufficient quantities of it. It should be sown on an early border

doubt the reason why the green Longpod and the Green Windsor are so much grown for market, though the green types are always higher in price than the white ones. By some they are regarded as rather tenderer in habit. The price of Beck's Green Gem is always high, as stocks of it are always very scarce, and it can rarely be purchased at a less price than 2s. per quart.—R. D.

ORCHIDS.

LENDROBIUM PIERARDI.

D. PIERARDI is named after M. Pierard, a Frenchman, who found it, and by whom it was introduced to the gardens of England. It is a common plant in India, being widely distributed throughout that country, but it is particularly common in the forests in the Sunderbunds of the Ganges, from whence it was originally imported. Hence, as may be supposed, it requires strong heat and abundance of moisture in order to produce strong growths, and I have frequently had this plant produce stout stem-like pendulous bulbs, some 5 feet and 6 feet in length. When fully grown the plant should be dried off and kept considerably cooler than during the summer. This will speedily cause the bulbs to swell up, and the leaves to shrivel and fall, as the plant is deciduous and loses all its foliage before flowering. Early in the season the flowers will begin to show all along the stems. These, mostly borne in pairs, are of a creamy mauve, or cream-coloured in some forms, the lip large, downy, and of a soft sulphur-yellow, bearing a few purple streaks at the base. The plant should be grown upon a block or in hanging baskets, as being a pendulous kind it will not thrive if made to grow upwards. The baskets should be well drained, and be filled with good fibrous peat and Sphagnum Moss. The plants may be grown in the very hottest place possible to put them, always being kept well supplied with water during growth, but during winter a temperature of between 55° and 60° will be ample. There are several varieties of this Dendrobium, some of which are very inferior. One of the best is *D. P. latifolium*, which produces fine flowers rather more freely than is the case with the type.

Masdevallia platyglossa.—This species is one whose appearance when in flower usually calls forth the verdict that it is more curious than beautiful. Such, however, is the character of three-fourths of cultivated Masdevallias, and it has proved no bar to their popularity. The plant has the usual tufted habit of this genus, its fleshy leaves being elliptical and pointed, with well-marked petioles. The flowers are very broad and the sepals are not attenuated, as in many species of Masdevallia. The lip, too, is remarkable for its size and width. In the majority of this genus the lip might be non-existent for any appreciable difference that it makes to the appearance of the flower; but here it is three-quarters of an inch in length and oblong in shape. Its tongue-like form suggested the specific name to Reichenbach. The flowers are of a uniform pale green, a few warts occurring at the top of the lip. It first flowered in Sir Trevor Lawrence's collection at Burford Lodge some ten or eleven years ago, and it has lately been in bloom at Kew.

Cattleya Trianae.—From Mr. Seeger, of Dulwich, comes a fine lot of varieties of this useful and beautiful plant, some being very fine. No. 1 is the variety named by Moore and figured as *Rolissoni*, having the sepals and petals slightly shaded with soft rosy purple, the lip deeper coloured, with rich orange throat. No. 5 is a very fine form of the variety *chocoensis*. This variety appears to



Dendrobium Pierardi.

of Seakale known as Lily-white is its comparative tenderness. The old form absolutely defies the most severe frosts, but not so the in other respects very superior Lily-white. For two successive winters all crowns of the latter that were left exposed to the action of frost have been completely ruined; whereas, the old purple-tipped variety is as sound as possible. Having been once caught, no mistake was made this winter, and the majority of the crowns that were not lifted and stored ready for forcing were heavily ridged over with soil, this proving their salvation. Ours is a cold, retentive soil, and anything growing in it very often suffers badly from severe frosts when the same crops in other gardens, the subsoil of which is of a gravelly or warmer nature, escape almost

in good soil, and then it comes in before any of the other Broad Beans, and when well cooked is highly esteemed as a delicacy. It was sent out about thirty years ago by Messrs. Beck, Henderson and Child, at that time wholesale seedsmen in the Adelphi. What should have caused the sport is not clear, but it may be remarked we possess green forms both of the common Longpod and the Green Windsor, and the opinion is generally held that the green Beans are better flavoured than the white ones. Both retain their green colour when ripe, and may on that account be used at table in a more advanced state than the white sort. Besides, cooks bear testimony to the fact that the white Beans when cooked are much less attractive on the table than the green ones, and that is no

be flowering very finely this season. What a pity it is that the flowers do not open more. The sepals and petals are broad and pure white, the lip also white, deeply tipped with deep purple. No. 6 is the form known as *Backhousiana*. Its flowers are very large and well formed, the sepals and petals white, suffused with pale rose, the petals having a long feathery stain at the points; the lip large and crisped at the margin, the front part rich magenta, tinged with purple; throat white, with a yellow centre. This is a superb form. No. 9 is a finely-formed flower of the true alba. The difference can plainly be seen by glancing at the next (No. 10), which is delicata, a form of it which comes very near to the true white variety, and which I have on more than one occasion seen sold under the name of alba. The remaining varieties need no comment. It must be acknowledged the dozen varieties make a beautiful exhibition in themselves, yet at the same time there are no flowers like the varieties *Osmani*, *formosa*, *Leana*, *Russelliana*, *Dodgsoni*, and some of the other fine forms.—W. H. G.

FAILURE WITH ODONTOGLOSSUMS.

As a beginner in Orchid culture, I shall be very grateful if any of your correspondents can help me by explaining the cause of flower-spikes of certain *Odontoglossums*, viz., *triumphans* and *Pescatorei*, shrivelling up and withering after growing 8 inches or 10 inches long. They first appeared early in January during the severe frost, but I do not think the temperature of the house ever fell below 45° (except close up against the glass, where it once or twice went down to 42° in the night), and it was not till the frost was gone that the points of the spikes began to turn brown. About that time the house was unusually damp, owing to a sudden thaw, and possibly this may have caused the mischief; but in general it is kept so moist that I do not think there can have been any great change. I should like to know whether there is any danger of keeping *Odontoglossums*, *Lycaste Skinneri*, *Cattleya citrina*, &c., too moist in winter. If so, I may have erred in that way. A nice healthy-looking new growth in the last-named is also beginning to turn yellow. But in the same little house *O. crispum* is at this moment in flower, and other *Odontoglossums* seem to be making healthy growth, together with a good many Ferns. *Tacsonia van Volxemi* and a large *Clivia* are also in flower, which does not look as if the atmosphere could be over-charged with moisture.—G. M. G.

* * There must be some local conditions which have caused the spikes to shrivel up in an early stage of their growth. The temperature of 42° to 45° as a minimum at mid-winter would be about right, and it cannot be supposed that the unusual dampness of the weather caused by a thaw would do any harm. Dense fogs are very injurious, and will not only destroy the fully open flowers, but will also cause the buds to shrivel up and fall off. Dipping the plants in a mixture of strong, soft soapy water will injure and sometimes destroy the flowers and buds, while the leaves are uninjured. The question is asked whether there is any danger of keeping *Odontoglossums*, *Lycaste Skinneri*, *Cattleya citrina*, &c., too moist in winter. There is great danger of doing so, especially with the two last-named species. The atmosphere may be too moist, and the plants themselves may very easily have too much water at the roots. Cool Orchids are so easily grown, that anybody almost may manage them with the instructions given from time to time, but *Lycaste Skinneri* requires rather different treatment from that given to such *Odontoglossums* as *O. Pescatorei*, *O. crispum*, *O. Halli*, *O. triumphans* and intermediate varieties. There are numerous other *Odontoglossums* that are strictly cool house species, and all such should never become anything like dust-dry at the roots. They may be kept moist all the year round, but in winter water must not be applied too freely. When growth is completed, water must not be given so freely as when the plants are in growth; these are, of course, details of the work which a careful cultivator will soon master. *Lycaste Skinneri* re-

quires a temperature of something like 5° more during winter as a minimum, and when at rest it should be kept much drier at the roots. *Cattleya citrina* requires peculiar treatment and does best on blocks with the leaves downwards. Very few people have succeeded in mastering its culture, at least to establish the plants permanently. I know one only, the Rev. F. D. Horner, of Lowfields, Kirkby Lonsdale. I saw his plants suspended from the roof-glass on blocks in flower last year, and they were a sight worth travelling miles to see. They succeed admirably in a warm *Cattleya* house and are kept fairly moist even in winter. I do not know that I can add more at present. Probably the occurrence is merely accidental and may not happen again.—J. DOUGLAS.

GRAMMATOPHYLLUM ELLISI.

AMONGST the many fine plants brought to this country in the year 1859 from the island of Madagascar was this about which I am asked a few questions by a "North Briton." The plant, which should have been kept cool and dry through the winter months, should now be taken in hand and resurfaced or repotted, for it is now beginning to waken up, and if it gets plenty of heat and moisture it will rapidly make good strong growth and flower from the young bulb about the month of August or September. The spike of bloom shows itself a long time before any flowers expand. Whether in a pot or a hanging basket, it should be well drained, as during the growing season it requires a quantity of water. For soil, use good brown turfy peat fibre and chopped *Sphagnum Moss* in about equal parts, and when potting, a few pieces of charcoal should be inserted. It should be grown in the East Indian house during the summer season, and during this time it revels in heat and moisture, but in the winter months it may be accommodated in the *Cattleya* house, and kept comparatively dry, but not to such an extent as to rob it of its leaves. It has large pseudo-bulbs which are somewhat square in form. These bear numerous leathery, dark green leaves, which, however, do not last more than two years; the scape proceeds from the side of the bulb near its base, arched and pendulous from the weight of flowers. The raceme is many-flowered, the sepals and petals thick and fleshy in texture, the sepals very much larger than the petals, curious in shape, tawny-yellow in the ground, transversely marked with streaks of rich brown, the petals being similarly marked, but having a brighter ground colour, the lip white streaked with reddish purple. The flowers are very curious in shape, and this adds to the attractiveness of the species, which is in no way difficult to manage or to flower if properly cared for. The flowers last a long time. It was named *Grammangis* by Reichenbach, and comes very near to the genus *Cymbidium*. W. HUGH GOWER.

SHORT NOTES.—ORCHIDS.

Burmese Orchids (R. E. E.).—We do not know where coloured drawings of these can be obtained, but nowhere in separate. Some will be found in the "Orchid Album," some in the *Botanical Magazine*, and some may be found in the pages of *THE GARDEN*.

***Cattleya Aclandiae* (J. Burchell).**—This I suppose is some inherent complaint brought about through bad usage, but what I cannot say without seeing the place it occupies. You may take it for certain that something is wrong with the roots. *Cattleyas* vary considerably in the time taken to ripen their seeds, but you may reckon upon twelve months. W. H. G.

Bignonia venusta is a well-known climber, and it is not often one cannot cut its brilliantly

coloured flowers for the house. A specimen in the large conservatory at Syon House is of interest, as it was one of the first plants that found a home in English gardens. It had been placed there about seventy years ago, when the conservatory was built. Even in the depth of winter *B. venusta* will bloom, the spikes of flowers being trumpet-shaped and rich orange-crimson in colour. It is not a suitable climber for a small house, being far too strong in growth and occupying too large a space. In such conservatories as that of Syon this plant is well placed.

ORCHARD AND FRUIT GARDEN.

PROTECTING FRUIT TREES.

GARDENERS are by no means unanimous as to the efficacy of various protective measures taken with a view to saving fruit blossom from frosts. Personally, I am fully convinced of the necessity for some kind of protection being afforded, but have not always been able to persuade friends that they err in taking no steps whatever in the matter. It does happen sometimes that quite as good crops are obtained from unprotected trees as from others taken the greatest care of, and the very first time I pitted my protected trees against those under the charge of a neighbouring fruit grower and which were left to take their chance, the latter were quite as heavily cropped as were mine, the same thing occurring during three years out of the four we were friendly rivals. One very strong argument advanced against the rough-and-ready systems of protecting trees, notably a free use of fish-netting, is the fact that the material used, unless particularly well supported clear of the trees, is liable at times to greatly injure the buds or blossom. When severe frosts follow very quickly upon rain the netting is covered with ice, and only needs wind to convert it into a very destructive medium. This it may also prove to be when in a dry state, especially in the case of Apricots, Plums, and Pears that are furnished with extra long spurs. When, however, the trees have been properly pruned in their younger days, the fruiting-spurs being close to the main branches and the latter in their turn fitting close to the walls, it is surprising what a little rough protection even will do. Take last season, for instance. Exceptionally severe frosts prevailed when the Apricots were flowering, again when the Plums were white with bloom, and especially severe at the time Peaches and Pears were in bloom. I should not have been surprised if all the fruits named had been complete failures, and they were, too, in nearly all cases where no protection was afforded. As it happened there was a great profusion of fruit-buds and flowers, and the crops were principally obtained from the spurs that hugged the walls. We had still severer frosts during the flowering period of 1891, very many fruit blossoms being destroyed, but, all things considered, last spring was the most trying of any that I can remember.

The advocates of the "trusting-to-providence" policy would in a verbal argument (they will not venture into print) retort that I have given an exceptional case, and to a certain extent I grant that this is so. Only to a certain extent, however, as fruit growers have only too good reason for grumbling at the unfavourable character of our weather, as a rule, during the flowering period of most of our fruit trees, this uncertainty of our climate being the greatest drawback that we have to contend with. What we have to do, and therefore, is to provide for the

worst as far as we can. The fact of having a considerable amount of glass devoted to fruit culture does not in the least lessen the need for taking every care of what is grown against the open walls on the same place, as plenty of uses can always be found for all the hardy fruit grown in this country, the best wall fruit being the most valuable. There is no necessity for going to a great expense in purchasing protecting material, though an exception to this rule might well be made in favour of Apricots. Very few succeed in growing this very delicious fruit satisfactorily wholly under glass, but where the soil and locality are favourable, Apricots pay well for being protected by glazed copings and blinds. I will go further, and assert that with the aid of these it would be possible in some instances to grow Apricots successfully where without them they had previously failed. I find that not only are the copings and blinds of the greatest assistance in saving the buds, flowers, or small fruit as the case may be, for all come to grief at times, but they also serve to forward the crops and to favour an early ripening of the wood. Especially is this the case immediately under glass, or say to a distance of 3 feet down the wall. I have seen the wood on this glass-protected part of the trees full of flower-buds, a straight line marking how far it was influenced by the coping, while on the lower portion of the tree very few buds had formed. This may point to the need of wall cases rather than copings only, but I do not wish to have these, being fully persuaded that the copings and blinds best meet the case. When a wall has been well covered with Plum trees, this also would pay for protecting with a glazed coping and blinds, or the latter with a broad coping only, a complete failure being then guarded against. More often than not poles and doubled or trebled fish-nets are all that can be afforded Plum trees, and this is frequently all the protection necessary.

Peach and Nectarine trees again are seldom so well protected as they deserve to be. If there is abundance of fruit-buds it is really astonishing how severe a trial some at least of these will stand. All the earliest to open, or it may be all that are most favourably placed as far as the fruit is concerned, are sometimes killed by frosts, and yet plenty be left to give a good crop. Board copings, poles, and fish nets doubled and hung slackly are generally used to protect Peach and Nectarine trees, but they are scarcely sufficient. Instead of fish nets, good frigi domo, cotton or canvas blinds reaching down to within 18 inches of the ground ought to be afforded. These may either be made about 6 feet wide and furnished with rings for running on wires strained respectively under a 9-inch or rather wider board coping, and stakes driven into the ground 2 feet from the wall, or they may be attached to rollers and drawn up and down with the aid of lines and pulleys as required—the last-named being perhaps the best method. In either case the severest spring frosts ever experienced during the flowering period of Peaches will be warded off, these blinds being even more effective than a glazed covering or wall case, unless the latter is in addition either heated or furnished with blinds. There is yet another point to be noted in favour of blinds for Peach and Nectarine trees. Those who are responsible should not be content to cover the trees only when severe frosts are anticipated, but ought to have the coverings run down or opened out every evening up till June. If not too dense they might well be left over the trees when extra cold easterly winds are prevailing, and thus protected the fruit makes better progress,

the young leaves are less liable to be badly blistered, and an early and strong growth of bearing wood is the result. In very many instances no young shoots worthy of the name are formed till nearly midsummer, and I need hardly add that these have but a poor chance of ripening properly.

It is not often that Pears are well protected from spring frosts, but they very frequently stand in need of such attention. Last season they flowered grandly, and in some few instances set good crops, but nearly all were sooner or later badly crippled by frosts, fruit near the size of marbles being destroyed. Fish nets hung slackly were not sufficient protection, though a similar covering has very frequently done good service. If in a position to do so I would furnish some of the best of the wall trees with broad copings and blinds, being of opinion that one season with another they would pay well for the outlay and extra trouble taken with them.

I. M. H.

ORCHARD HOUSE CULTURE.

SOME twenty or twenty-five years ago I strenuously advocated the culture of fruit trees and Chrysanthemums in the orchard house. The house should be heated for obvious reasons. When orchard houses were first built, it was stated that heating them was unnecessary for the cultivation of orchard house trees, and at first the late Mr. Thomas Rivers, of Sawbridgeworth, as well as the late Mr. John R. Pearson, of Chilwell, Notts, were both opposed to heating the houses. They must, however, have seen cause to modify their views in this respect after losing a crop by continued dull and cold weather when the trees were in bloom. Orchard house trees succeed admirably either in a lean-to with a southern aspect or a half-span. Give the trees all the light possible and provide ample ventilation top and bottom. It is well to be able to ventilate freely in case of excessively hot weather in summer. I notice Mr. Wilks remarks, in his paper read before the R.H.S., that Apricots had been an utter failure with him. I also found that they were a comparative failure with me year after year. The trees made capital growth and were yearly studded with blossoms, which dropped off in immense numbers, very few of them setting. Pears did not set so freely as Plums, but Peaches and Nectarines always set well. The fact is all of them require a dry atmosphere when the trees are in blossom, and Apricots would set freely in a house by themselves where no water was being sprinkled about owing to Strawberry plants occupying the shelves. Mr. Wilks does not allude to Strawberries, but they form a useful feature in the orchard house. I used to have between 300 and 400 6-inch pots filled with the best varieties of Strawberries. What I recommend, therefore, is Peaches, Nectarines, Pears, Plums, and Strawberries.

In January or February the trees should be placed in the house. In fact, as the house is wanted only for Chrysanthemums, besides the orchard house trees, there is no need to keep the trees out longer than the time the Chrysanthemums pass out of bloom. Severe frosts and drenching rains or melting snow cannot do them good, and it is possible that they may suffer to some extent if the weather is exceptionally severe. In Essex I never knew any of the trees suffer from exposure out of doors, the flower-pots in which they were planted being well plunged over the rims in cocoa fibre refuse. When the trees are placed in the house the roots will be excessively wet, and they will not require any water for some time, but the blossom buds will swell rapidly, and it must be seen to that they do not suffer from want of water. It is easy to make a mistake in this respect, for the trees may have been top-dressed in the autumn. This is done by removing a considerable portion of the exhausted surface soil, which will be found quite full of fibrous roots. The top part is filled up with

a compound of about equal portions of good loam and decayed stable manure, and in the spring it will contain few roots; consequently it remains quite moist, while the lower part being full of fibrous roots speedily becomes dust-dry. If any of the trees suffer from over-dryness the blossom-buds will probably drop off, especially those of the Peaches and Nectarines. This can be avoided by careful watering. If the weather is fine no artificial heat is needed, and air should be admitted freely on all favourable occasions.

When the trees are in blossom it is well to go over them daily and give each a rap with the hand or a stick once or twice. This sets the pollen in motion and causes some of it to stick on the stigma, but, independent of this, it is very desirable to use a small brush made of soft hair to convey the pollen of a free setting variety to the flowers of one well known to be a bad setter. When the sun shines let the air blow through the house and use the heating apparatus in dull weather, being careful neither to spill the water nor to run it over the rims of the pots. I have frequently observed that an otherwise good gardener when applying water to his plants could not be satisfied until he had poured in water until nearly every one of the flower-pots was made to run over. This is at all times a waste of water, and frequently a positive mischief. By careful watering, airing, and other general treatment there is generally a good set of fruit, except in the case of Apricots and Cherries, which I would recommend to be grown in a house by themselves. Thinning out the fruit and stopping and regulating the growths are all that is needed. The trees need abundant supplies of water in summer, and to be thoroughly syringed once or twice daily. By applying rich surface-dressings during the summer, keeping the trees clean and judiciously watering them, large fruit and of fine quality will result. The pinching back of the young wood is intended to keep the trees as dwarf as possible, but no pinching should be done after August. Trees four or five years old may be obtained to begin with, as it is a pity to lose a season by starting with very young trees. When the house is well furnished it will be found that in time many trees get rather bare, forming long, naked, scraggy stems. The best plan to keep up a supply of shapely trees is to purchase a few maidens every year. They should be ordered in the autumn, so that they may be sent home as soon as they are ready to move, which is usually in November. The bruised roots should be cut cleanly off and the trees be potted very firmly in 9-inch or 10-inch flower-pots. Plunge them out of doors as soon as they are potted into the moist cocoa fibre refuse; they will need no water at the roots, and no pruning should be done until they are brought under glass. The foundation of the tree has to be laid at the first pruning. There is generally one main shoot and numerous lateral ones. Cut the main stem down to about half its length, less or more, and the laterals should be left longer at the base of the tree than at the top part. By careful pinching and judicious training, such trees may be well furnished with fruitful wood the first year, and will produce fruit good enough the next season to win first prizes anywhere.

The above remarks apply particularly to Peach and Nectarine trees. Pears and Plums require rather different treatment. Two-year-old trees are the best.

The Peaches I recommend for pot culture are Alexander, Hale's Early, Early York, Galande, Royal George, Grosse Mignonne, Bellegarde, Noblesse, Barrington, Princess of Wales, and a tree of the Salway to come in early in November. Of Nectarines the best are Lord Napier, Stanwick Elruge, Violette Hative, Pine-apple, Spenser, Victoria. Of Plums there are numerous very good varieties—Green Gage, Transparent Gage, a splendid variety, Guthrie's Late Gage, Reine Claude de Bavay, Jefferson, Kirke's, and Coe's Golden Drop. The best orchard house Pears are Williams' Bon Chrétien, Beurré Superfin, Louise Bonne of Jersey, Doyenné du Comice, Marie Louise, Durendieu, Winter

Nelis, Josephine de Malines, and Easter Beurré.—J. DOUGLAS.

—Of late more attention has been paid to fruit trees in pots, but it is useless to attempt their culture in this way with a deficiency of labour or moisture. The orchard house is, I consider, an invaluable structure, even in a garden with little glass, as it can be used for so many purposes. For instance, in December it is invaluable for storing salads, such as Lettuce and Endive; earlier it comes in for Chrysanthemums; and when started early in the year it is useful for Strawberries when a shelf is placed near the glass. The best Strawberries in pots I ever grew were on such shelves over the pathway of an orchard house, as the plants are started slowly and get just the temperature required. In the spring bulbs may be got into bloom, and form a nice feature in the house. I have also grown Potatoes and Peas in pots with little trouble in this structure. Apricots scarcely ever succeed indoors, and in most places Apples may be grown in the open, so that Pears, Plums, Peaches and Nectarines do best. I am aware many Apples are grown in pots, but I do not consider it a profitable system when good results may be secured in the open. In all cases very little artificial heat is required. I do not say it is unnecessary, as a single flow and return pipe will be best to prevent extremes when in bloom and will be found most useful for the autumn flowers when the trees are in their winter quarters. On this last point there are diverse opinions, but much depends upon the management of the trees. I think if the roots are attended to yearly, the wood thoroughly matured, and the pots plunged well up to the rims in cocoa-fibre with free drainage on a hard bottom, it is a good plan to place these trees in the open. I never found any evil consequences ensue from this mode of treatment.

Root-pruning, shaking out the old soil and repotting are, I consider, the most important points in orchard-house culture, as if the large, strong roots are left to absorb all the nutriment, the fruit will drop prematurely and a gross growth will be the result. I would advise potting early and at the start to purchase young trees, not large ones. Early potting is important, and the size of pot must be governed by the size of tree. The compost should be good heavy loam with some thoroughly decayed manure and mortar rubble. The rammer must be freely used in potting, taking care to have the ball of earth firm, leaving no cavities. I consider repotting yearly of great importance, as the roots, being in a small space, absorb all nutriment from the soil in twelve months, so that without fresh supplies good results cannot be expected. Early in October removal out of doors should take place, repotting before all the leaves drop and taking care that what moisture is required is given, but excess after repotting should be avoided. Of course, repotting may be deferred if the trees are not placed in the open. As the trees get large, younger ones should be got in to take their place, as 16-inch pots are quite large enough for the trees when at their best. In severe weather, when no moisture of any kind is required, more cocoa fibre should be added. When selecting varieties, such kinds as Alexandra Noblesse, Noblesse, Royal George, Grosse Mignonne, Bellegarde, and Violette Hâtive should be included among the Peaches, with Lord Napier, Pine-apple, Pitmaston Orange and Victoria Nectarines, and Beurré d'Amanlis, Keele Hall Beurré, Souvenir du Congrès, Williams' Bon Chrétien, Louise Bonne of Jersey and Doyenné du Comice Pears. Many of the Gage Plums do grandly in pots, and such sterling kinds as Golden Drop, Jefferson and Kirke's give very fine fruits of splendid flavour. Cherries are difficult on account of their precocity, and are best grown separately, unless extra attention can be afforded them. They often succeed as wall trees if there is such accommodation, planting them out in a narrow border and feeding freely.—G. WYTHES.

Strawberries for forcing.—I quite agree with the remarks of "Grower" on page 102 as to the value of Vicomtesse Héricart de Thury for

early work, while for flavour and colour it is hard to beat. Plants we forced in April last year were planted out on a sunny border and yielded a very decent crop of fruit in September and October, which, I think, is a fitting testimonial to the value of this variety.—EDWARD CASTLE.

PEACHES FOR PROFIT.

"Y. A. H." says that I may not have had much experience in sending Peaches to Covent Garden. My experience is most decidedly in favour of selling them at home. I live on the south coast, with the Isle of Wight full in view, and at the time open-air Peaches are ripe, everyone with money to spend goes to south coast towns, and if the fruit were sent to London, it would very likely come down again to complete some of the special orders to which "Y. A. H." refers. But when Peaches fit to set on any exhibition table with a fair chance of success are marked or obtainable at any of our first-class fruit shops at about half what "Y. A. H." gets from the salesmen, it is hardly credible that they should continue to send to London for such perishable fruit as Peaches, which, however carefully packed, do not improve by transit or long keeping. As regards the statement of clearing £5 from a single tree of Dymond Peach, I see nothing to hinder the sum being made. In referring to imported Peaches, I stated that they were packed in pretty boxes to catch the eye; but "Y. A. H." says something else is needed to catch the salesman's eye, and with this I quite agree. Nevertheless, taste in packing is by no means a waste of time, and we have a good deal to learn from the foreigner in this way.

At page 118 Mr. J. Webber, writing in reply to "J. C. B.," refers to Peaches from the Cape, and says that, as they arrive at this time of year, they cannot affect the sale of our outdoor Peaches in autumn. Exactly so. But Peaches from the Cape are not the only imported Peaches we have to compete with, and if there are none in Covent Garden during September and October, that will explain some of the reasons for such high prices prevailing there, for in September and quite the latter part of the month and October, when our crop was nearly finished, I saw beautiful boxes of imported Peaches in the fruiterers' windows at Southsea and Ryde, and even in less fashionable Gosport. These, I was informed, came from California. The colour was splendid, and the price per dozen, with pretty box, laced paper and all included, would be enough to make "Y. A. H." stand aghast. Whether we are prepared or not to accept lower prices, I think there can be no doubt but that we shall have to do so.—JAMES GROOM, Gosport.

—I have read "J. C. B.'s" and "E. L. B.'s" criticisms on my article "Peach Culture for Profit." "E. L. B." appears astounded at the prices obtained by me, but to set his mind at rest it was "no clerical error," but a plain statement of facts. The fruits were sold for me by a well known Covent Garden salesman in Covent Garden Market. The only answer I can give to "E. L. B." and his friends as to their Peaches not fetching better prices, although they may have considered them first-class themselves, was that they were not first-class to the eye of the salesman when he received them; if so they would have made a better price. Covent Garden is still the best market for high-class fruit, and there is not a salesman of repute who would not say the same.

If I take "J. C. B.'s" estimate as the correct one of the prices to be obtained for good late Peaches in Covent Garden Market, I must consider myself a very fortunate individual. I should be very sorry indeed to be thought guilty of making misleading statements. To fortify myself against any such aspersion, I wrote to the gentleman who sells my Peaches as to whether what I stated was a fact. In his letter, which I have placed in the editor's hands, he says that I am "at perfect liberty to use his name as the salesman who sold my Peaches." Further, he says, "good

Peaches such as yours always sell well if they arrive in as good condition."

"J. C. B." also appears to hold very peculiar views *re* Peaches from the Cape. He appears to speak with authority on these also. I, in common with others, will watch for his reply to such an undoubted market authority as Mr. J. Webber. I certainly cannot see what there is for home growers to fear, and, as Mr. Webber points out, how can foreign Peaches affect the price of English-grown fruit, when, as he states, they arrive in this country during the first three months of the year? The value of a Peach is gauged by its lusciousness, as well as by its fine outward appearance, and this is not what foreign Peaches will ever have. Peach culture in the open air is what I take great interest in, and I have had fruits of Dymond, Stirling Castle, Walburton Admirable and Sea Eagle that I should not have feared staging against the best grown under glass. Ripening, as these do, after the house-grown fruit, they come in at a time when they command a good price. What other fruits are there which can take their place? Plums there may be in abundance, also Grapes and early Pears, but they are not so valued as a luscious Peach. Peaches, then, that fill this void, if well grown, graded and packed so as to arrive in the salesman's hands in good order, will command a good price. "J. C. B." also says that men who have been growers for a quarter of a century are not likely to be deficient in knowledge how to grow and pack Peaches. They should certainly not be deficient in knowledge, but if they receive such unremunerative returns, something must be wrong. I daresay the salesmen could put quite a different complexion upon this point, and would say that the fruits are often very badly packed, and by men who should know better. As regards "J. C. B.'s" query as to how I reconcile the sentences he quotes, I wished to convey it was on account of the quality or condition of the fruit as received in the salesman's hands not being of such a nature as to command the best prices.—Y. A. H.

GARDEN FLORA.

PLATE 898.

THE CORNELS, OR DOGWOODS.

(WITH A COLOURED PLATE OF CORNUS KOUSA.)*

ALL the Dogwoods known in cultivation are—with the couple of small herbaceous plants—shrubs or small trees, and all (with the exception of *C. capitata*, which is nearly or quite evergreen) are deciduous. The genus is distributed throughout Europe, Asia, and Temperate America; a few occur in Mexico and the Himalayan region, and one in Peru. All are readily raised from seeds, and nearly all can be propagated freely from cuttings. Those which do not strike easily are increased by means of layering. The herbaceous species (*Cornus canadensis* and *C. suecica*) like a damp bottom, and their slender underground stems run freely in a peaty soil or in a light rich ground. These are easily divided at the root. Many of the Cornels are very desirable shrubs, and are capable of being turned to excellent account in the park and pleasure garden, or along watercourses, &c., in wild unkept spots. The shoots of *C. alba* and *C. alba sibirica* afford a bit of colour which in winter is particularly conspicuous; indeed, the younger growths of the variety *sibirica* are a beautiful red, deeper coloured and brighter than that of the growths of any shrub which is hardy in Britain. A bed of this, with a carpet of Winter Aconite in full flower, on one of the lawns at Kew is at the

* Drawn for THE GARDEN in the Coombe Wood Nursery by Miss Hamilton, June 21, 1892. Lithographed and printed by Guillaume Severeys.



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present moment one of the most pleasing combinations in our national garden.

CORNUS ALBA, the white-fruited Dogwood, is a native of Siberia and Northern Asia. It is not found wild in the United States, as stated by Loudon. Doubtless the somewhat similar *C. stolonifera* was formerly mistaken for the true Asiatic plant. Growing to a height of from 5 feet to 10 feet, with slender branches clothed with bright red bark, this produces a charming effect all through the year, either in a mass or as a specimen plant on an lawn or in the shrubbery. The flowers, white or cream-coloured, are produced in crowded cymes, and are followed by white fruits. The variety *Spathi* is one of the finest and most satisfactory—in our climate at any rate—of shrubs with coloured leaves. It was sent out some years ago by the famous Berlin nurseryman after whom it is named, and from whose catalogue we learn that it originated in his own nursery as a graft-sport of the common *C. alba variegata*, being produced on

lowed by deep blue or blue-black berries borne on bright red stalks. The species owes its name to the fact that the branchlets and leaves, instead of being opposite to each other, as in most of the other species of the genus, are alternate. From *Garden and Forest* we learn that *C. alternifolia* has been largely planted in the Arnold arboretum in many situations and has proved satisfactory in all of them. It is perhaps most ornamental as it stands near the margins of the roads, and has been given sufficient space to send out its wide-spreading branches. Full-grown plants make beautiful pyramids with branches arranged in flat, horizontally-spreading tiers.

C. ASPERIFOLIA.—A native of the Eastern United States from Ontario and Iowa southward to Carolina, &c. It is a tall, erect-growing, distinct species, with reddish brown branchlets, roughly hairy narrow leaves and small flowers, followed by showy white berries produced in red-stalked clusters. This species grows naturally in dry or sandy soils.



Cornus florida.

the stock below the graft. In spring the leaves are bronzy, in summer deeply and irregularly margined with gold. The habit of the plant is vigorous, the variegation constant, and the foliage does not scorch in bright sunlight, as is the case in not a few plants with golden variegated leaves.

C. ALBA SIBIRICA is dwarfer in habit than typical *C. alba*, but has still brighter coloured bark. Nothing is definitely known of the origin of this charming shrub. Apparently the first mention of it is in Loddiges' catalogue for 1836. There is a form of this variety with variegated leaves, but it is not so desirable as the type.

C. ALBA GOUCHAULTI is another variegated-leaved form of no particular merit. It was recently distributed from some of the French nurseries.

C. ALTERNIFOLIA is found wild in rich woods and along borders of streams and swamps from New Brunswick, Nova Scotia, &c., and south along the Alleghanies to North Alabama, &c. It forms a shrub or tree from 5 feet to 25 feet high, with deep green bark. The pale yellow flowers are produced in clusters in great profusion, and are fol-

C. BAILEYI.—The only figure of this plant is that given in *Garden and Forest*, iii. (1890), p. 465. It has only been properly distinguished and described since 1890, but seeds have been received in this country, so it will doubtless before long be well known. It extends from the region of the Great Lakes into Canada, and is distinguished from *C. stolonifera* by its erect habit, by its not being stoloniferous, by the duller and browner bark, the pearly white fruit, and the white wooliness of the lower leaf surfaces. It grows on the sand dunes about the lakes, "often in the loosest, shifting white sands," as Professor Bailey writes, and flowers continuously all summer from June to September.

C. CANADENSIS (the dwarf Cornel or Bunchberry) is a pretty little herbaceous plant with creeping underground rhizomes and upright simple stems from 4 inches to 8 inches high. The leaves are scarcely stalked, and are mostly in an apparent whorl of four or six near the summit of the stems. The true flowers are minute, but the four rather large white or cream-coloured bracts are conspicuous. The berries are red and show well above the

short stems; in taste they are sweet and palatable. This species grows in Japan, Mandschuria, &c., and across the continent of North America, extending as far north as the Fir forests.

C. CAPITATA.—Perhaps this plant is more widely known under the name of *Benthamia fragifera*. It is a sub-evergreen tree, a native of North India, China, &c. Unfortunately, it is not hardy in this country, except in Devon, Cornwall, &c., where some remarkably fine specimens exist. In the gardens of Mr. R. G. Lake, Trevarrick, St. Austell, some trees are about 40 feet high, and the trunk of one is 5 feet in diameter at 5 feet from the ground; these are believed to be the largest in this country. There are numbers of fine specimens at Trelissick and also in the gardens of Mr. J. Rashleigh, Menabilly, Par. The large bracts, white tinged with pink or rose, make this one of the most beautiful trees when in flower, and the large clear red fleshy fruits, somewhat resembling a Strawberry in appearance, make it equally attractive when in fruit.

C. CIRCINATA.—This is conspicuous by reason of its large round leaves, which are 4 inches or 5 inches long and 3 inches or more wide, and its clusters of bright blue fruits, each individual being about the size of a Pea. It is 3 feet or more—rarely reaching 10 feet—in height, and has rather rigid erect stems covered with warted bark, which is at first pale green and later becomes light brown or purple. The flowers are small, yellowish white in colour. A native of the Eastern United States.

C. FLORIDA (the Flowering Dogwood) is very showy in flower, scarcely less so in fruit, and very beautiful in autumn when the leaves change colour before falling. Unfortunately, we do not obtain sufficient summer-heat to thoroughly ripen the wood, and so the flowering of this species in Britain is a rare occurrence, although it was one of the earliest amongst North American shrubs to find its way to British gardens. In "Hortus Collinsonianus" the following memorandum appears: "1761, May 17. Invited by Mr. Sharp, of South Lodge, on Enfield Chase, to dine and see the Virginia Dogwood; the calyx of the flowers (wonderful to see) are flowers as large as figured by Catesby, and (what is strange) it is the only tree that has these flowers amongst many hundreds that I have seen, and it began to bear them in 1759." Are there flowering specimens of this in Britain now, and if so, where? I saw it in fine flower many years ago in Northern France, and ever since then have longed to see it bloom in this country, but in vain. Perhaps if grown against a wall in a sunny spot the wood might get sufficiently ripened to produce flowers.

Referring to *C. florida*, Professor E. L. Greene thus writes in *Garden and Forest*:—

"One of the delightful unfading pictures in our memory of eastern woods in their June glory is that of the shrub or small tree known as Flowering Dogwood. A full-grown specimen with its wide-spreading and stratified branches, each ultimate twig bearing a large white cruciform involucre, which commonly passes for a corolla, is an object of striking beauty in the forest glades where it occurs." In its northern habitats it forms only a low shrub, whilst in the Southern States it makes a tree 20 feet or 30 feet high. *C. florida pendula* is a very decided "weeper," and is worth growing as a curiosity. *C. florida rubra* has in reality delicate pure pink bracts and not deep red ones, as figured in some American catalogues. The leaves have a soft velvety appearance and are darker green than those of the type.

C. KOUSA.—A glance at the illustration of this species renders description unnecessary. It is a native of Japan, and was exhibited in fine condition by Messrs. J. Veitch and Sons at one of the meetings of the Royal Horticultural Society in 1892. It is quite hardy, but needs to be thoroughly well established and several years old before it really shows to advantage. The flowers are produced in May and June.

C. MACROPHYLLA.—This occurs from North India to Japan. It is a handsome shrub or small tree of vigorous habit, and when old produces a profusion of large showy clusters of small cream-

coloured flowers. *C. brachypoda* is united with this now by botanists who have studied the genus, and the following names also represent plants we have seen in gardens and cannot distinguish from *C. macrophylla*: *C. glauca*, *C. Religiana* (perhaps *Regeliana* is meant), *C. Theleriana*. There is also a variegated form of no particular merit as an ornamental plant.

C. MAS (the Cornelian Cherry or Jew's Cherry).—Although the individual flowers of this species are small they are produced so freely by old trees, that, perhaps with the exception of the Witch Hazels and *Jasminum nudiflorum*, there are no large shrubs flowering in February or March which can vie with it, the clusters of bright yellow flowers being very conspicuous on the leafless twigs. Old trees fruit freely. The type bears elliptical fruit half an inch long or more, bright red and individually as handsome as a Cherry or small Plum. On the Continent in many places selected varieties are grown for the sake of the fruit, which is excellent for preserving. Amongst the forms are some with yellow, bright blood-red, and violet-coloured fruits, and another with fruit much larger than that of the wild type. Koch recommends *C. mas* as a hedge plant, and no doubt it would make an effective and pretty fence. The Cornelian Cherry is a native of Central and Southern Europe, and sometimes attains 20 feet in height. There are many fine-foliaged varieties; the best are *C. mas variegata*, a pretty shrub with white variegated leaves, and *C. mas elegantissima*, with gold and green leaves often suffused with red.

C. NUTTALLI is the western representative of the eastern *C. florida*, and is even a more beautiful tree. In its native habitats it sometimes attains a height of 50 feet or 60 feet. Generally it has six large, broad white bracts 2 inches or 3 inches long, so that the so-called flower measures 4 inches or 6 inches across. It is one of the most beautiful trees in the forests in many parts of California and Oregon. *C. Nuttalli* has been recently introduced to European gardens, and no difficulty is experienced in its cultivation. Perhaps when a few years older it will succeed better—as far as flowering is concerned—in our climate than *C. florida*. In some parts of the Eastern United States it cannot be persuaded to live more than a year or two; seeds germinate there freely, but the seedlings die before they get a foot high.

C. OFFICINALIS takes the place in Corea and Japan of our Cornelian Cherry, which species it nearly resembles in general aspect. It may, however, be readily distinguished from *C. mas* by the tufts of rusty-coloured hairs in the axils of the principal veins of the leaf. It is quite hardy in England.

C. PANICULATA has flowers whiter than most of the other North American species. They are produced in panicle clusters in great abundance, and are followed by showy fruits varying from white to pale blue in colour. Sometimes it attains tree-like dimensions (20 feet). It has smooth grey bark, narrow, pointed, pale leaves, green on both surfaces, and likes moist positions.

C. PUBESCENS.—This occurs from Southern California to Vancouver Island and British Columbia. It forms a shrub from 4 feet to 12 feet high, and has smooth purplish branches, with more or less hairy branchlets and oval or ovate-acute leaves, whitish and silky beneath. The white flowers are borne in compact cymes, and are followed by white fruit.

C. SANGUINEA.—Our native Dogwood is not so ornamental as most of the species already mentioned, and its dark dull red bark is not nearly so bright and effective as that of *C. alba* and its varieties. *C. sanguinea candidissima* has light yellowish green bark, and is a curious and interesting form. The variety *latifolia* has much broader, larger leaves than the type. A variegated form is not worth a place in the shrubbery, as the coloration is not decided and by no means constant.

C. SERICEA has yellow rather than white flowers, which are borne in rather small clusters, but these are produced in such abundance as to render the plant very ornamental when in bloom. The habit,

too, is excellent; the long graceful branches spread over the ground and form fine masses of foliage. The bark is dull purple in colour and the fruit is a pale blue. This species likes wet ground, and grows from 3 feet to 10 feet in height. It is a native of the Eastern United States.

C. STOLONIFERA, the red Osier Dogwood, is widely distributed throughout the Northern United States. It spreads and multiplies freely by prostrate or subterranean shoots, and grows 6 feet or 8 feet high. The leaves are light green above and paler beneath. The fruit varies from white to lead colour. In winter the growths, especially those of the previous season, are of a bright red-purple colour. In its native habitats it affects wet places, but in Britain I have seen it do well in dry ground.

C. SUECICA is a native of Northern and Arctic Europe, Asia, and North America. In Britain it occurs on high moorlands from Yorkshire northwards, and ascends to 3000 feet. It is a charming little plant, flowering in July and August, with conspicuous, rather large white bracts, followed by red drupes. This species, like *C. canadensis*, grows but a few inches high and produces unbranched stems from slender creeping rootstocks. It should be grown in light soil or in peat under the shade of bushes on the rockery. N.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

TOP-DRESSING ASPARAGUS BEDS.—The time has now arrived for putting the Asparagus beds in order for the season, and the way to proceed will depend upon what treatment the beds have hitherto received. I have previously urged the importance of leaving the top-dressing until this season of the year, knowing the injury that often accrues to the roots through covering up the beds with rotten manure during the preceding autumn, especially on cold land. The way to proceed will obviously depend upon the formation of the beds, whether on the level or raised and narrow with alleys between. If the former, all that is needed is to first go over the beds and clear off any weeds or rubbish which may be lying about. Well-rotted manure and burnt garden refuse are capital for top-dressing. They should be used in equal parts if there should be a sufficient quantity of the refuse, and be spread equally over the surface to the depth of 2 inches. Before adding the manure it should be well broken up with a fork.

RAISED BEDS.—With these the mode of procedure is somewhat different, and it is with these that mistakes are often made. It is all very well dressing the beds over and making them neat, but it is a different thing paring the sides down, exposing the side roots, and piling the material on to the surface until the roots are deep down and away from the influence of the sun. Moreover, by being so deep down it is impossible for growth to take place so freely as when nearer the surface. Where the crowns are not low down, the same depth of material should be spread over the surface as for those on the level. When the beds have not been satisfactory it may be through there being too heavy a covering of soil over the crowns. If so, carefully fork over the surface and remove it down to within 2 inches or 3 inches of the crowns, on this placing the rich top-dressing. Artificial stimulants will not be needed until growth commences.

EARLY CELERY.—It is now time the main crop of early Celery was sown, and it behoves those who have a supply to maintain to afford generous treatment from first to last. Stunted plants will never succeed well, and the greatest care must be taken that the seedlings from the earliest stage do not receive any check, or "bolting" will follow. More often than not there are far more seedlings raised than there is any need for; therefore, if the seed is to be raised in a box, take care to sow it thinly so that the plants may become strong. After sowing place in a gentle heat such as a vinery or Peach house just

stated or even on a mild hotbed. A light position near the glass in a cooler house is the best place for the plants after the first rough leaf is seen, but the temperature of the structure must be genial, as an arid atmosphere which more often than not is draughty will most surely check growth. If the weather is favourable place in a cool frame, the box being elevated on a pot if likely to be too far away from the glass. Where a number of plants is required the seeds may be sown on a gentle hotbed, taking care that the soil is made firm beforehand, as the seedlings do not appear regularly on a loose soil. If left exposed to the sun the soil is apt to dry quickly; therefore, take the precaution to keep it regularly moistened and shaded from the sun.

SHALLOTS AND GARLIC.—Unless Shallots are well ripened and firm they lose much of their value. There is no set time for planting as long as the bulbs are put out early enough to enable them to ripen off early, as if planted late they have a tendency to keep on growing. Select any time from the present when the weather is favourable until the middle of March. The soil must be fertile and gritty, but firm and the position sunny. Plant in rows a foot apart, the bulbs being planted at 6 inches between. The bulbs must be pressed into about half their depth. Garlic must be planted up to the neck.

AUTUMN BROCCOLI.—This takes a fairly long season of growth before being fit for cutting, the character of the season also making a difference in this respect. During an early and favourable spring when small seeds will germinate and start quickly into growth, plants sufficiently early may be had by sowing during the first week or two of March, but the best course is to make a sowing under glass for the earliest cutting, and on cold soils in late districts this is a course I can strongly recommend. The seeds should be either sown in a box and the seedlings be pricked off, or on a gentle hotbed. Good plants may also be raised under a ground vinery or some such protection, the precaution being taken to prepare a bed of light and friable soil. A sowing should be made in the open air about the middle of March, the plants from this coming in useful for late cutting or for taking up for protecting in pits. This is a most useful crop, and every care should be taken that good plants are provided. Plants raised at this date last season under glass proved to be the main crop, as those raised in the open were very late on account of the cold and backward spring.

A. YOUNG.

FRUIT HOUSES.

FRUITING PINES.—Some of the late autumn-started plants will now be showing a little colour in the fruit, and these should be kept somewhat drier at the roots and rather more air than formerly be given, or otherwise the centres may be faulty and the quality generally not all that could be desired. Those still swelling their pips ought to have the benefit of a brisk bottom-heat, 90° being none too much, and must be kept uniformly moist at the roots. The pots being well filled with roots, give weak liquid manure at each watering, guano dissolved at the rate of 2 ozs. to three gallons of well-heated soft water being a good change, with diluted farmyard liquid manure. The batch of Queens started early in January ought now to be making good progress, though the long spell of sunless weather has considerably retarded flowering. Not till the latter period is past should overhead dewing be practised, and then only about three times a week—always on bright days. After the flowering is over, also constantly maintain a more moist atmosphere by means of frequent damping down of walls, beds and floors. Keep the bottom-heat as near 90° as possible, the top-heat ranging from 70° by night to 75° in the daytime, rising to 80° with sunshine, after which air should be given in increasing quantities, always closing early enough to run the temperature up to 85° for a time. Treat at the roots as advised in the case of the other plants with swelling fruit, being careful not to over-water. Any that failed to show

fruit with the rest should be kept perfectly dry at the roots, and this will most probably start them in time to form a good succession.

SUCCESSIONAL AND YOUNG PINES.—Keep any that are to be started about three weeks or a month hence somewhat on the dry side at the roots, and avoid exciting them by any sudden great increase of either bottom or top-heat. Suckers taken off last autumn and well rooted in 6-inch or rather larger pots ought now to be shifted into fruiting sizes. These may be either 11 inches or 12 inches in diameter, the former answering well as a rule, and should be clean and well drained. Use a compost consisting of roughly broken-up brown fibrous loam of the best quality procurable, discarding the finer portions, and to every bushel of this add a 5-inch potful of bone-meal and a sprinkling of soot. Failing good fibrous loam, use the best loam procurable and add an equal quantity of brown fibrous peat. Any plants found in a dry state at the roots should be watered prior to being repotted, and those not well rooted, the soil being in a loose sour state, should have the greater portion of the latter pricked away from the roots, also in all cases pulling away what faulty small lower leaves there may be. Pot rather deeply and firmly; this, in addition to steadying the plants, will also cause them to emit roots freely from the buried portion of stems. Plunge at once in a brisk bottom-heat of about 85°, disposing them not less than 2 feet apart, the top-heat to range from 60° to 65° by night, with a rise of from 5° to 10° in the daytime, closing the house early enough on sunny days to raise the temperature to about 80°. Maintain a rather moist atmosphere and lightly spray the plants overhead two or three times a week. Supposing the potting soil was, as it ought to be, in a rather dry state when used and also well warmed through, a watering should be given soon after the plants have been plunged.

FIGS.—Trees in pots started early are doing well, and may safely be subjected to rather higher temperatures than formerly. The night temperature should be kept at about 60°, increasing to 65° and 70° in the daytime, the latter figure being with sun-heat and air. Close early enough to raise the heat to 75° for an hour or so. If the house is kept too moist and close, the young wood will be soft and the second crop lighter accordingly. The young shoots ought not to crowd and shade each other, and an early removal of superfluous inner branches is advisable. Also freely thin out the fruit if very numerous, and pinch out the point of the reserved shoots at the sixth joint. Now that the roots are active and there is also a heavy strain upon them, keep them well supplied with liquid manure and give a top-dressing of rough fibrous loam and a little good flaky manure. Planted-out trees, started from the middle to the end of February, should give a good crop of ripe fruit in June and another in September. Unless these are comparatively young trees and disposed to grow more strongly than desirable—in which case nothing to aggravate the evil should be done—first give the borders a thorough soaking of warm water or, in the case of old trees, liquid manure, and then top-dress heavily with loam, manure, and fine mortar rubbish. A night temperature of 55° is quite high enough for the first three weeks or month, after which it may be increased to 60°, increasing the figures in the daytime from 5° to 10°, according to the weather, and closing early enough to raise the heat to 75°. Syringe the trees, walls and floors freely twice, and later three times, a day. Trees in unheated houses should be allowed to start naturally, and when well on the move give air in moderate quantities and close early, syringing freely at the same time. In this manner the fruit can be brought on to ripen in advance of outside crops, and in very hot positions a late second crop can sometimes be had. Figs in unheated houses must be kept thinly trained, the points of young branches being laid in at least 9 inches apart, as they form extra strong foliage. It is not yet too late to thin out and train the trees afresh.

STRAWBERRIES IN POTS.—There has been so little sunshine this year that Strawberry forcing goes on very slowly. Those in flower ought to be

gone over towards noon every day and be lightly touched with a good-sized camel's-hair brush. Thus treated they will set and swell regularly, but if only half fertilised, small, imperfectly formed fruit is the usual result. Keep them well supplied with water and liquid manure, but avoid saturation, this latter being denoted by the sickly yellow hue of the young leaves. When a good crop of fruit is set, gradually reduce the number to seven or eight on a plant and also remove all late flowers. If there is any green-fly on the plant, fumigate with tobacco paper while yet this can be done without tainting the fruit. Shelves in various houses ought now to be filled with plants, so as to have plenty coming on to take the place of those that have given ripe fruit, certain shelves in convenient positions in forcing houses being kept constantly filled with plants either just coming into flower or with fruit already set upon them. It is in a strong heat and moist atmosphere where the finest, if not the best-flavoured fruit is produced. Avoid the use of troughs with water always standing in them, but prefer rather to cover the shelves either with thin turf or fresh Moss.

PRACTICAL.

PLANT HOUSES.

STOVES. CLIMBERS PLANTED OUT.—Whilst potting is being carried out, those climbers which are planted out into beds should have all necessary attention. Where confined to brick pits and it is evident that a further extension would be beneficial to the plants, this work should be done if possible, so that fresh soil may be added. Where extension in this way is not practicable, a good top-dressing at least ought to be given, selecting soil of lasting properties. In some cases these climbers may have already run a good course and be showing symptoms of declining vigour. These should have a goodly amount of soil removed from around them whenever it is found to be in a bad state. When this is done, some sand is a capital thing to use first, dashing it amongst the roots. After that all may be again made good with fresh soil. Where climbers have not thus far been grown in this manner, its adoption may in many cases be attended with the best results. The *Stephanotis* can in this manner be easily managed. More flower, and that in a continuous fashion, can be ensured than by pot culture. *Allamandas* come under the same category, only they must not have unlimited root-action allowed them. *Aristolochia elegans*, if not a showy, is at any rate a beautiful climber, and one that thrives well planted out, and that even when in poor soil. *Cissus discolor* may thus be grown also, affording a quantity of shoots for cutting. *Clerodendron Balfourianum* and *Bougainvillea glabra* are both inclined to grow too strong if not limited at the roots. *Passiflora princeps* will, however, do well planted out. Any climbers which have for a few years been growing in pots and are in a measure starved or stunted will have quite a new life put into them by planting into a well-prepared border. There is also another aspect of the utility of climbers; it is that of affording shade where it is not always expedient or convenient to employ blinds for the purpose. By training the climbers somewhat thinly they will answer the same end, shade-loving plants being those chiefly grown under them.

BASKET PLANTS.—These must not escape notice. Do not postpone any needful work amongst them any longer, or it will be more than probable a convenient time will not be found. Do not hesitate to remake them up where necessary; it is work that will soon repay itself. The *Nepenthes* will come under this heading; these must be dealt with carefully. Excess of soil for them is prejudicial rather than otherwise. Having attained to a fairly good sized basket, the same size can be kept to by exercising care in removing defective soil and substituting in place thereof some fresh which is full of fibre. The most fibry portion of peat—peat of a wiry character—is the best material, with some bits of charcoal and some sand. Plants which are grown too tall should be headed down; the top can then be

struck in a brisk heat. Small plants should have larger baskets provided for them where necessary without greatly disturbing the roots. Any pitchers that are growing shabby should be cut off. For a time now the chief point to observe is that of encouraging a new and healthy growth; pitchers will then follow in due course. Do not yet allow the plants to be too close to the glass unless there are means for covering up the outside during cold winds and frosts. Although not requiring so much water now as when in active growth, they must not, nevertheless, be allowed to suffer at the roots, nor should they be kept in too dry an atmosphere. Of other basket, or suitable plants for baskets, note might very well be taken of *Hoya bella*. In pots it does not always succeed as one would wish it to do; where such is the case it should be tried in a basket, using peaty soil. For a moist stove the *Eschynanthus* is a beautiful genus of plants to cultivate, not requiring a great amount of root room. On the other hand, in a dry house the variegated Pine-apple is exceedingly pretty when grown as a basket plant. *Torenia asiatica* also makes a lovely basket plant, being much better than *T. Fournieri* in this respect. For quick growth the best forms of *Tradescantia* should be noted. In any case this is a very good time to see to the work.

BOTTOM-HEAT, &c.—Any contemplated assistance to newly-potted plants by this means should have immediate attention, 85° being taken as the maximum, so as to give help when it is most needed. It is an assistance for a little time to *Ixoras* until they are again established. For *Allamandas* it is not required, save in the case of *A. grandiflora*, which starts afresh more kindly if assisted at the roots for a little time. *Eucharis* that have been shaken out and repotted are also assisted. *Alcasias* may also with advantage be plunged for a time, but *Caladiums* and *Anthuriums* never need be plunged at all, unless weakly. To employ bottom-heat indiscriminately is unwise; it is, as the saying goes, "a good servant, but a bad master." With the potting finished, a slight increase in the temperature should be given; 65° at night will be ample with an increase of 10° or 15° by day, a genial moisture being kept up by using the syringe lightly and keeping the evaporating troughs filled. Exercise every care with the watering until plants are again rooting freely. Now is the time when more harm is done by overwatering than at any other period, for if the soil be soddened at the start, half the purpose the plants were potted for will have been time and material wasted. Spare no exertions in subduing and exterminating the mealy bug; this insect will now increase apace if left to itself. Others, in the form of insect pests, should be sought out in good time; it will save labour later on, and annoyance also where any pride at all is taken in a clean lot of plants. J. HUDSON.

ORCHIDS.

WE have still plenty of repotting to do, and in the case of Orchids which do not require repotting annually or even periodically, it is very desirable that the date should be put upon the label. I noticed to-day, for instance, that a group of specimen plants of *Lælia purpurata* contained amongst them a few plants not so green or healthy-looking in the foliage as the others, and this had just become noticeable. On referring to the labels I found that each of those plants not so healthy-looking had been potted in July, 1889. The more healthy plants were repotted last year or in 1891; some of them in the spring after growth was completed and others after the flowering period was over, and I do not observe any difference in the health or vigour of the plants whether they were repotted in the spring or late summer months. The plants of *Lælia purpurata* which have not been repotted since July, 1889, have now been placed in larger flower-pots, using the best fibrous Orchid peat we could get. As the plants are large, the peat has been broken up into pieces as large as a duck's egg, and the finer particles have been sifted out

of it; clean potsherds and a few pieces of charcoal are also mixed with the peat, and a third part of the whole consists of clean washed Sphagnum. The flower-pots for these are filled to half their depth with drainage loosely placed in. The plants of *Cattleya labiata* also need repotting, and this has also been seen to; they are treated the same as *L. purpurata*, and require the same temperature—the warmest part of the *Cattleya* house. There are many other Orchids which have passed through the resting period that are now ready to start into growth with increasing light and warmth; some of them require repotting and some do not. The *Anguloas*, such as *A. uniflora*, *A. Clowesi*, and *A. Ruckeri*, are showing growths and flowers together. They have been allowed to become quite dry during the winter months, and have had a good soaking with slightly warmed rain water to thoroughly moisten the compost. I have frequently repotted these *Anguloas* in June and July, and think that is perhaps the best time to do it; at any rate it is not well to disturb them when they are in growth and new roots are rapidly being formed. The *Thunias* are another class of Orchids which are laid aside during winter and receive no water when they are at rest. When the plants are turned out, it will be found that there are no live roots attached to the long rod-like stems. They should be repotted in a compost of peat and Sphagnum, with the addition of fibrous yellow loam and coarse white sand; sticks are needed to keep the plants from falling over. Place three good plants in a 6-inch pot; five or more in larger ones. Single plants will flower well in $4\frac{1}{2}$ -inch flower-pots. I find they do best in the warmest house, especially *T. Marshalliana*, which is rather shy flowering; *T. Bensoniæ* and *T. alba* are freer. *T. Veitchiana* is a garden hybrid between *T. Marshalliana* and *T. Bensoniæ*, and doubtless requires the same treatment. It is a lovely plant and quite intermediate. When the plants start into growth, keep them well up to the roof-glass. The *Calanthes* are year by year becoming more important, and as their season of blooming lasts so much longer, it may be well to repot them at an interval between. I allude, of course, to the deciduous section. *C. vestita*, *Limatodes* or *Calanthe rosea*, and all the garden varieties raised from them that have had sufficient rest should be shaken out of the flower-pots or pans in which they flowered and be at once repotted. Some persons plant one bulb in a small pot, others a number of bulbs in larger flower-pots, according to the size of the flower-pots or pans. I put three large bulbs in a 6-inch flower-pot and three smaller ones in a 5-inch pot. The flower-pots are drained well to the depth of 2 inches or 3 inches. The potting compost is two parts fibrous loam, one of fibrous peat, and some dry decayed cow manure. A little coarse white sand is excellent to keep the compost open. I use the potting material in a moderately moist condition, and do not give any water to the bulbs for a week or more after repotting them. There are no live roots to take it up until some growth has been made, and water must be very carefully applied at first. They do best in the warmest house from the first.

The genus *Mormodes*, the *Catasetums* and the *Cynoches* form not only an interesting, but a quaint and beautiful part of the Orchid family. They may be taken together in regard to the treatment they require. Being deciduous, they require a season of rest and scarcely any water at that time. The plants may now be turned out of the flower-pots in which they were growing and be repotted. Some of them may be grown in baskets, where they can be placed almost in immediate contact with the glass roof. After repotting, care must be taken not to water much until the roots have run well into the compost. Most of them are very strong-growing plants and produce roots freely when in full growth, and at that time need a plentiful supply of water. They mostly thrive well in peat and Sphagnum. Of the *Mormodes* the best are *M. luxatum eburneum* and a sub-variety of it with red spotted flowers, *M. pardinum* and the wonderful *M. Colossus*. Of *Cynoches*, the recently introduced *C. pentadactylon*

is a striking and handsome species, but being in flower now it would not require repotting. *C. chlorochilon* flowers in July. The most striking *Catasetums* are *C. Bungei*, *C. Christyanum*, *C. macrocarpum* and *C. scurra*. Orchid amateurs are beginning to take more to this class of plants; they cannot, of course, displace the more useful *Cattleyas*, *Lælias*, *Dendrobiums*, *Odontoglossums*, *Cypripediums*, &c., but they should find a place in every garden. Advance the temperatures a little now, and the houses may be shut up to catch the sun-heat in the afternoon. If the houses run up about 10° extra by sun-heat, it will do the plants much good. The shading will soon be wanted for all the houses, and should be ready to put up on the shortest notice. *Cattleyas*, *Lælias*, *Dendrobiums*, &c., need not be shaded for some time yet, but in March the sun is hot enough even for them.

J. DOUGLAS.

FLOWER GARDEN.

THE ROCK GARDEN.

GENERAL HINTS ON ARRANGING THE STONES WITH REGARD TO EFFECT.

WHEN forming a rock garden our models should be not the mountain peaks, but the charming bits of picturesque scenery where natural rocks are more scattered, in one place emerging from the surface of the sward, in another assuming bolder forms, perhaps cleft asunder and shattered by volcanic forces of bygone ages, or traversed by a streamlet dashing over boulders and through a winding ravine with shady nooks and bold promontories. A fault in most artificial rock gardens is that they are not, as a rule, sufficiently broken up, and appear clumsy on that account. Variety is charming in everything, but in a rock garden it is doubly so. We should endeavour, therefore, to introduce as many different features as possible. Nothing can be more monotonous than a continuous mass of stones. The rock garden will appear very much larger than it is in reality if the rocks are carefully distributed, with pieces of lawn, borders for bulbs and perennials, paths or rocky steps, &c., intervening at irregular intervals. The rocks themselves should be arranged in groups of various sizes. The larger groups forming the bolder and more massive parts in the main body of the work should be closer together than the smaller ones, which might be kept farther apart and diminish in size towards the outskirts of the alpine garden. Even if the rock garden is on a grand scale and contains features of the boldest and wildest type, it should be suitably amalgamated with the surroundings, and for this purpose we can have no better means than small groups of scattered rocks projecting from the surface here and there, and forming, as it were, a connecting link between the lawn and the rock garden. The value of such small groups emerging from the ground cannot be over-estimated; not only do they enable us to grow some of the choicest gems of the alpine flora, but they are also suggestive of continuous masses of natural rock underground which occasionally have forced their way through the sward, as we so often see in the delightful pastures of the Alps. When arranging such groups care must be taken to have the stones let into the ground sufficiently deep to hide their bottom edges. Without this precaution the effect would be lost.

When speaking in my previous notes about the selection of the stones I hinted that all stratified rocks should, in the rock garden, be manipulated in a manner different from that

applied to the unstratified kinds. As the origin of the former class is always shown in nature by more or less distinct strata, we should to some extent imitate this natural formation. It does not follow, however, that because these rocks were originally deposited in horizontal layers, we should give them that position in our rock gardens by imitating exclusively horizontal strata throughout the work. Such a plan would not only tend to make our work more monotonous by painfully evident repetition, but it would also make the rock garden unfit for the choicer kinds of mountain plants. In Nature, it is true, we may see miles of such rocks, but can they in any way be compared for picturesque effect to other rocks of the same kind, which, through upheavals or by volcanic action, have been torn asunder, and are scattered in wild profusion? On closer examination of such spots we will find rocky masses deposited in blocks or groups of varying sizes, but the strata in each show every conceivable angle of elevation, sometimes even a totally opposite direction from that seen in the next group, although in each individual block the strata may be parallel, no matter at what angle.

Here, again, Nature is showing us the right way, and teaching us a most valuable lesson. Even if the rock garden is on the smallest scale, there is no need whatever to adhere to only one kind of formation, as is so often done; but if the work is of larger proportions, a variation of the strata is still more important, as without it our work will lack that charm of careless simplicity so fascinating in the works of Nature. When introducing into our alpine gardens a variation in the direction of the strata, we must take care, however, to show a reason for it, and for this we have no better way than showing a distinct separation between all groups of rock whose strata run at an angle different from that of the adjoining group, for this is precisely as we would find them in Nature, although the space between the blocks might have been partly filled up with soil and stony *débris* washed down from a higher level and may be clothed with a luxuriant vegetation. It would, in my opinion, be wrong to show different modes of stratification in one individual block or group. For though I am aware that some kinds of rocks may have been in contact with igneous rocks, which have contorted the original strata, this can scarcely come within the sphere of our consideration for the purpose of practical rock-building.

In summing up my remarks about arranging stratified rocks, I would therefore suggest that all rock gardens constructed with these should have the rocky masses arranged in groups varying in size from the smallest to the largest and boldest, that each group should more or less plainly show the stratified character peculiar to the stone used, but that these strata should differ in direction from those of other groups, according to the most pleasing and careless effect of the whole, and guided also by a consideration of what would be most suitable to the plants to be grown.

Some kinds of limestone and other rocks have very rough surfaces and show the stratified character so slightly as to be hardly perceptible. Such stones as these need, therefore, not be fixed with the same accuracy as stones of a flatter and more regular shape, and just a slight indication of the direction of the strata in each group would be all that is required. When blocks of stratified rock are built with small stones, it is desirable to fill up the fissures running in a direction different from that of the strata by either using them for alpenes requiring such a position or by filling them in

such a way as to appear like solid rock, as will be further explained later on.

I will now add a few hints concerning rock gardens to be constructed of stones of the unstratified class, like granite. It would be the height of absurdity to form strata when stones of this class are used. The scope for arranging them in our alpine gardens is, therefore, practically unlimited; but as in Nature they were projected through the surface of the soil by direct forces from below, they should in our rock gardens, as much as possible, be arranged in a manner suggestive of that. Like rocks of the stratified class, they might be arranged in groups of various sizes, but the natural effect of such groups will be very considerably enhanced by raising the ground around them, so as to convey the idea of the main body of rocks being underground and peeping through the surface only at intervals.

If among the stones selected are large rough boulders, they might be used with good effect here and there as single specimens. In arranging such single blocks of stone it often happens that the stone falls naturally into a far more careless position than could have been attained by any amount of further handling, and in all such cases it is far better to "leave well alone." Broadly speaking, it is more difficult to construct crevices suitable for choice alpine plants with pieces of igneous rocks, because the individual stones are, as a rule, rounder in shape. This difficulty may, however, be overcome by placing other stones of a suitable shape for alpine plants underground, and then covering them with soil in such a way as to resemble natural rocky ledges, but keeping them sufficiently irregular not to have the appearance of strata.

Whether the stones used for our rock garden are of the one class or of the other, we must not lose sight of the fact, that not only should each group in itself be a true picture, but the various picturesque effects must be blended and combined to form one harmonious whole. It is this part of the work which requires the greatest amount of skill and capacity. An ordinary mason or labourer may be trained to build rocks, but it requires the cultivated taste of the artist to group them, and it also requires the intimate knowledge of the horticulturist, who knows his plants and their requirements, and who judges them not by what they are when planted, but what they will be in years to come.

A keen observer of beautiful scenes in Nature cannot fail to notice effects which may be of great assistance to him when imitating Nature in the formation of a rock garden. We should endeavour not to expose to view the whole of the rock garden from one particular point, and we should also arrange the groups of the foreground in such a manner as to effect a pleasing change of pictures as we advance. Another lesson we may learn from Nature is that of emphasising different effects. As in Nature a valley has the effect of throwing the adjoining hill into greater prominence, so will a recess or cave in our rock garden heighten the effect of an adjoining projection, and *vice versa*.

F. W. MEYER.

Editor,

(To be continued.)

Border Polyanthuses.—Where seed was not sown in the autumn, then the very best time next for sowing is now. Polyanthus seed is hardy, but held over till the spring takes longer to germinate than would be needful when the sowing takes place the same season the seed is produced. The seed has a somewhat hard or tough coat, which needs

some time to soften. If sown now in the open ground, the softening process will proceed more rapidly than will be the case later should the spring prove at all dry. Of course seed sown in pans or boxes under glass can be both watered and shaded at any time of the year, but now even in a cool house or frame germination is more regular with seed of this description than is the case if the temperature be higher. Early sowings also enable the seedlings to become strong enough to bear dibbling out where to bloom so early as June, and they then develop into very fine plants. When seed is sown late in the spring, the plants often give but a poor bloom product the next year. Polyanthuses if got out early strike root deeply. I have often dibbled out from beds where the seedlings have stood all the winter plants having roots 6 inches in length. These, of course, properly planted soon get deep hold of the soil.—A. D.

THE CULTIVATION OF VIOLETS.

As we are now commencing preparations for the growing of Violets for next winter's bloom, perhaps a word as to our method of doing so will be useful to some of your readers, and might tend eventually to add a few more to those who grow the favourite flower creditably—some who may have hitherto failed to score success through being unfavourably situated as regards soil or climate, or perhaps both.

At the outset, it may be well to explain that here we do not dig or in any way cultivate any vacant ground until this time of the year, for the rainfall in this part of the country is generally so heavy and continuous throughout the months of October, November, December and January, that any loose soil is so battered and beaten down, forming a cake on the surface that proves almost impervious to any beneficial climatic elements; hence any vacant spots that are cleared of their crops in the autumn are invariably left hard and undisturbed until February.

This is a practice that should be oftener adopted in similar districts. The results, I feel sure, would be satisfactory. The selected quarter for our Violets this season is on a steep slope facing south (this sloping ground of necessity, not choice; for our garden being on a hillside, the declivities vary in degree only, none level). The plot is in fairly good tilth, but stony, and carried a crop of runner Beans in the summer. We are now double-digging it, working in at the same time a fair layer of fresh cow manure between the bottom and top spits. It will be thus left roughly to the beneficial action of the March winds and frosts, after which a top-dressing will be applied consisting of well-rotted leaf soil, burnt refuse from the smother heap, and some artificial manure, well working it in with steel forks and thoroughly incorporating it with the surface soil. It is then in readiness for planting. In the meantime the stock plants in the pits receive attention, with a view to producing suitable stuff for planting on it, in this wise: Early in March the plants are gone over, all long straggling runners cut out, but short ones with nice clean single crowns are carefully reserved and left on the plants. A top-dressing of light soil is then applied, into which in due time they (the short runners) readily strike root, and will be ready for transferring to the plot already prepared for their reception by the latter end of April. From long experience, we find these short runners are superior to divided crowns, and infinitely more so than cuttings; it is so here at all events. But should stock run short, the strongest and healthiest crowns of divided plants can be utilised, and answer the purpose tolerably well.

In planting when the soil is in good working order, the whole of the ground is well trodden, marked off into beds 8 feet wide, leaving 2-feet alleys between for the convenience of watering, cutting out runners, weeding, and gathering early blooms. The well-rooted small plants are then put in carefully with a trowel, pressing well in at 9 inches to 1 foot apart all over the beds, a thorough watering completing the job. Little

further attention is paid them for a month or so, when it will be found they are rooting freely, although as yet but little leaf growth is made. If dry, a thorough soaking is given, any weeds visible are cleared, and then a thorough mulching of any light material is applied all over the ground, completely burying crowns, leaves, and all. This dressing is a necessity here on our arid soil and sun-exposed position, and on which we lay great stress, for it keeps all snug and moist during the long summer days and dewless nights, greatly assists root-action, and is a preventive of attacks of red spider on the tender foliage in its infancy. In due course the leaves push up through this mulching strong, healthy, and clean. As top-growth now makes rapid progress, attention must be given to keep the beds free from weeds and runners, top-dressing occasionally with some suitable fertiliser, and giving periodical and thorough waterings. Ours are treated to diluted house sewage, which appears to suit them admirably.

Such is the sum total of the treatment until the time arrives for removing them to their winter quarters—the latter end of September, and if all has gone well, the small single crowns will have developed into great clumps, bristling with both flowers and flower-buds.

We are not particular as to the quality of the soil in which to put them at this stage, provided it is light and congenial for healthy root-action, as the clumps are well fortified with the essentials wherewith to span the blooming period from the larder provided them during the summer's growth.

The accommodation we possess for wintering them is ranges of sunk pits with concrete walls a few inches above the ground level. Pits of this description possess some advantages, for they are easily protected from frost, and wind has not such power on the glazed lights—a consideration in positions exposed to gales, such as ours.

In these primitive pits the plants are placed rather thickly with the leaves almost touching the glass. As planting proceeds they are well watered, thus settling the soil around the roots as well as washing the dirt and grit off the leaves.

Unless the weather is unpropitious or very wet, they are fully exposed for a fortnight, or as long as no danger from frost is imminent.

By this exposure we find no trouble ensues from leaf-damping, which, as all are aware, is a serious check to the free and perfect development of bloom. Excepting during severe weather we allow a current of air to play over the plants day and night, but protect thoroughly with Bracken and mats from being frozen. When necessary (which is not often during the short and dull days) water is given, choosing a dry morning to enable the foliage to dry by nightfall. As regards watering, I would specially caution novices in Violet growing to beware of giving their plants liquid manure while in bloom, for the flowers have a knack of retaining its unpleasant odour for a considerable length of time, thus transforming our sweetest flower, for the time being, into an abomination. Should the plants or blooms require stimulating, better by far give them a tonic in the shape of a top-dressing, washing well in with clear water. We find it beneficial, especially during the short days, to slightly syringe the plants overhead about midday with tepid water, closing the lights for an hour after; it thus assists the blooms to develop.

The foregoing remarks apply chiefly to the double varieties and weaker kinds, but the cultivation of the single and stronger sorts differs only in degree, such as more space being allowed between the plants and not treating them to quite so rich a larder. Neither is it necessary at all times to winter these latter under glass, unless it is especially desired to forward the blooms; even then they are not as amenable to this coddling or as useful as the less robust, but free-flowering doubles. As to varieties, there are many good ones available both in singles and doubles, but practically I now grow but one of the former, viz., *odoratissima*, and of the latter Marie Louise occupies the premier position—in fact no other variety has been wintered under glass this year, nor is likely to be; its su-

periority is now beyond doubt. We retain a limited stock of Comte de Brazza and Victoria, the latter producing some fine blooms in late spring, and sufficiently hardy to winter safely in the open. Why is this variety such a martyr to red spider? for even when receiving thorough good treatment side by side with Marie Louise it is always more or less infested; whereas this pest is a thing almost unknown on M. Louise here. Can anyone account for it? As Victoria certainly has a strong constitution.

The procedure I have above tried to describe and which is adopted here differs considerably from the practice of other most successful growers, so probably do our position and climate, but to those similarly situated and desirous of growing this universally beloved flower I would again emphasise the following points:—

- (1.) Select an open position, light and air being necessary to ripen and plump up the crowns.
- (2.) Cultivate well and treat liberally.
- (3.) Use stock from short runners when available.
- (4.) Mulch all overhead early in June.
- (5.) Feed liberally, but wisely, water periodically, and keep clear of runners and weeds.
- (6.) Avoid watering with liquid manure during the winter, apply no heat, and ventilate freely on all favourable occasions.

Under the treatment advocated I am satisfied the end will justify the means, with the result that abundance of Violets will be available from August to April inclusive; such in our case are produced by even one variety—M. Louise. J. R.

The Gardens, Tan-y-bwlch.

LILIES VERSUS ROSES.

I SUPPOSE that for one person that cultivates Lilies, 500 grow Roses. In all summer horticultural shows Roses occupy the first place—Lilies take a back seat. There are special Rose exhibitions, a National Rose Society; the modest Lily hangs her head in obscurity. Why is this? Is the Lily inferior to the Rose? I think not. For purity of colour no Rose can touch the Lily; for fragrance, in my opinion—a matter of individual taste—no Rose can equal in delicacy the perfume of the speciosum or longiflorum group, including L. Browni, or in strength that of auratum. For lasting as a cut bloom, whether as regards colour or fragrance, the Lily will keep good during a week; the Rose is gone in twenty-four hours. Under glass you may have Lilies all the year round in bloom; not so Roses. For grace and stateliness, granted to both equal excellence of growth and cultivation, there is no comparison between any Rose bush and an auratum, speciosum, or longiflorum Lily. Whence then the difference in popular cultivation? I suppose that the Lily is generally held to be far more difficult to grow than the Rose; that after flowering the bulb often perishes; that renewals are costly and troublesome; but surely this is because the cultivation of the one is less understood than that of the other. A deciduous bush renews yearly only shoots and flowers; a Lily, in addition, has to make a bulb on whose size and soundness its future life depends; hence a greater demand that its environment should be suitable and its requirements understood by the cultivator. Now as regards environment, it is true many soils do not suit Lilies. They require moisture and a fair amount of sunshine. Light sandy soils, therefore, do not suit; neither do cold heavy clays. Given partial shade, abundant moisture combined with drainage, and a fairly open retentive soil, Lilies will do well.

Now this environment is more restricted than that required by the Rose, and it cannot be found in many gardens, but it can be had artificially. In my town garden of 20 feet by 50 feet I grow in pots magnificent groups of longiflorum, speciosum and other Lilies. But I take care that the pots are large enough and never use less than a 10-inch pot for a single bulb of average size; large bulbs or several bulbs together are put into a wider pot, say, 15 inches to 18 inches across. The soil I use is stout fibrous loam, with some sand or peat to keep it open. The plants get sunshine about half the day; they are kept well watered—this is most important. If not plunged they get a soaking at sunset every evening; if plunged, every other evening. During growth some artificial manure is also added. I get magnificent growth, fine blooms grandly coloured, and large bulbs for the next year, and this in a tiny town garden fronting south. If one can do this, why not others? A grand pot of longiflorum or speciosum in flower with thirty to fifty blooms is a graceful and beautiful sight well worth a little trouble. Green-fly does not bother my Lilies, as it does my Roses, and no caterpillars spoil the buds. I finish, therefore, by asking, If Roses, why not also Lilies? ALEXANDER WALLACE.

Colchester.

P.S.—I could add many more points in favour of Lilies, but one must not be omitted: A Lily coming into flower in the open garden may be taken up with care for its roots and potted; if well watered and shaded for a few days, it will proceed to bloom and make its new growth without detriment. I never heard of a Rose bush thus treated successfully, but I have often been asked incredulously, "Can these Lilies really be grown out of doors?"

FLOWER BEDS FOR SUMMER.

AT this season of the year, gardeners and others will be making plans for the adornment of flower beds and borders during the summer and autumn months. A few notes on some beautiful effects produced by artistic contrast of colour during the last two or three years will be valuable to many readers of THE GARDEN. In these notes carpet bedding of all kinds is vigorously excluded. I have no wish to see a revival of this type of gardening—false, uninteresting, and formal, entailing much labour and cost. During recent years a freer and more artistic style has been adopted. Of course, one does not want every garden to be a mere repetition of some other place. Variety in the arrangements should be the object of everyone who has much bedding-out to accomplish, but hints are always acceptable. If the same plants are not used as mentioned here, ideas may be got which will prove of value.

The Fuchsia is a useful subject in the flower garden, and it may be planted in a different style to that often adopted. I should like to see in a few English gardens the fine specimens that are the glory of Hyde Park in the summer months, and the secret of success in the culture of the plant is to permit it to make its growth as far as possible in the open air. A large specimen plant on the Grass, the flower-laden shoots touching the turf, is a delightful picture, and such effects may be got without much outlay. One has not seen too much of the Fuchsia during the past few years, and it may be planted largely without fear of a surfeit of this fine flower—the essence of grace, easy to grow, and flowering over a long season. Remember that half the battle is to have the growth well hardened before the plants are put

out, and they will bloom strongly. A few of the finer varieties for forming single specimens or groups on the turf are the old favourites, of which Mrs. Marshall, Earl of Beaconsfield, Mme. Cornellisen, Tower of London, and Annette are the most important. All have flowers of great beauty, set off by bold vigorous leafage. Annette is the richest in aspect, the flowers purple and crimson in colour, and the leaves deep green. One may get beautiful effects from groups of three put moderately close together, and in very large gardens the subjects may be varied by using Madame Crousse Pelargonium, the Coral plant (*Erythrina crista-galli*), or even Clematis Jackmanni, the deep purple flowers of which gain in intensity when the plants are on the Grass. Insert the pots to the rim and throughout the summer water liberally, giving also attention in the matter of tying and staking when necessary. It is by creating masses of one colour that effect is gained, and very beautiful are beds of white Stocks with an edging of Harrison's Musk, or, better still, the deep blue tufted Pansy Archie Grant, a splendid colour. A very effective bed I noticed last year was composed of scarlet flowered tuberous Begonias, the groundwork being Mesembryanthemum cordifolium variegatum, and the edge Echeveria secunda glauca. The Mesembryanthemum is a charming plant to use as a groundwork for beds, those filled with tuberous Begonias in particular; whilst also suitable for this purpose are the many varieties of the tufted Pansy, as they bloom freely over a long season and are not in the least formal. Of quite a different character is a bed of Mrs. Marshall Fuchsia mixed with Lilium auratum for the centre, then a band of Iresine Lindeni, and an edging of dwarf scarlet Tropaeolum. The Fuchsia continues to bloom during the summer, and the picture is changed somewhat by the rising stems of the Lily in August. It is strange that there seems little desire to break away from the conventional style of edging as Echeverias, whilst the Saxifrages (*S. hypnoides* in particular), London Pride, Harrison's Musk, Creeping Jenny, either the type or golden-leaved form, and tufted Pansies are suitable for this purpose, not forgetting also *Dactylis glomerata* variegata. In Regent's Park much use is made of these edgings, and they are a relief from the monotony of Echeverias. The tufted Pansy is a delightful flower for summer bedding, and it may be planted in many ways. One of the prettiest effects I have seen was the variety Bluebell, which is largely used in the London parks, the flowers of a pale shade of blue, mixed with double white Stocks. An attractive bed is formed by filling the centre with a rose-coloured variety of tuberous Begonia, the groundwork of the bed the variegated Mesembryanthemum, and the edging Echeveria secunda glauca. For a border, especially if backed with dark-leaved shrubs, blue Delphiniums and the variegated Maple make an attractive feature. The object should be to make the beds as informal as possible consistent with a pleasing effect, and one may go out of the ordinary routine by associating together such late summer flowers as the scarlet *Gladiolus brenchleyensis*, herbaceous Phloxes, and the Night scented Tobacco (*Nicotiana affinis*), which looks well under such conditions. I do not care for the plant, however, by itself in the garden to form a distinct clump, as it were, as its appearance is too limp in the daytime, the flowers then closing and not giving off the delicate fragrance perceptible in the evening.

One could make a lengthy list of beautiful flower beds, but that would serve no useful pur-

pose, as it is rather ideas from the use of the plants named that are aimed at, not merely copying other men's plans. I may, however, refer to a few more arrangements deserving of note, and on reference to the note-book, a fine effect was produced by filling a bed with *Fuchsia Earl of Beaconsfield*, the groundwork *Bluebell tufted Pansy*, the line but one from the edging being *Iresine Lindenii*, and the margin composed of *Golden Fleece Pelargonium*. A splendid mass of colour is produced by a free use of *Lobelia fulgens* *Queen Victoria* or *Firefly*, and I may here mention that in the long list of bedding plants few are more effective than this perennial, which creates a brilliant effect through the rich association of deep brownish, almost chocolate-coloured leafage and lustrous crimson flowers. If planted, it should be in a mass to get a perfect sea of brilliant colour. In one instance I noticed last year the centre of the bed was composed of this *Lobelia*, rising from a groundwork of *Ageratum Cupid*, tufted *Pansy Skylark* and *Centaurea ragusina* being used alternately as an edging. On another occasion, instead of the *Pansy*, *Ageratum Cupid* was used as an edging with the *Centaurea*, the centre of the bed being filled with white *Marguerites*, with here and there well-grown plants of *Eucalyptus globulus*. White-flowered tuberous *Begonias* and *Dactylis glomerata* variegata associate well together, whilst very different from this is *Veronica Andersonii* variegata, the groundwork crimson-flowered *Begonias*, and the edging made up of blue *Lobelia*. Tuberous *Begonias* of similar colour mixed with *Acacia lophantha*, the latter relieving the bed of formality and the edging composed of the golden *Lysimachia* and *Chamæpeuce*, create a rich, yet not garish effect. In the use of strong coloured flowers, guard against mere gaudiness. One may get many pleasing effects without garishness or bald massing of plants to produce a blaze of bloom. I once saw four beds not far apart made up of orange-scarlet tuberous *Begonias*, and the effect was in the nature of a rebuke to those who seek to gild the garden with such dazzling masses of one violent shade.

A healthier taste has arisen not only with regard to ordinary bedding by planting such things as mentioned above, but by making the beds in the autumn months gay with flowers. The compact, dwarf and readily grown *Aster acris* is delightful by itself or in association with *Chrysanthemum* *Mme. Desgrange*. Beds may be filled separately also with the perennial *Sunflowers*, *Anemone japonica*, the white variety in particular, or *Hyacinthus candicans*. The tall, stately spikes of this Cape plant rising from a mass of *Fuchsia Riccartoni* present a fine appearance, the two subjects in perfect harmony. I have in mind now a border filled with *African Marigolds*, the orange and lemon coloured varieties for contrast. In every garden more use should be made of these fine autumn flowers, too often, unfortunately, exhibited in a way utterly opposed to good taste. We have many plants that may be used by themselves in the garden arrangements. If the garden is large, a bed of *Glaucolus brenchleyensis* creates a rich break of colour on the turf, *Montbretias*, *Zinnias*, *Phlox Drummondii*, *Antirrhinums*, &c. A delightful bed is one filled with the crimson *Antirrhinum*, with a margin of the white variety.

Readers of *THE GARDEN* have many opportunities, by the constant notes appearing on plants for flower-beds, of making their gardens attractive at all seasons of the year, and it is needless to refer again to the beauty of *Carnations* and *Tea Roses* in association, or one or

the other mixed with tufted *Pansies*, as these things have been recently alluded to. It is possible when taste is used to make the smallest parterres bright and informal by such plants as those mentioned. C.

FLOWER GARDEN NOTES.

ATTENTION must be given early in the season to all those things destined to occupy prominent positions in the flower garden, so that they are really good stuff at planting time. A plant mentioned in last week's notes as associated with a carpet of *Violas* (*Humea elegans*) is not often seen, but it makes a grand subject when well grown, and besides serving the purpose of a dot plant for dwarfier undergrowth, is admirable as a centre for larger vases. If space permits, a few free-flowering *Fuchsias* can be worked round, and an edging of the woolly *Gnaphalium* and blue trailing *Campanula* in alternate plants will complete the furnishing of the vase. *Humeas* are also favourite plants for house and conservatory decoration. Seed should be sown in August in soil consisting of two parts light sandy loam and one part leaf soil, and the plants grown along in a gentle warmth, gradually hardened as the weather improves, and put out at quite the end of May. Another useful scented plant is the lemon-scented Gum (*Eucalyptus citriodorus*). Besides emitting a delightful perfume, it is lighter and more graceful than the better-known *globulus*. A quiet arrangement that would be generally appreciated can be made with five or seven plants of this *Eucalyptus* as the size of the bed requires, filling in the groundwork with alternate plants of *Heliotrope*, *Pelargonium Lady Plymouth* and *P. filicifolium*. This *Eucalyptus* must be sown early, and, along with other ornamental foliaged plants, must be grown along quickly to secure nice sized stuff by the end of May. *Francoa ramosa* is sometimes employed very effectively in special flower garden work, and although its beauty is rather short-lived there are times when it is serviceable; it is one of the plants that will not bear the least coddling. Among other special things we usually sow towards the end of the month are *Nicotiana affinis* and *N. colosseus*, a batch of the former to be pricked off as soon as they can be handled and grown along sharply for dot plants; also in 3-inch pots the *Dracæna*-leaved *Beet*, the *Japanese Hop*, *Canary Creeper*, and *Sweet Peas*. Pyramids of colour are still in demand in some gardens, to be built up either with big old or with young plants. If the latter are required they should be strong, sturdy stuff by the middle of May, and should be struck at once singly in 3-inch pots. *Pelargoniums* *Warrior*, *Henri Jacoby*, *Lucius*, *Amaranth*, and *Flower of Spring* represent a strain and colours useful for such work. I am not advocating this branch of formal gardening, but there are yet many places where employers, however willing they may be to extend herbaceous borders and accept permanent planting here and in large beds on grass, yet, for geometrical gardens, insist on the annual spring and autumn planting, and when such a law is in force there is nothing for it but to make a brave show with the best materials.

The beds that are to be occupied with autumn-sown *East Lothian Stocks* should have been well manured and deeply dug in the autumn, and may be broken down now at any time; plenty of good growth, grand health, and an abundant and long-sustained flowering season are the result of careful preparation. *Dahlias* again will amply repay such preparation; indeed, if there is a special piece of ground to be devoted to them I generally bastard trench it, working in a liberal dose of rough manure. Very little work will be required on the herbaceous borders this spring, but now that most things are on the move we have taken advantage of a fine day to examine the surroundings of those things whose rambling propensities were arrested last autumn, and clean out any off-sets that may have escaped notice. *Aster spectabilis* is an old offender, and as it is one of those

Starworts that may be pronounced somewhat out of date, it may be said, why not remove it altogether? It happens in this particular case to be flanking on either side a fine clump of the double perennial *Sunflower*, and the two things thus associated make a fine autumn group. I should not, however, plant it again in any border that boasted of a thoroughly good collection of herbaceous plants, nor, indeed, anything with similar rambling propensities. It would perhaps not be very much trouble to compilers of catalogues, and it certainly would be a great boon to intending purchasers not altogether conversant with the habits of the several things, if a very brief description of the same accompanied the name and average height. It might not be necessary in those places where separate beds can be spared for different classes of plants, but I am writing of miscellaneous borders, and well remember the difficulty experienced in trying to eradicate one or two things that held on to their respective positions as tenaciously as *Couch Grass* or the wild *Convolvulus*. *Daffodils* are coming up very strongly, and we shall soon welcome the flower of the earliest sorts. What a boon some of them, notably *obvallaris* and *princeps*, are for early greenhouse work, especially for those places where accommodation for forcing is somewhat limited. Once get them up sturdy and strong through the soil and the little warmth afforded by the average greenhouse gives a bright display quite early in February.

Claremont.

E. BURRELL.

STOVE AND GREENHOUSE.

ACHIMENES.

THESE charming stove tuberous-rooted plants were much more extensively cultivated fifteen and twenty years back than they are now. It cannot be for any lack of the beautiful that they are not now to be met with more frequently than they are, for when well grown there is hardly anything to surpass them in general utility and profusion of flower from June to September. It is rather for want of a better knowledge of their requirements than anything else that has caused them to be, for a time at least, only to be found here and there in our gardens. The great advance in *Gloxinia* culture may also have had something to do with this falling off in the popularity of the *Achimenes*. The time was when they were grown as specimens, and in this state they used to be shown at Chiswick in its palmy days of horticultural exhibitions. More recently they used to be allotted a class to themselves in local and provincial shows, but this now seems to be very much on the decline. I used to grow them as specimens some few years back, and a fine display they make when their wants are attended to. To the species, a few only of which are now grown in gardens, considerable additions have been made by the hybridiser. These hybrids possess a better constitution on the whole, and are likewise very profuse in flowering. The late Mr. Parsons, of Welwyn, raised some of the best of these. The species came chiefly from Brazil, Mexico and Guatemala, and most of them were introduced between 1840 and 1850.

CULTURE.

The present is a most appropriate time for alluding to this subject, with the hope that more may take up their culture than during somewhat recent years. During the next few weeks is a good time to start the tubers afresh. In doing this, my plan has been to secure a fine-mesh sieve and then shake them out of the old soil into it. It is thus an easy matter to separate them, at the same time saving all the smallest tubers as well. These

tubers require a little patience in order to extricate them from the very fine, but dead roots by which they are mostly surrounded. In starting them afresh, I prefer to use shallow seed-pans, placing the tubers therein according to their several sizes from 1½ inches to 2 inches apart. It is always advisable to keep them sorted as to size to secure uniformity in vigour. The tubers should be covered about half an inch or so, the surface afterwards being made firm. The pans should then be placed in a stove temperature, a shelf being a good place for them, so as to avoid drip from the syringing, &c. But little water will be needed until the growth gets active, whilst, to save watering, some paper may be laid upon the pans during sunshine until the young shoots appear, not afterwards. When about 2 inches in height my custom was to transplant the tubers into other pots or pans, several being thus made up out of one or two pans. If this work be done carefully the young growth will not suffer in the least, as each one will move with a nice ball of roots. This process has a tendency to make the after growth more bushy, side shoots pushing out freely by the little check given to the leader. About 3 inches apart is a good distance; thus a 6-inch pot would take about seven plants. This is a far better plan than leaving them thickly as started, whilst if they were placed at that distance apart when first started there would be far too much soil around the tubers for their healthy growth. For specimens, 12-inch pans or shallow pots are the best, depth of soil not being so essential as width upon the surface. If pots are used they should be drained nearly half way up, or the amount of soil will be excessive. Another after mode of culture is that of stopping the leaders to make the plants as bushy as possible; this will make a few weeks' difference in the time of flowering, but it pays when time is not an object of the first consideration. This stopping should be done as soon as the plants are in active growth after transplanting, and should the stock of any kind be scarce, these tops will all make good cuttings, striking freely in heat. There is another advantage in stopping the plants, inasmuch as they are in a measure more self-supporting. Support in every case is needed, but it should not be excessive, nor need it be so at all; a few slender sticks in the centres of the plants, with a row around the outside and tying material running from stick to stick of these latter, so as to include all the shoots, will be found quite sufficient. Due allowance as to height must, of course, be provided in the staking, as some kinds grow taller than others. *Longiflora major* and *Sir Treherne Thomas* are tall growers; *longiflora alba* and *Ambroise Verschaffelt* are much dwarfer. For small plants to use for decoration in about 6-inch pots, slender sprays or such as can be got from Birch brooms will answer remarkably well. As the plants commence to flower, the sticks should not be shortened, but be retained a few inches in advance, as the continuity of growth and flower will be such as to need further support. The supports in any case will, with care, be hidden by the time the plants are in full flower. Small sticks and slender ties should be the rule. All flowers should be picked off as they fade, otherwise as they decay they will spoil others. If this work be kept up close, it will not give much trouble; neglect it and the plants will be spoiled. When once fairly rooted and in active growth the plants will take water freely, never being allowed to suffer for want of it. As they come into flower weak manure water should be

given them; that made from the best Peruvian guano so as to be about the colour of sherry will suit them well. Failing this, I would use that from the farmyard rather than employ any artificial manure that has not been thoroughly tested. About twice a week will be ample for these stimulants, otherwise it may tend to sour the soil. The soil which I have found to suit the *Achimenes* best is leaf-mould (well decomposed) with light loam and sand; some spent Mushroom bed manure is also a good addition, both this and the leaf-mould being worked through a sieve of medium mesh. The leaf-mould in proportion should be about one half of the whole, and is much better than peat for these plants. Being plants of very rapid growth

for purposes of ornamentation is difficult to explain, unless it be that their merits are not sufficiently known. They require of course to be started and grown on in heat as in the case of other plants, but by the time they show for flower the weather will be warm enough for them to be kept in a house without fire heat. For basket culture they should be started in pans and then be transferred to baskets when fit; some can be placed around the sides if needful as well as upon the top surface. Shallow baskets are preferable to deep ones for reasons already given. When these baskets are completed some *Selaginella denticulata* should be pricked in around the sides, or *Panicum variegatum* if the choice lie in that



Achimenes in a pot.

and not remaining in the same soil from year to year, it is not advisable to make it too firm in potting, merely pressing firmly with the hands, not using a potting stick at all. Before staking, a light top-dressing of fine soil would be an assistance if there be room enough to receive it.

ANOTHER MODE OF CULTURE.

Where basket plants are in request for the summer season there is in the *Achimenes* most excellent material for the purpose. For tall houses, as conservatories, which are not absolutely open night and day, *Achimenes* will be found decided acquisitions. In some places they are thus cultivated, making a profuse display during July, August, and September. Why they are not more grown in this way

direction; either will be an assistance in preventing the outer soil from getting too dry, at the same time adding to the effect. Even closer attention to watering is needful than in the case of those in pots, there always being the risk of suffering by the greater exposure to air. For basket plants no tying should be attempted, but rather let the shoots hang down of their own will.

THEIR USES.

It is not only in the stove that the *Achimenes* can be made use of in pots; they will stand very well indeed in warm greenhouses (i.e., houses not open day and night) where the moisture is not excessive, so as to cause the flowers to damp off. Those who grow what may be termed cool stove plants, or, in other

words, those who have only a temperate house, may also grow the *Achimenes* with good results, taking the precaution not to start them into growth before about the end of March, otherwise adopting the same course. Small plants are very useful as vase plants for the house, being so very distinct from other things so used. In a cut state they last very well when cut with a good length of stem. Where the shoots are thick, they can be spared in this way without any loss to the plants.

OTHER REMARKS.

I used to have the best success with specimen plants when growing them upon a shelf at the back of a three-quarter-span stove. In that position they did not come into direct contact with the rays of the sun until the after part of the day, whilst the position being a fairly moist one, was conducive to quick growth. It is essential to preserve as sturdy a growth as possible, as long-jointed shoots want more support. As the plants go out of flower, watering should be gradually withdrawn, and as the growth (leaf) dies off be entirely stopped. During this time the plants should have a light and sunny position rather than a shaded and damp one. Later on, as the signs of vitality disappear altogether, the shoots should be cut off and the pots, pans, or baskets be stored away until the following spring. Ours used to be kept upon a shelf in a potting shed, which had the warmth of the stovehole in a sufficient degree to entirely exclude frost. Any other dry and not too cold a place will suit them very well. Insects are in a measure troublesome, but not to a serious degree. A small form of thrips will attack and render the foliage unsightly, giving it at the same time a more brittle character. Fumigation will prevent this if repeated two or three times. Another troublesome pest is the red spider if the plants are kept in too dry a place. Dusting with sulphur is about the best remedy for this insect.

THE BEST VARIETIES.

The following may be considered as about the best for all purposes, viz.: *Ambrose Verschaffelt*, fine white, with dark starry centre, excellent in small pots also as specimens; *Belmontensis*, large violet-purple flowers; *Carminata elegans*, a fine variety with spikes 18 inches in length, also of good habit; *Dazzle*, vivid scarlet and dwarf habit; *Diadem*, magenta, shaded carmine; *Eclipse*, very free, bright orange-red eye, and spotted with carmine; *Gem*, carmine, medium-sized flower, erect growth; *Harry Williams*, cerise, spotted with yellow and maroon, large flower; *Lady Lytleton*, rich magenta, very free; *Longiflora major*, the best blue, very fine; *Longiflora alba*, the best dwarf white; *Loveliness*, large fringed flowers, rich magenta, shaded with crimson; *Marguerita*, pure white, fine, bright green foliage, and good habit; *Mauve Queen*, large mauve, after *Longiflora major*; *Meteor*, dwarf habit, crimson flowers; *Pink Perfection*, magenta-pink with violet shading; *Scarlet Perfection*, carmine-scarlet, orange eye; *Sir Treherne Thomas*, rich crimson, a fine variety as a specimen; and *Unique*, deep carmine with yellow eye, spotted with crimson. If six kinds only were selected I would prefer *Ambrose Verschaffelt*, *Longiflora major*, *Marguerita*, *Carminata elegans*, *Harry Williams*, and *Sir Treherne Thomas*.

PLANTSMAN.

Grape Hyacinth in pots.—Among bulbs that are well suited, though seldom seen, for flowering in pots under glass early in the season may be mentioned the *Grape Hyacinth*, which is very

easily forced into bloom, and if about eight bulbs are put into a pot, they form very effective masses that may be used for various purposes, while they remain fresh a considerable time. The pale blue flowers are very pleasing and quite distinct from those of the *Chionodoxas* and *Scilla sibirica*, all of which do well for flowering in pots.—H. P.

***Costus igneus*.**—This has been many times noted in *THE GARDEN* as the most showy member of the entire genus and a very desirable plant for the stove or intermediate house. The stout stems are clothed with pale green leaves and terminated by a flattened, cone-like arrangement, from whence the flowers are produced. They are about 1½ inches in diameter and of a brilliant orange colour. True, the individual blooms do not last long, but a succession is kept up for some time. It was introduced from Bahia about eleven years ago, but has never become generally grown, though it could scarcely fail to give satisfaction.—H. P.

Stauntonia latifolia—As a wall plant this is fairly hardy in many districts of England, but to be seen at its best, unless in especially favoured localities, it needs the protection of a greenhouse. When a quick-growing climber of an evergreen nature is needed for a large conservatory, this *Stauntonia* is one of the plants that can be recommended for such a purpose, as it forms a mass of deep green leaves, effective at all seasons, while in early spring the blossoms are produced. They are borne in axillary clusters, and though, from their colour—a kind of greenish purple—not particularly attractive, yet they are so fragrant, that they form a very desirable addition to the plant. Beside the generic name of *Stauntonia*, it is also known under that of *Holboellia*. It is a native of the Himalayas and has been known in this country for over fifty years. A second greenhouse climber suitable for a large structure, and, like the *Stauntonia*, not easily affected by cold draughts, is *Ruscus androgynus*, or *Semele androgyna*, as it is also called. A strong established plant of this will push up stems, which, when they first appear, are like stout heads of *Asparagus*. They, however, soon develop and mount upwards very quickly, while the dark green, leathery, leaf-like cladodes are arranged in such a manner as to resemble large pinnate leaves. The roots of this *Ruscus* are very vigorous, so that it should be planted out in some good soil in order to secure the best results. It is not troubled by insect pests, yet a good syringing occasionally is of great service to it. This *Ruscus* is a native of the Canary Islands, and was introduced quite early in the last century, but it is now unknown in most gardens.—H. P.

SOCIETIES AND EXHIBITIONS.

THE NATIONAL CHRYSANTHEMUM SOCIETY.

ANNUAL MEETING.

THE annual meeting of this society was held at Anderton's Hotel on Monday last, there being a very large attendance. In the absence of a vice-president, Mr. R. Ballantine was unanimously elected chairman of the meeting.

The usual routine business having been disposed of, the secretary presented the annual report and financial statement for 1892. As these will appear in the new schedule, only a condensed account of the year's work need be given here. It appears that the past year has been one of the most prosperous that the society has experienced. The society has increased in numbers and in importance, and there has been a large accession of members and affiliated societies. At the present time the list of members numbers 620, of whom 73 joined during 1892, and there are 100 affiliated societies, an increase of 14 during the year. The display of plants and blooms, especially at the November show, was of a high order of merit. Competition for the challenge trophy by affiliated societies was not so extensive as could be wished;

that for the Holmes' memorial challenge cup, provided by private subscription on the initiative of Mr. Norman Davis, was keen and exciting. The frozen *Chrysanthemum* blooms from New Zealand, sent by Mr. John Earland, attracted considerable attention, and the silver-gilt medal of the society was awarded to Mr. Earland to commemorate the event. To return the compliment, advantage was taken of the November show for obtaining a dozen blooms of incurved, and the same number of Japanese, which have been frozen and dispatched to Mr. John Earland at New Zealand in the name and on behalf of the committee for exhibition at the Wellington show.

The supplementary catalogue has proved useful to lovers of the flower, and is a valuable appendix to the centenary edition published in 1890.

The floral committee held seven meetings during the year. Its work is highly appreciated all over the country, flowers being sent for inspection from all parts. It has been decided to increase the number of elected members from fifteen to eighteen, and also to appoint a chairman of that body annually.

During the present year three exhibitions will be held: one in October, one in November, and a third in December. The September exhibition will be held by the Aquarium society, the committee providing prizes for several classes of *Chrysanthemums*.

On the subject of the enlarged boards for Japanese blooms, the committee were of opinion the time was not ripe for compulsory enlargement, and by a considerable majority they resolved to adhere to the regulation which leaves it optional with exhibitors.

The total receipts have amounted to nearly £1000, the leading figures being, members' subscriptions, £209 15s. 7d.; donations and special prizes, £160 odd; Royal Aquarium Society, £291 16s.; and fees, &c., from affiliated societies, £49. The expenditure has been extremely heavy, there being only a balance left in hand of 5s. 4d. Mr. Dean, in explaining the financial statement, regretted that many members and affiliated societies were in arrear, otherwise the society would have been in possession of a handsome sum to begin the new year with. The chairman moved the adoption of the report, and said that in spite of the extra expense incurred at the dinner, he was pleased to say that several of the gentlemen invited had more than covered the outlay by subscriptions they had given for the new year. Mr. Jukes seconded the motion and considered it was highly satisfactory, all things being taken into account. The secretary announced that the special prize fund for 1893 amounted to £131 17s., the principal donors being Messrs. Pitcher and Manda, Messrs. Sutton, Mr. R. Owen, Mr. H. J. Jones, Mr. Godfrey, Messrs. Shuttleworth, and Mr. E. C. Jukes.

The election of officers resulted in the reappointment of the executive as before. In accordance with the rule, twelve members of the general committee retire annually, and it was announced that those retiring this year were all eligible for re-election, having qualified by attending the requisite number of meetings. The names of more than twenty candidates were submitted to fill the vacancies, the result of the poll being that all those retiring were again elected with the addition of Mr. E. Beckett. The representative of the Westerham society pointed out that as several country members had been nominated, it was essential to know that those gentlemen would attend to their duties if elected, and inquired whether they had signified their consent to act, but no information was forthcoming on this point.

Mr. W. H. Fowler (Mayor of Taunton) proposed votes of thanks to Sir Edwin and Lady Saunders for the services they had rendered during the past year, which were passed unanimously.

The rules of the society were then discussed, the chief interest lying in Mr. Addison's proposal to insert a rule by which persons guilty of conduct prejudicial to the society's interests should be expelled. The motion was seconded by Mr. W. Wells, and the debate that followed was of an unusually lively character. Mr. E. C. Jukes strongly opposed

the proposal in a very able manner. Mr. W. H. Fowler felt he could not support it, but thought that members who were in arrear with their subscriptions should be removed by a rule which he would presently propose. Mr. Bevan, Mr. Hicks, Mr. Dean, Mr. W. Piercy, Mr. Newell, Mr. Geo. Gordon, and Mr. Moorman all vigorously attacked the proposal, and in the end Mr. Addison decided to withdraw his motion, accepting as a compromise the rule proposed by Mr. Fowler, which he stated would be quite as satisfactory to him. It is worthy of notice that, excepting the proposer and seconder, there was no one present who spoke in favour of the suggested alteration. The discussion was frequently interrupted by bursts of applause, which showed the keen interest displayed by the members in the subject under consideration.

The treasurer appealed for the restoration of the reserve fund which had been used during the centenary year, and hoped the amount would soon be made up again.

Votes of thanks to the catalogue committee, the auditors and others were passed for their services, and a suggestion was thrown out that instead of voting by a show of hands, in future the ballot should be resorted to.

Mr. Fowler's rule to remove the names of members who should be one year in arrear with their dues was then agreed to.

Several new members were elected, and the meeting closed at a rather later hour than usual.

Anthracite coal and garden boilers.—

Enough has been said to show clearly that anthracite makes a splendid fuel, but as a good draught is essential for its use, one word more may be added. I would say that when the draught is not quite what it ought to be, the difficulty may be overcome by mixing a certain proportion of steam coal. It gives a flame that increases the draught very much without destroying the advantages of the anthracite. Heat of course ought not to be lost up the chimney, but all the same, without heat in the chimney draught is impossible.—R. IRWIN LYNCH.

I am very much indebted to "E. M.," E. Burrell, and H. Jenkins for replying to my query so fully regarding the above. I am quite of their opinion as to the doubtful policy of removing the boilers so far from the houses. I ought to have stated in my query that the main object to be attained by removing them was to get them sufficiently near to a chimney stack 75 feet high, and which carries away smoke from other sources, so that it can be utilised for the double purpose of improving the draught of the boiler furnaces and carrying away the smoke (if any) generated therein. The base of the tall chimney is unfortunately on a much lower level than where the boilers are at present, or it might have been possible to have led the smoke flue from the boilers to it without altering them materially. The anthracite coal which was tried here and found useless was got from the Lanarkshire coal fields, and will most likely be a very inferior coal to that referred to by your correspondents. With the extra draught which I anticipate after the boilers are removed, I think we will be able to use it, or, failing that, we can have recourse to forced draught by steam, under which conditions I lately saw it burn splendidly, producing great heat and that without any smoke whatever.—G. C. L.

In answer to "G. C. L.," I have been using the above for more than a year and find it a great success. The fire must be lit with ordinary coal and the anthracite gradually added. When once a good fire is established, I find it will burn well for twelve hours, all the doors being closed and the damper nearly so.—AMATEUR.

New Clivias.—Many new Clivias, or Imantophyllums as they were formerly called, are raised each year, and the practice is to give a name to every variety that displays the merest difference

from kinds already in cultivation. We have during the past two or three years noticed this reckless practice, which is in a sense misleading, as purchasers of new varieties want to get something absolutely distinct, not differing slightly in shade of colour or size of flower from well-known forms. There is ample scope for the hybridist in the direction of improving the Clivia, but it must be in acquiring distinct shades of colour. Pale oranges abound, and awards to such varieties, unless showing remarkable freedom or size of flower, should be cautiously given.

PUBLIC GARDENS.

Opening of Kew Gardens.—After some months of consideration and consultation with the committee who are at present inquiring into the arrangements at Kew generally, Mr. Shaw-Lefevre has decided against the earlier opening of the gardens. In his final letter the First Commissioner states that the question has been fully considered, but in view of so many other claims on the public purse, and the expense involved, it is impossible at the present time to entertain the proposal. The gates will, therefore, still remain closed to the public until midday.

Gift to Macclesfield.—At a special meeting of the Macclesfield Town Council lately the Mayor read a letter from Mr. Francis Brocklehurst, of Hare Hill, offering the council 13 acres of land connected with Fence House, in Hardsfield, on the east side of the town, as a pleasure and recreation ground. Mr. Brocklehurst promises to make suitable approaches and erect a caretaker's house, the only condition being that the council should maintain the same. The value of the gift is estimated between £5000 and £6000. The council unanimously accepted the gift, and passed a hearty vote of thanks to Mr. Brocklehurst.

Richmond Improvements.—Sir J. Whittaker Ellis has intimated to the Mayor of Richmond his willingness to contribute £500 towards laying out the grounds between the new Town Hall and the Thames, the cost of which is estimated at £2000. It is proposed to form a descent from Whittaker Avenue to the riverside in terraces, and the work, when completed, promises to be a great improvement. The Town Council have accepted the offer of Sir Whittaker, and have passed a cordial vote of thanks to him for his contribution. The new Town Hall and Municipal buildings are approaching completion, and will be a handsome addition to Whittaker Avenue.

International fruit show, 1893.—At a meeting of the provisional committee who are promoting the above, held at Anderton's Hotel, Fleet Street, E.C., on the 20th inst., Mr. H. R. Williams in the chair; present also Sir James Whitehead, Bt., M.P., Messrs. T. B. Haywood, P. Crowley, J. Laing, &c., the matter of proceeding with this exhibition was discussed. Eventually a resolution was proposed by Mr. J. Wright and seconded by Mr. T. B. Haywood, to the effect that having regard to the difficulties experienced in obtaining the site on the Thames Embankment, and the number of exhibitions announced to be held in London during the coming summer and autumn, it is not advisable to proceed with the proposed international fruit show this year. The resolution was carried unanimously.

Gardening and forestry at Earl's Court.—During the coming summer the grounds at Earl's Court, which were occupied last year by the horticultural exhibition, will be devoted to gardening and forestry. The arrangements are on an extensive scale, and exhibits have been promised by the British and several foreign governments. Fruit trees will be shown in all stages of growth, and deciduous and evergreen

trees will be grouped with a view to showing their adaptability to various situations and the effect that is to be gained by artistic arrangement. Modern gardens, applicable to both mansion and cottage, country and town, will be set out, and there will also be specimens of allotment gardens shown under the best treatment. As last year, a considerable portion of the main building will be set apart as an indoor garden, but the arrangement will be entirely different and more in accordance with the special objects of the exhibition. A collection of the woods of the world will be shown, and various methods of preserving and working them will be practically demonstrated. Flower and fruit shows are to be fortnightly events during the season, and prizes of sufficient value to induce the best growers to compete will be offered. Arrangements have been entered into with the Government of Bulgaria to send over experts and machinery showing how the far-famed attar of Roses is produced, from the plucking of the petals to the final distillation. Mr. H. E. Milner is chairman and general director. Mr. George Cadell, late of the Indian Forest Department, will be at the head of the forestry section, while Mr. Harry Turner, of the Royal Nurseries, Slough, will superintend the horticultural section.

The weather in West Herts.—The weather which throughout the previous fortnight had been very mild, on Wednesday became quite wintry again, with heavy showers of snow. Sunday proved the warmest day that we have had as yet this year, the highest reading in shade being 57°. The preceding night was also exceptionally warm for February. Early in the week the ground at 2 feet deep was 3° warmer, and at 1 foot deep 7° warmer than it had been a fortnight previously. During the present month there have been only four perfectly dry days, while Monday, Tuesday and Wednesday proved very wet. On Tuesday the barometer fell to 28.703 inches, which is lower than any reading for three years. The yellow Crocus came first into blossom on Saturday, or a fortnight earlier than its average date of flowering in the previous seven years, and nearly a month earlier than last year.—E. M., *Berkhamsted*.

Gardeners' Orphan Fund.—I beg to inform you that Her Majesty the Queen has been pleased to command that this fund be in future called the Royal Gardeners' Orphan Fund. —A. F. BARRON, Hon. Sec.

Names of plants.—*J. Greig*.—1, *Odontoglossum Cervantesi* decorum; 2, *Odontoglossum Edwadi*.—*E. Samuelson*.—1, *Cypripedium Rothschildianum*; 2, *Dendrobium Ainsworthii*; 3, *Cypripedium Boxalli*; 4, *Zygopetalum rostratum*.—*H. May*.—1, *Epidendrum eblicatum*; 2, *Apidium eblicum*.—*H. M.*—*Keria japonica* fl.-pl.—*C. A. Lorton*. Impossible to say; specimen too shrivelled.—*H. G. W.*—*Camellia japonica*.

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No. IIII. SATURDAY, March 4, 1893. Vol. XLIII.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare*.

ROSE GARDEN.

PRUNING ROSES.

THE time is now close upon us when many, especially amateurs, will be anxious to commence pruning their Roses. It is remarkable how early many Roses commence growth as soon as mild weather prevails. There is a general impression among amateurs that they are behind with this most important operation if they notice the plants starting into growth. The great secret in pruning Roses is to get it done from two to three weeks previous to the last frost. This is, of course, a somewhat difficult matter to judge, and much depends upon the season, also whether the locality be north or south. The class of Rose also has to be taken into consideration, some being earlier and some later than others. Again, in each one of these classes there are varieties that are more tender than others. There is also a great deal of difference in their habit of growth, besides a few other characteristics, all of which need a little consideration if the very best results are to follow. I would first of all warn against too early pruning. Roses will, if left alone, commence to grow from the tip of their shoots first. Such growths seldom produce good blooms, being as a rule checked by the late frosts. Now, if these growths are allowed to come on naturally for a short time during extra early and mild springs they will induce a free start of new roots, and the little loss of sap occasioned by the later pruning does very little harm. In the warmest positions and under the most favourable conditions I would not prune before the early part of March. What we want is the young growth to come on without any check. Checks, whether from frost or from a spell of cold weather, are especially injurious to Roses. A late break free from these checks will rapidly catch and pass any plants that were pruned early, and which at one time seemed on the way to produce the earliest blooms. To all who have noticed Roses during several seasons this fact must have been evident. As a further proof of how much difference a few days make to the opening of the "queen of flowers," I may state that often I have thought it would be hopeless to expect to cut Roses for the Crystal Palace show, and have at the last moment had to telegraph my entries owing to a couple of days of warmer weather having set in. Readers have also probably noticed the interesting discussion that has lately been going on in the gardening press relative to the date for the National Rose Society's metropolitan show, and the great importance that several of our trade and amateur exhibitors have attached to two or three days one way or the other. Roses planted during the present season may be pruned about a week earlier than established plants in the same position. They should also be pruned harder; indeed, I would remove almost all of their wood the first season, because it is of little use unless made on the ground and the roots left undisturbed. By pruning newly-planted Roses hard, you

secure good wood for next season's use, and will be much more likely to obtain a few fairly good blossoms the first season. In the case of pot plants these last remarks do not apply, because, if turned out carefully, their roots are left practically undisturbed and established in the soil they grew in. Plants from pots are frequently used for filling up blanks late in the planting season, and may be pruned in the same manner as I will advise for established trees.

Roses may be divided into three sections, independent of whatever class they may belong to, whether they be Teas, Hybrid Perpetuals, Chinas, Bourbons, or any other of the numerous classes. The first of these sections shall be the extra vigorous growers. We will take the well-known Gloire de Dijon as a type from the Teas, Celine Forestier from the Noisettes, Mme. Gabriel Luizet from the Hybrid Perpetuals, and Mme. Isaac Periere from the Bourbons, all as representing types in their separate classes, which need pruning in one way. I may further add that I would include any Rose which annually makes a growth of 6 feet to 10 feet in this section. Very old wood among Roses is of little use, and care should be taken at every pruning time to remove as much of this as is practicable. Most of these strong growers are used for walls and fences, and unless judiciously pruned are apt to grow bare at the bottom, while they necessitate a great deal more labour in nailing, &c., than would otherwise be the case, owing to their best growth being so far out of reach. This section blooms most profusely upon the long growths made during the previous season; therefore, these should be pruned as little as possible—in fact, only the points of such growths should be removed. Much of the pruning that is necessary in this section should be done during the summer and early autumn. It is well to remove the bulk of the growth as soon as it has finished flowering. Such wood is seldom of any further service, and you thus secure the whole energy of the plant in producing more wood that will be of much greater value for the following season. In almost all cases there will be a few eyes at the base of these shoots that have started to grow away strongly, and which would not flower the same season. If you remove the wood above these shoots, you will be giving them more room to grow, while at the same time the full strength of the plant will be concentrated in the most valuable parts. Always shorten back weak lateral growths to the main shoots. This is the best way to prune this section when used for walls, fences, or pillars. They are also much used for bedding; in fact, they are by many considered the very best class of Roses for bedding when pegged down. In this case, as far as pruning goes, the same principle should be carried out. Remove the bulk of the wood that has been pegged down as soon as it has flowered, and take due care of the long growths breaking from the base of the plant by tying them loosely, but securely, to stakes. They are much better if kept in an upright position while making what is termed their maiden growth. At pruning time cut away the remainder of the old wood, fork over the soil and mulch well with the best material to hand, remembering that Roses are much benefited by a change of manure. Now peg down the younger shoots in place of those cut away. By following this plan you will get a good crop of bloom annually. I am in favour of growing Clematises and Roses together, and in a future note will treat upon these two charming flowers in connection with one another.

Our second section of Roses is that described in catalogues as vigorous growers, and which do not make long growths of the Gloire de Dijon type. Among the Teas we may take Anna Ollivier, Mme. Lambard and Marie van Houtte as our types for this section, with Alfred Colomb and General Jacqueminot from the Hybrid Perpetuals. These should be pruned in the way that the majority of amateurs adopt, viz., cutting back the growths to the second or third prominent eye, or to from 6 inches to 9 inches of the shoulder each good growth breaks from. Cut away entirely all weakly shoots, especially from towards the centre of the plant, and always cut back to a prominent eye and one with an outward tendency. Much may also be gained, as far as waste of wood and better-shaped plants go, by a little care during the flowering season. When a flower or truss of flowers is over, instead of simply picking it off cut the shoot back about half way. Also when cutting any flowers for decoration, remove them with much longer stalks than is generally the case. The blooms have a more handsome appearance, and are better suited for decoration than when cut in the niggardly fashion one so often sees. When a Rose bloom is removed new growth invariably starts from the eyes at the top of the shoot. Under these conditions the lower eyes often remain dormant, and your plant soon attains a bad shape without any advantage being gained in other directions.

The last and third section must be that described as robust or moderate. These two terms seem much at variance, but many growers use them for plants of somewhat similar habit. For example, one will call Etienne Levet and Lady Mary Fitzwilliam moderate growers, while others will style them robust. Among Teas, too, we find Souvenir d'Elise Vardon and Comtesse de Nadaillac described under both terms. We will take these varieties as our types of this last section. They should be pruned hard—in fact, back to the lowest eye of promise upon all shoots.

As I have previously written, much depends upon the season and locality. Early varieties like the Chinas and Bourbons with their hybrids may be pruned during the first two weeks of March, the Hybrid Perpetuals about the third week in the month, and the Teas and Noisettes at the extreme end of the month during a very forward season, or during the first two weeks of April should the spring seem backward. These dates are for the south and south-western counties, a week later being best for the midlands, and a further postponement of a week if the locality be cold or northerly. In pruning use a good sharp knife as much as possible; it makes a cut which heals over better than any made by the best secateurs.

RIDGEWOOD.

Harrison's and Persian Yellow Roses.—In "Ridgewood's" charming article on yellow Roses (p. 105) it seems singular that he has not noticed the great distinguishing feature between these two. Harrisoni is deliciously fragrant, and the Persian Yellow smells of bugs. Harrisoni is also the smallest and most double of all the Persian Yellows, soft, fluffy, almost canary-coloured. It is a most lovely and useful Rose for bouquet and decorative work. Has "Ridgewood" also noticed that the yellow Banksian Rose is harder than the white, and that the small white again is hardier? The Fortunei variety, which is a Banksian Rose, is spoilt through its size. "Ridgewood's" remarks on the extreme tenderness of the Cloth of Gold suggest the inquiry, from whence has it had this extreme delicacy of constitution? It is not so long since Cloth of Gold was almost as common on

walls or in the open as the Maréchal Niel is to-day. I have seen many fine specimens of the Cloth of Gold, and wall samples such as I have not yet seen equalled by the Maréchal Niel. Can it be that these two Roses at least are growing more tender? It seems like it. Or is it that rosarians are growing less skilful in the cultivation of miffy Roses and put their highest skill into a few pot-boilers to sweep the show tables? Be that as it may, not a few of us sigh for the gable ends and front and side walls of mansions and dwelling-houses covered over as in the olden times.—D. T. F.

Hybrid Sweet Briars.—The charming plate of hybrid Sweet Briars given in THE GARDEN, January 21, 1893 (p. 47), serves to show the extreme beauty of the hybrids raised by Lord Penzance in his garden at Godalming. The accompanying notes are of much interest, but I should like to mention that one variety in particular named Lucy Bertram is of delightful colour, the flowers large, single, and touched with a delicate rosy pink shade. They are similar to those represented on the left-hand side of the plate. This race of hybrid Sweet Briars is of great importance, and Lord Penzance has raised up a really interesting and valuable class of Roses, in which are preserved the beauty of the Sweet Brier and its fragrant leafage. The flowers are large, varied in colour from rose to deep crimson, as shown by the plate.—C.

SHORT NOTES.—ROSES.

Rose Ernest Metz (Guillot, 1888) has made a decided advance during the past summer. The blooms, carried upon extra stout stalks, are very large and of exquisite shape; colour soft carnation-rose, clearer in the centre, and deeper still on the reverse side of the petals.

Rose Abel Carriere (E. Verdier, 1875) is one of the dark purplish crimson Roses that came out so well last summer. It is a splendid grower, and the flowers are well built up and double. The centre of the bloom is glowing red, and unless the rich maroon on the edge of the petals gets burnt by bright sunshine, it is one of the showiest dark Roses we have.

Rose Victor Hugo (Schwartz, 1884) is another magnificent dark Rose, and is perhaps the best of this class and colour introduced during the last ten years. It has the same splendid shape as Duke of Wellington, larger, and has most brilliant crimson and maroon shadings. It was, in my opinion, the finest exhibition Rose of its colour staged either at the Crystal Palace or Chester Rose shows of 1892.—R.

Rose Mrs. Paul (Paul & Son, 1891) is a welcome and important addition to the Bourbons. It is one of the most distinct Roses we have both in colour and shape. The flower is large and open, but the centre petals are cupped and keep their form well, while the outside petals reflex somewhat after those of a Camellia. The petals are very stout, in colour bluish-white, with rosy peach shading. R.

Rose Susanne Marie Rodocanachi (E. Verdier, 1880) is one of the newer Roses that was much longer in becoming well known than the majority of good varieties. It is one of the most distinct, and retains its fresh colour longer than any other Rose I know. Most Roses of this colour and shape, burst open or droop soon after being cut, but this variety retains its freshness for a long time. The flowers are of a clear rosy cerise.—R.

Rose Cleopatra (Bennett, 1889).—This is not a strong grower, but is free both in growth and blooming. The colour is unique, being a very soft pink edged with bright rose. The petals are very large and broad, forming a grand and well-built-up bloom. It is one of the finest Teas for exhibition when grown generously and the flowers well thinned. It also produces large numbers of long and pointed buds very suitable for button-holes.—R.

Rose Duc de Montpensier (Lévêque, 1876) is very little grown. This is strange, for no other variety has the same glowing velvety crimson, tinged with a deep and fiery red. It is not large, but the shape is good, and it has a most exquisite scent. I consider it a grand garden Rose. I had not seen it in an exhibition stand for some years until last summer,

when it put in an appearance several times. Eclair (Lacharme, 1883) is a splendid Rose of the same colour, being a very vivid red. This is large, full, and of perfect form. It is a good grower and a grand autumnal Rose.—R.

Tea Rose Adam in pots—I have several kinds of Tea Roses under cultivation both in pots and in the open air. Needing them somewhat early, I generally put a few plants into a warm house early in December. I have noticed that for several years in succession Adam has been the first to open its blooms. With me it is a most useful kind, very free, and the flowers of good size. It grows well in pots.—J. C. F.

NOTES OF THE WEEK.

The mound at Kew near the Cumberland Gate entrance is bright with early spring flowers. Thousands of yellow Crocuses hide the Grass with their brilliant flowers, and on the level in the shadier spots Snowdrops make a sheet of white, varied with the blue Scilla bifolia and purple Crocuses. The Christmas Roses planted here in quantity in the shade and moisture have been flowering for many weeks, but are now past their best.

Agathæa cœlestis.—This is an old plant, having been introduced as far back as 1759 from the Cape of Good Hope. We noticed several specimens of it in full bloom in the Swanley nursery, and the Daisy-like flowers of an attractive blue colour are very pleasing against the rich green leaves. It blooms more or less throughout the year, and is very easily grown. Cuttings taken at any time will strike freely in warmth and soon make good plants.

Urceocharis Clibrani.—By post this day we have sent you a spike of our new Urceocharis Clibrani, a description of which with illustration appeared in the *Gardeners' Chronicle* of August 20 last. The spike is not so good as the one the sketch for the *Chronicle* was taken from. We have been obliged to cut the stalk so as to get it into the box, but send you the portions so that you may see the length; it was cut off just above the top of the bulb.—W. CLIBRAN AND SON.

* * A lovely, distinct, and first-rate thing.—ED.

Primroses grown under glass.—Herewith I send you Primroses grown in a cold house. Many of these hardy flowers are most useful when grown under glass, the more so to those who have not much accommodation to grow tender plants. Such things as these hardy Polyanthus are far more worth glass accommodation, such as cold frames and pits, than many things that now occupy these structures. The plants the flowers sent were gathered from were lifted from the open border early in December, placed in boxes and given glass shelter. We have been gathering for the last four or five weeks, and they will continue some time yet.—JOHN CROOK, *Forde Abbey*.

* * A beautiful gathering, the blooms quite equal to those from the open later on.—ED.

Notes from Baden-Baden.—The Snowdrop from Thasos seems to be a very distinct plant; it is earlier and quite as large as G. Elwesi. In consequence of the severe winter plants are backward, and whatever now is in flower may be a fortnight earlier under better circumstances. Of Crocuses there are two new ones from Kharput and the Gaur Dag; the one is very free flowering and of a nankeen colour, the other is small, in various shades from white to blue, all with violet stripes. C. banaticus, figured as veluchensis in *Botanical Magazine*, is a striking sort; its bright purple flowers with dark rims are very pleasing. A small rose-coloured Colchicum from Egin has many flowers to one bulb, and though it is small it is desirable on account of its earliness. Helleborus niger pumillifolius, still good, is a showy variety; so is also H. niger Hildebrandi, the flowers of which are very full and massive. Iris histri-

oides has opened within the last few days and is unusually beautiful, the bulbs having been left in the soil and not taken up last summer. Iris Bornmülleri is better than Danfordiae; the keel of the claws is green and the wings are more developed than any other part of the flower, thus giving a broader sheet of colour. Seen side by side the difference is remarkable.—MAX LEICHTLIN, *Baden-Baden*.

Saxifraga Burseriana is delightful when in full bloom, as in the Chiswick Gardens, where there is a large clump of it, the white flowers smothering the dense moss-like growth. We noticed it also in full flower at Long Ditton, where the variety major was also in bloom. This has large flowers, but the petals are more flimsy. A few potfuls of either the species or its form are very attractive in the early year and good tufts on the rockery are of interest.

Cactuses at Swanley.—Those who care for Cactuses will find a large house filled with the best kinds, many of them seedlings raised by the late Mr. Major, of Croydon, in the nursery of Messrs. H. Cannell and Sons. The collection is especially rich in Phyllocactuses, a family of useful succulents, the flowers of large size and splendidly coloured. This is a class that deserves to be grown well in gardens, which cannot be said of Cactuses in general, as they are rather curious and interesting than beautiful. The night-flowering Cereus, Yucca filamentosa, and the American Aloes are grown largely. One species, Aloe ciliaris, was in bloom. It has a bright flower, produced on a tall stem, and is not unlike a Lachenalia in expression, tubular and bright salmon-rose topped with green. It seems that Cactuses are about to enjoy popularity.

Hardy plants at Tottenham.—The following are in flower at the Hale Farm Nurseries at Tottenham:—

Iris reticulata	Narcissus nanus
" purpurea	cyclamineus
cyanea	Bulbocodium citrinus,
" persica purpurea	and many other
histrioides	sorts, forced
stylosa alba	Scilla bifolia
elata	" grandiflora
" alba	Corydalis bracteata
Kolpakowskiana	Ledebouriana
Galanthus plicatus	Leontice altaica
Elwesi	Hyacinthus azureus
nivalis	Saxifraga Burseriana
" fl. pl.	luteo-purpurea
Perryi	sancta
byzantium	Hepaticas
Elwesi robustus	Lenten Roses
Fosteri	Crocus, many species
Scharloki	Cyclamen in variety
Atkinsi	Sciloporus Bigelowi
lutescens	Iris fibriata
viridescens	Danfordiae
Narcissus in nimus	reticulata major

Two hardy Rhododendrons in bloom now are R. præcox and R. dauricum, sometimes spelt daburicum, and on the last day in February the plants were in full flower in the arboretum at Kew, where they are in a measure protected from cold winds. These shrubs at this season of the year make an agreeable picture, the wealth of flowers standing out boldly from the surrounding leafage. R. præcox is a hybrid, raised by Mr. Davis, of Ormskirk, between R. dahuricum and R. ciliatum. It has been much used for hybridising, but one chief point is its earliness in flower. This hybrid was first shown at a meeting of the Royal Horticultural Society in 1861, and makes a spreading bush, the leaves rich shining green, and the flowers produced in small clusters, about six together. Individually they are about 1½ inches across and light rose-purple in colour. R. dahuricum has small leaves, also of a deep green colour, and the flowers are smaller, but of a deeper rose-purple shade. It blooms with great freedom, and both kinds may be grown with advantage. The variety atro-virens keeps its foliage longer and the flowers are of a deeper shade of colour. Both are natives of Siberia, and the type was introduced as far back as 1780. These early kinds have given rise to a useful race of dwarf Rhododendrons.

STOVE AND GREENHOUSE.

LILIUM LONGIFLORUM HARRISI.

THIS beautiful Lily is evidently growing in popularity, and that rightly so. Being so amenable to pot culture for flowering at almost any season of the year, it is greatly appreciated, more particularly in the trade and by the florists and decorators. In many private gardens it is also grown, but its culture in this direction does not appear to be taken up so extensively as one would imagine, especially where large conservatories have to be kept gay, or where a quantity of choice cut flowers has to be provided. Only a few days ago I saw a house full of this variety in the best possible condition and in various stages of growth. The plants in bloom were

over where necessary. Light loam and leaf-soil with plenty of sand or road scrapings will suit this Lily well. Green-fly is a troublesome pest, but can be kept down by the usual methods. This Lily revels in a humid atmosphere when being forced, and takes water freely when well rooted. How it came to be designated *Harrisi* I do not know; I fail to see any difference between it and the type other than what may be expected in the case of vigorous bulbs grown under more congenial conditions in a warmer climate. This I consider makes all the difference, for I have noticed that *Harrisi* (so-called) reverts to the normal type after a season or two in this country. A good proof in support of this is the fact that *L. longiflorum* has been sought for in quantity in this country and on the Continent for sending out to the Bermudas, where after a season

loch, of Rothesay, say that the plant figured was potted in October in good turfy soil and sand, a 7-inch pot being used. After being plunged in cocoa-nut fibre refuse in a cold frame till well rooted, it was removed to a cold greenhouse, and flowered in July. —ED.

Herbaceous Calceolarias.—Since the introduction of the tuberous *Begonias* the herbaceous *Calceolarias* have been somewhat neglected, yet they well deserve to receive more attention, as they come into flower early in the season, and make a very effective display in the cool conservatory. For some purposes they are not so serviceable as many flowering plants, owing to their being so easily damaged in moving them about. Yet they have other advantages, one being that they may be grown on without the aid of much artificial heat; they will even stand some frost, but it is



Lilium longiflorum Harrisi. Engraved for THE GARDEN from a photograph sent by Messrs. Dobbie and Co., Rothesay, N.B.

some 4 feet in height, with from four to six well-developed flowers upon stout stems. The house in which these were being grown was kept at a stove temperature, warmth being evidently congenial to them. For the earliest flowering the bulbs should be secured as soon as they arrive from the Bermudas. This will be at about the same time as the Roman Hyacinths arrive from the south of France. Forcing must not be attempted until some few roots have been made; then even the temperature should be worked up gradually for a time. By taking all possible advantage, the earliest may be had in flower during December or even in November. Successions are easily obtained from that time up to May and June from the Bermuda importations. Those following in June, July, and August I have a shrewd suspicion are Cape grown bulbs. I have myself purchased them as such in the spring. Those blooming the earliest will give a few more flowers from succeeding growths the following autumn; thus the year is nearly or quite bridged

or two's growth they would return in the improved form to this country. The conditions under which the bulbs are grown is in my opinion the only cause of variation as seen between home-grown and imported ones. As to their culture at the Cape, it is only reasonable, being a means of further extending the season. This is done, we know, in the case of the Tuberose, why not also in that of the Lily in question? A word upon the custom of the florists in depriving the flowers of their pollen-vessels is necessary, the flowers being thus shorn of a part of their beauty. Why not dip or touch these parts with gum water instead, so as to prevent the pollen from tarnishing the flowers? Or wrap a little tissue paper around the vessels until the blooms are in actual use? Anything is better than thus robbing the flowers of a part of their attractiveness whenever and wherever it is possible.—SIMPLEX.

. Messrs. Dobbie and Co., who kindly sent us the photograph by Messrs. Sweet and Kin-

better to keep the temperature just above freezing point. Provided this is done, the cooler they can be kept the better. For early spring flowering the seed may be sown early in July. A frame or hand-glass under a north wall is the best place for raising the seed, and also for growing on the young plants. Later on when the sun is less powerful the plants will be all the better in a more exposed position. *Calceolarias* thrive best where they can stand on a cool moist bottom and have plenty of surface air without getting a dry draught through them. They should be potted in a compost of loam, leaf-mould, and well-rotted manure; the compost should be used in a rough state and not pressed too firmly. Throughout the winter they should have all the light available and plenty of air at all times when the thermometer stands above freezing point. With careful attention to the watering they will make healthy foliage and short stocky plants. Of course, the growth sometimes depends upon the strain grown, but it more frequently happens that loose straggling plants are the result of bad culture rather than the fault of the strain of seed. Green-fly is their greatest enemy, and a little

warmth will not only weaken the plants, but will encourage the spread of this pest, which can only be kept in check by fumigating at frequent intervals.—F. H.

Asparagus tenuissimus.—The great popularity of *Asparagus plumosus nanus*, and in a lesser degree of *A. plumosus*, has to a great extent overshadowed the merits of *A. tenuissimus*, which is, however, a very pretty member of the family. It is a good deal in the way of *A. plumosus*, but is even more delicate in texture, and is also of a somewhat lighter green. The young shoots of this strike root very readily from cuttings, and if three or more are put around the sides of a small pot they quickly form neat little plants, which are useful for many purposes. Of course, the cuttings must be kept in a cool propagating case where there is a gentle bottom-heat till rooted. This *Asparagus* may be kept as dwarf plants for some time, but when growing freely it develops a climbing habit, and will soon cover a considerable space. A back wall when thoroughly covered with this *A. paragus* is a very beautiful object, especially after syinging, when the moisture hangs in countless little drops supported by the delicate leaves. *Asparagus plumosus nanus*, which is such a general favourite, cannot be propagated from cuttings, but seeds are now not difficult to obtain, which accounts for the cheap rate at which it is now sold. Another species which well deserves a note in its favour is *A. scandens*, which, though not so light and elegant as those above-mentioned, is a very pretty greenhouse climber, and quite distinct from any of the others. The leaves of this are a good deal broader than in *A. plumosus* and of a rich bright green tint. The climbing stems are numerous, and being well furnished with leaves, a thriving plant presents a dense mass of foliage.—H. P.

Dracæna Doucetti.—The merits of this are of a very high order, either as a small plant for the table or in a larger state for grouping. Though generally known under the above name, it is really a variety of *Cordyline australis*, with narrow, sharply-pointed leaves, each of which is regularly edged with a stripe of yellowish white. The leaves too are more numerous than in most forms of *Cordyline australis*. It is of Continental origin, and was awarded a first-class certificate by the Royal Horticultural Society on May 14, 1889, when it was exhibited by Messrs. Veitch. It may be kept for a lengthened period in a comparatively small pot, which enhances its value for many purposes, and when at last it is absolutely necessary that the plant be repotted it is often possible to take off a portion of the large tap root-like rhizome, which may be utilised for propagating from. This may be potted in such a manner that the point is just below the surface of the soil, and if placed in a gentle heat it will soon commence to grow. A small pot should be used for the purpose.—T.

Fuchsia splendens.—In making a selection of *Fuchsias* for flowering in the greenhouse, the choice need by no means be limited to the garden varieties, for among the original species are many very beautiful forms, some of which in appearance differ widely from the generally accepted ideas of a *Fuchsia*. The species in question, *splendens*, is one of them, for the blooms are in shape more like those of one of the *Correas* than of a *Fuchsia*. It is a free-growing plant, which where sufficient space is allowed will grow into a good-sized bush, but at the same time it will flower freely in pots from 6 inches to 8 inches in diameter. The leaves are heart-shaped and of a pale green tint, while the colour of the flower is bright crimson, tipped with green. If the plants are grown in a well-exposed position during the summer so that the wood is thoroughly ripened they will in a warm greenhouse often flower more or less throughout the winter, or at all events they will commence quite early in the new year, and continue till spring is well advanced. In an ordinary greenhouse with no special treatment, they seldom flower before March or April. This *Fuchsia* is a native of Mexico, and was introduced in 1841. In advocat-

ing the claims for extended cultivation of some of the original species of *Fuchsia*, one has but to mention such showy forms as *F. fulgens*, *F. dependens* (of which a coloured plate was given in *THE GARDEN*, May 16, 1891), *F. corymbiflora*, *F. serratifolia*, *F. boliviensis*, and *F. triphylla*, while less showy, but still very pretty varieties are *F. microphylla*, *F. thymifolia*, and *F. procumbens*. To these must also be added the numerous hardy forms which might with advantage be more often planted in our gardens, as once established an annual mulching of leaves is about all they require.—H. P.

TREE CARNATIONS.

WOULD some correspondent give me the names of twelve good winter-blooming Carnations that can be relied on to flower about January 1; also a few notes on their culture and treatment, so as to have them at their best at the above date? Is it possible to have the *Souvenir de la Malmaison* class in flower at that time?—A. C.

* * * Tree Carnations may be propagated at any time from October until the end of March. Strong side shoots which have not begun to run up for bloom make the best cuttings. Light sandy loam should be used for the cutting-pots, and a little extra sand for the surface. The cuttings must be kept quite fresh and should be placed in a close frame as soon as possible after they are put into the pots; they will root best where there is a little bottom-heat. They should be potted off singly as soon as they are well rooted, and may be kept close for a time, but as soon as established they should have all the light and air possible. Those struck in the earlier part of the winter will require stopping once. Sorts vary a little in this respect. Those inclined to run up tall may perhaps be stopped twice, but some sorts will do quite as well if not stopped at all. The leading shoot may come into flower early, and will be useful in the autumn, while the side shoots will follow on later. Plants of such as *Miss Joliffe*, *Winter Cheer*, &c., which bloom during August and September, will flower again about midwinter. The early batch will make plants large enough for 6-inch or 7-inch pots, but 5-inch pots will be large enough for flowering the plants propagated in the spring. During the summer-time the plants will do well out in the open, but it is best to provide some means of protecting them from heavy rains, especially newly-potted plants. I like to have the plants under glass early in the autumn. If the weather is inclined to be stormy I would have them indoors in August, and under any circumstances they should not remain outside after the first week in September. It is very essential to keep the plants free from insects. While out-of-doors frequent syinging with clear soot water will keep off the green-fly and also help to keep away the fly which breeds the maggot which so many growers have found very troublesome during the last few years. After the plants are housed fumigating will be the best means of keeping them clean. Carnations cannot be forced into bloom by artificial heat. By affording plenty of light and air with just sufficient fire-heat to keep out frost, or to dry the atmosphere in wet weather, good results will follow, but give them too much heat and weak spindly growth and small imperfect flowers will follow. A few days' bright sunshine will make a wonderful difference in the opening of the flowers, while all the heat that can be given will not force them into bloom in dull sunless weather.

The following will be found a good selection of varieties for winter flowering. Commencing with white, I should give *Mrs. Moore* first place; this is not quite so vigorous as some, but it is of dwarf habit and blooms freely, the flowers being large, full and pure white. *La Neige* has smaller flowers, which are freely produced throughout the year. Of pink varieties, *Miss Joliffe Improved* is the best; it may be said to be the most popular of all this useful class, the peculiarly soft shade of delicate flesh-pink being a colour much in demand, besides which this variety has scarcely an equal in regard to being free-flowering. The

only difference in this and the old variety of *Miss Joliffe* is that the flowers are larger and brighter in colour. *Mrs. W. H. Grenfell* is another good flesh-pink, with broad, smooth petals. *Mrs. Llewellyn* is of a deeper shade of pink, and of free growth. Of scarlet varieties, *Winter Cheer* takes first place. It is of dwarf, but vigorous habit, with good full, well-formed flowers of a rich, deep scarlet, and will bloom as freely at mid-winter as in summer; the same plants will keep up a succession of bloom for a very considerable time. There are many other good scarlet varieties, *Florain*, *Duke of Fife*, and *A. Alegatière* being among the best. Of crimson varieties, *Mrs. A. Hemsley*, of which a coloured plate was given in *THE GARDEN* about a year ago, is one of the finest. The flowers, of a rich deep shade of colour, are well formed, freely produced, and have the perfume of the old *Clove*. *Uriah Pike*, of which I have only seen blooms, is a remarkably fine crimson, but the stock of this is confined to one or two growers who do not seem disposed to put it into commerce. *Dr. Raymond* is another good crimson, but does not keep up a succession of bloom so long as some. Of yellows, *Andalusia* is the only one which really belongs to the winter-flowering section. A few years ago this did remarkably well with me, but like most yellow varieties, it has somewhat deteriorated. *Pride of Penshurst* and *Germania* are both grown extensively for winter use, but it is only under the most favourable conditions that they will produce good blooms during the winter months, and then it is only from the main shoots of young plants, or the side shoots of older plants which have been grown on for the purpose, or, to be more definite, the same plants flower only once a year.

The *Malmaisons* are a very distinct class of Carnations. With the exception of *Mme. A. Warocque*, they can hardly be recommended for winter-flowering, though it is possible to have them in bloom in February, or even at Christmas. Old plants are the best for winter-flowering, or if young plants, they must be those which were layered very early in the season and grown on under glass during the summer. There are now several distinct shades of colour varying from pale flesh to crimson-scarlet, the prettiest of which is the bright flesh-pink. The *Malmaisons* require rather different treatment to the other winter-flowering Carnations. In the first place they should be propagated from layers instead of cuttings. Being of vigorous and rather succulent growth, they require some care to keep them in a healthy condition. Although I have seen good results from plants layered in the open ground, I find it is safer to have them in frames where they can be protected from heavy rains. For flowering the following winter it is only the early layers that can be depended upon, or, as I have previously stated, it is perhaps better to rely on two-year-old plants. I also find that these do better when grown in a rather light compost. Unless a very light fibrous loam can be had, some peat may be used with advantage; the drainage should also be good.

F. H.

Amasonia punicea.—This has flowers of a pure white, changing to a soft shade of yellow with age, enclosed in large reddish purple bracts, which last in all their beauty for months. We have to thank the Messrs. Veitch, of Chelsea, for this exceedingly beautiful plant, which has been known nearly a hundred years. It has a wide distribution in Tropical America. I have had this plant sent from several readers, and recently saw it very fine in Sir Trevor Lawrence's garden.—W. H. G.

Tropæolum tricolor.—Many years ago gardeners took much pride in growing this lovely greenhouse climber in pots. Now it is too seldom seen, and has largely given place to other plants that are perhaps more easily grown, but cannot possibly be prettier. The tubers will always start early in the winter; hence it is needful that they be removed from the old soil and be repotted in good time. On the whole it may be safest to

have the tubers removed from the old soil so soon as they have ripened, stood on a little cocoa-fibre refuse or dry sand in a shallow box, and then be just covered with the same material and kept in the light, yet in a fairly cool place so as not to provoke growth unduly early. If shoots have been formed before repotting, no harm need be done. A good deal of attention is needed to their training, so that spray, wire-work, or whatsoever is used for training them on be effectually covered.—A. D.

Senecio grandifolius.—Either for its foliage or for its flowers alone, this old Mexican composite would be considered worthy of cultivation. It is indeed to be seen occasionally used as a sub-tropical plant out of doors in summer, for which purpose its large, deep green, coarsely toothed leaves, purplish petioles and stem render it eminently suited. At this time of year, however, it is as a flowering plant that it claims notice, its corymbs of yellow flowers, which, as regards size, are in keeping with the dimensions of its leaves, being very conspicuous. It may be grown in pots, cuttings being taken as soon as the young growth is large enough and sufficiently firm; but it is difficult to keep such vigorous growing subjects fed up when in pots, and, as a matter of convenience, a much better method is to plant them out in a border in a light part of the conservatory. By this means plants may be kept to a convenient size a good many years if pruned back each spring after flowering. The best effect of all is produced by a group of say half-a-dozen plants, the long bare stems of specimens a few years old being screened by dwarfier growing subjects in front. The leaves are oblong and vary in size from 10 inches to 18 inches in length. Their inflorescence attains as much or more in diameter. Flowering plants will vary from 2 feet to 9 feet in height, but this may be regulated by pruning.

The Epacris is one of those hard-wooded plants that seem to have gone out of fashion or become overshadowed by the interest manifested in Orchids. One finds a few of the best Heaths well cultivated in gardens, but not the same regard paid to the Epacris, although a small selection embraces many beautiful shades of colour. We have lately, in visiting gardens and nurseries where they are grown well, made note of a few of the best kinds, and they are as follows: Amongst those with white flowers especial note was made of Mont Blanc, conspicuous for its compact habit; Vesta, the flowers of great purity; and candidissima, which may be especially recommended for cutting; a few of its flower-clad shoots are charming in the choicest arrangements. A distinct kind is Butterfly, which has wide delicate pink flowers; and others of note comprise The Bride, pure white; Eclipse, rich crimson; Lady Alice Peel, the flowers quite of a salmon shade; rosea elegans, pink, deepening to a richer shade at the base; elegans, delicate rose; and miniata splendens, rich scarlet. This is not a complete list of the finest Epacris, but the foregoing deserve to be well grown, and the flowers will be of value for cutting in the winter season. It is not always possible to devote a house to Heaths and Epacris, but a few well-grown plants of the best varieties are always attractive.

Strobilanthes isophylla.—From Christmas up to February this old occupant of our stoves and greenhouses may be counted amongst the most useful of indoor plants then in bloom. If grown on in a warm or intermediate house, the plants may be used in the greenhouse when in flower, as is now done in the No. 4 house at Kew, where a batch has been in bloom for several weeks. On the whole, however, where it can be arranged, they flower better if kept in a temperature not below that of an intermediate house. We have seen old plants kept permanently in a fairly warm stove. These attained a large size, and not only flowered in great profusion during winter, but throughout the rest of the year had a bright and interesting appearance by reason of the red-purple tinge developed in the leaves. This colour is always brightest when the plants are placed in heat and exposed to plenty of sunlight. The species is a native of the East Indies and has been known in

gardens for fifty years. It used to be generally known under the name Goldfussia, and belongs to the natural order Acanthaceæ, a group especially rich in autumn and winter-flowering plants. The flowers of this species are in clusters produced from the axils of the leaves, the colour being a pale rose-purple. From 6 inches to 1 foot of the terminal portion of the branches will carry a cluster of flowers in each leaf axil. Propagation is easily effected by cuttings, and in order to obtain bushy plants, they should be stopped frequently when small. Bushes 2 feet high and as much in diameter may be obtained in two or three years, but it is, as a rule, more convenient to renew the stock annually or biennially.

Clivia miniata.—Without wishing to depreciate the value of the excellent remarks of "W. B." on page 92, I may state that this plant has been flowering with me since November last in an average temperature of 35° to 50°, and to-day, February 7, I have a plant in a 6-inch pot carrying three spikes and thirty-five fully expanded blooms. This commenced to bloom in December, while another in a 12-inch pot commenced in November, and is now bearing nine spikes and eighty-seven expanded flowers.—E. CASTLE.

OLEANDERS NOT FLOWERING.

I HAVE two Oleanders in 12-inch pots, and for the last three years they have shown well for bloom, but it has never developed, so I fear the treatment is wrong in some way. The gardener tells me he has taken away leading growths near the flower-buds to give strength to the bloom, but without success. They have had a little artificial feeding, but grow in leaf-mould and loam mixture, and are kept in a temperature of from 60° to 70°. I have tried keeping water in the saucers, and I have also kept them drier, and so far have been very unsuccessful. Would you advise their being cut down, as they are at present about 6 feet high?—M. R.

* * In reply to "M. R.," I gather that the plants have been kept in too warm a house, for it is inferred that 60° to 70° of temperature alludes to this season of the year. During the late autumn, winter, and early spring, quite a cool greenhouse (40° at night being the minimum) will be ample for them. By this cool treatment the plants are kept comparatively at rest, starting away again much more kindly, when as the spring advances we have warmer and brighter days. Oleanders may be grown well in a greenhouse all the year round, but during the spring as growth commences and later on as the flower-buds appear the house should not be what would then be termed quite a cool house, which would have air left on more or less all night. This is a trifle too cool for them, although I would much prefer it to the stove temperature. I can quite understand that the plants would not flower satisfactorily in such a temperature as they have received. This with the attendant moisture would all induce leaf-development, and that, as it is stated, to the disparagement of the flower. I have grown and flowered Oleanders profusely year after year. The house in which they were kept from the middle of October until the following May or June used to drop below 40° at night during sharp frosts, but as the spring advanced the house was kept as a warm greenhouse (i.e., ordinary greenhouse treatment in the day, but close at night with a little warmth in the pipes). There the plants would by the time mentioned be almost in flower, when they were taken to the conservatory, this being well ventilated during the day, but closed at night with no fire-heat; under this mode of culture they flowered freely enough. No stopping of the shoots was found to be necessary because the plants never made too much wood growth. I should not advise the repotting of the plants nor pruning either, provided they are not too large to be accommodated. The growth of the plants in question has evidently tended towards leaves rather than flower, but if they can be treated as suggested, being kept well exposed to the light, letting them have all the sun-

shine upon them that is possible, with no more water until warmer weather comes than is quite necessary to keep them healthy, they should be induced to flower in due course. When pot-bound and growing freely they should receive plentiful supplies of water. The Oleander thrives well through the Mediterranean region; this fact will perhaps be sufficient to indicate any further treatment that may be essential to them. The soil in which the plants are potted is suitable to them. I prefer myself to dispense with saucers for the plants, as this tends to excite woody growth too much.—NERIUM.

Musa Martini.—A new species of Barana from the island of Teneriffe is advertised under this name by M. Leonard Lille, of Lyons. It is described as being more hardy than M. Ensete, which it also equals in ornamental appearance and luxuriance of growth. The stem and the veinings of the leaves are of a reddish hue, and the texture of the leaves is so thick and tough, that they are not liable to be torn by the wind, as the leaves of M. Ensete so often are, unfortunately. Should this new species fully come up to the description of it (proof of which cannot be long wanting), it need hardly be observed that it will prove a very valuable acquisition. M. Lille's address is 11, Quai des Célestins, à Lyon (Rhône), France.—*Revue Horticole.*

Cyrtanthus McKeni.—This a good companion to C. lutescens, mentioned on page 91, for it very much resembles that species, except that the flowers are white and it is evergreen, while C. lutescens is deciduous. They are certainly very pretty little flowering bulbs for the greenhouse, and of easy culture, for, treated like Pelargoniums they will grow and flower well year after year. In common with many other bulbous plants, they are rather impatient of disturbance at the roots, so that in potting them thorough drainage must be ensured, and the soil used such as will stand for years in good condition. A compost principally consisting of open loam and sand will suit them well. As the bulbs increase in numbers they in time become tightly wedged together, and in this state will flower freely. While many bulbous plants take some years to attain flowering size, C. McKeni will sometimes reach that stage in about eighteen months from the time of sowing the seed.—H. P.

Bauera rubioides.—Few of the hard-wooded or New Holland plants rival this in its continuous blooming qualities, for it will often flower from February, or even earlier, till summer is well advanced. Compared with many others of the same class, this Bauera is not particularly showy, yet at the same time it possesses a quiet beauty of its own. The Bauera forms a small, much-branched bush, whose somewhat spreading shoots are clothed with narrow leaves and studded with blossoms about three-quarters of an inch in diameter and mauve-pink in colour. It is of easier culture than many New Holland plants, as cuttings put in sandy peat and covered with a bell-glass strike root without difficulty, while much the same compost must be used when potting them off, though as the plants increase in size a little loam may with advantage be added. This shrub is a native of a considerable tract of country in Australia, and thrives particularly in Tasmania, according to a very interesting article in THE GARDEN for July 4, 1891.—T.

Rhododendron Countess of Haddington.—The genus Rhododendron was not only one of the first to which the hybridist turned his attention, but it may, I think, be included amongst those in which some of his most notable successes have been obtained. There are very few greenhouse plants, for instance, which make so lovely a display at the present season as the subject of this note. It is one of a good many hybrids which owe parentage in part to R. ciliatum, a rather dwarf Himalayan species. In this instance R. Dalhousie was the other parent, and there is not the slightest doubt that for the purposes of the garden the off-spring is much superior to either

that species or *R. ciliatum*. It is intermediate between the two, the flowers not being so large as those of *R. Daltousiae*, but larger than in *R. ciliatum*. They are bell shaped and measure 3 inches in length of corolla and about the same in width. Rarely more than three or four flowers occur in a cluster. They are of a most delicate bluish-white. The leaves are bright green and ciliated.—B.

Eriostemon cuspidatus.—During the ensuing few weeks some of the most beautiful of our cultivated Australian plants will be at the height of their flowering season. Compared with the period of a preceding generation of gardeners the number of species of this class now grown is small, but it is still within the power of anyone desirous of getting together a fair collection of these once popular plants to do so. Messrs. Low alone grow a large number of the most useful in their nursery at Enfield. Next to the Acacias the Eriostemons have perhaps during February as great a claim on our notice as any in this group. *E. cuspidatus* is a really beautiful plant both as regards its flowers and its habit and foliage. A good specimen is now blossoming in No. 4 house at Kew. It has been planted out for about two years in a peat bed in the centre of the house, and this method of culture evidently suits it perfectly. Its leaves, which are lanceolate and about $1\frac{1}{2}$ inches long, are stout in texture and of the deepest shade of green. In the axil of each one (and they are borne very closely together on the branches) a single flower occurs. This flower is about an inch across, of somewhat star-like form, and is of the purest white. The specimen itself is a round bush, some 4 feet through and nearly as much in height. Eriostemons are, generally speaking, of the simplest culture. They like to be potted in a peaty soil and kept fairly moist at all times.—B.

SHORT NOTES.—STOVE AND GREENHOUSE.

Costus igneus.—This is a very pretty species of the Zingiberaceae, and although the roots of the majority are not of any economic value, the flowers are very gay at this season, being large and of a rich orange colour. It is now, and has been, very gay in Sir Trevor Lawrence's stoves at Dorking.—W. H. G.

Crossandra guineensis (*G. Crossley*). The plant you send is not a *Pittonia*, but *Crossandra guineensis*. It was introduced, I believe, by the Messrs. Veitch, of Chelsea, from the west coast of Africa some fifteen or sixteen years ago. In addition to the golden reticulated leaves, it produces an erect spike beset with numerous soft-lilac-coloured flowers.—W. H. G.

Quesnelia van Houtteana.—This, the third species makes up a fine trio sent by my friend. It is a handsome plant, well armed with stout teeth; the spike is erect and the flowers dense; the bracts of the blooms are reddish-scarlet at the tips, and the points of the flowers are deep violet. This plant was introduced by M. van Houtte about fifteen years ago, when it was called *Echinostachys van Houtteana*.—W. H. G.

Billbergia Breautiana.—"C. P." sends me a fine spike of this hybrid Bromeliad raised some years ago by M. André. The spike measures more than 2 feet in length; this in the lower or basal part is furnished with large carmine bracts, and above these are quantities of light violet-blue flowers. It is a very beautiful plant. I wish the same attention was given to these plants as they obtain in France and Belgium.—W. H. G.

Billbergia Sanderiana also comes from "C. P." This is a fine bold-growing species; the leaves are bright green on both sides, armed at the edges with stout blackish brown teeth; the pendent spike is 2 feet long, the bracts somewhat small in size, bright pink, the flowers yellowish green, the points of the petals being of a clear bright blue. This plant, although not so showy as *B. Breautiana*, is a very beautiful species. It appears to have been gathered by collectors many years ago, but it was introduced some few years ago in a living state by Mr. Sander, of St. Albans.—W. H. G.

SOWING SMALL SEEDS.

DURING the month of March large numbers of seeds are sown, and in the case of many indoor plants required for ornament, the seeds are very small, so that more care is needed than in the case of larger ones. As it is no uncommon thing to see failures among these very minute seeds, a few words as to their treatment may not be out of place. Of these tiny seeds referred to, examples are to be found in the tuberous *Begonia*, *Gloxinia*, *Tydaea*, *Streptocarpus* and such subjects, all of which are required to furnish a display of bloom later on. Many failures with such as these are no doubt owing to their being too heavily covered when sown. For my own part, I do not sprinkle any soil whatever over them. For such seeds pots 5 inches in diameter will be found a convenient size, and to commence with they should be perfectly clean and then be half filled with broken crocks for drainage, over which a little Moss or rough soil must be placed. The compost for seed-sowing may consist of about equal parts of loam and leaf-mould, with a liberal amount of sand. If the whole is passed through a sieve with a quarter of an inch mesh, it will greatly facilitate the pricking off of the young seedlings when they are sufficiently advanced. This prepared compost should be put into the pots, pressed down moderately firm and made quite level, leaving the surface of it about half an inch below the rim of the pot. Then a thorough watering must be given by means of a fine rose, and when the soil is still wet, that is a very suitable time to sow the seed, which will at once adhere to the moistened surface. The seed should be sown thinly and care taken to distribute it as regularly as possible, for once on the soil it cannot be disturbed. The only covering needed will be a pane of glass laid on the pot, which will retain the moisture for some time, so that very little watering will be needed before the young plants put in an appearance. At the same time they must not be allowed to become too dry, as drought soon proves fatal to the germinating seeds. If placed in a structure where the temperature is maintained at from 70° to 80°, the seed will soon germinate, and directly this takes place a little air should be given, while in a day or two the glass may be altogether removed. The young plants being in this stage very delicate should be carefully shaded during bright sunshine, while a sharp look out must be kept in order that if the seedlings show any signs of damping off means must be at once taken to arrest it. This is usually accomplished by pricking off the young plants into other pots, which is an operation that from their delicate character requires considerable care. The pots should be prepared as for the seed sowing, except that the surface of the soil need not be quite so far below the rim of the pot. For very minute seedlings the operation of pricking them off will be facilitated if the top layer of soil to a depth of a quarter of an inch or so is passed through a sieve even finer than a quarter of an inch mesh. The pots being prepared and watered through a fine rose in order to settle the soil, they will be, after they have drained a little, ready for pricking off the young plants. This operation requires great care, and the first essential is a fine-pointed dibber made of Box or some other equally hard wood, as the hole made is much cleaner than if the dibber is formed of any soft wood. In making a hole for the reception of the seedling the dibber should be held perfectly upright, then the young plant put into position, and the soil closed around the roots by inserting the dibber exactly as before, but at a little distance from the plant, when a slight pressure towards this latter will thoroughly close the earth around it. A little practice will soon show the best way of carrying this out. Sufficient attention is not always bestowed upon this, for often the hole is made and the plant dropped in to the proper depth, then the dibber is held in a slanting position, and the soil closed up around the collar of the plant, leaving the actual roots in a little cavity which the subsequent watering will not always fill up. In handling tiny seedlings a piece of wood about the size

of a pencil with the point made thin and a small cleft at the top will be found very useful in disentangling them from each other, and picking them up for transference to their new quarters. After this additional care in shading is necessary till the roots take hold of the fresh soil. H. P.

KITCHEN GARDEN.

WITLOOF, OR CABBAGE-HEADED CHICORY.

FOR some years past during the winter months we have often seen in the markets and vegetable shops of Paris a vegetable which is commonly, but erroneously known by the name of Endive, being in reality the Witloof, or Cabbage-headed Chicory, which forms the subject of the present article. This Witloof is the forced and blanched sprout of a particular variety of large-rooted Chicory named *Chicorée de Bruxelles*, from the name of the city where its culture originated.

Witloof may be brought to table either raw, as a salad, or cooked and seasoned in various ways. In the first form it very much resembles Barbe-de-capucin, and when served up in the last-mentioned way it reminds one especially of boiled curled Endive. In any form it is an agreeable and wholesome vegetable, with a slightly bitter taste and remarkably delicate in flavour.

Witloof can only be produced by using the particular variety of large-rooted Chicory which we have just mentioned, and which is distinguished by the broadness of the leaves and especially by the great size of the midrib. These leaves, when they are blanched by forcing the plants underground, form a sort of Cabbage-like head, very solid and compact and of an ivory white colour, bearing carriage well, and, when properly attended to, keeping fresh for several days. This explains how it is that Paris is almost exclusively supplied with Witloof grown in Belgium, where it is raised at less expense, although there is nothing of either mystery or difficulty in the process. Our market gardeners are certainly able to do it quite as well as their Belgian brethren, and even the owners of private gardens can without any difficulty and at a trifling expense get their gardeners to raise Witloof for them if these gardeners will only conscientiously carry out the instructions which we here endeavour to give as clearly and as briefly as possible.

In the first place it is indispensably necessary to obtain seed of the large-rooted Brussels Chicory genuine and true to name, as this is the only kind which produces the large leaves and midribs which are essential to form the Cabbage-like heads. With any other kind of Chicory the most painstaking efforts in the process would be absolutely thrown away. The seed should be sown, during the month of June or at the beginning of July, in soil that has been deeply dug and well prepared and, preferably, in drills drawn from 6 inches to 12 inches apart, the seedlings being subsequently thinned out so as to leave from twenty to thirty plants to the square yard. If the seed is sown too early there almost always results a large proportion of plants which run to seed the same year. Seed may also be sown for transplanting, and this method is to be especially recommended in market-garden culture, where it is important to have ground occupied by any particular crop for as short a period as possible. In this case the seed is to be sown in a nursery bed in June; and about July 10 the seedlings may be

planted out in a bed from which some early crop has just been taken, and at a distance from one another of about 6 inches in every direction. In October the plants will have attained their full growth, and the roots will then be as thick as an ordinary spade-handle. They are now to be lifted from the bed, the leaves cut off at about 2 inches from the neck, and the roots shortened to the length of about 6 inches.



Chicory, Blanched (one-sixth natural size).

At the same time all lateral growths are cut away, and also any shoots which may have pushed around the principal one, which alone is to be retained. The roots thus prepared are then at once placed in an upright position side by side in the bottom of the trenches which have been prepared for the forcing. These trenches should have been opened in a well-drained part of the garden or where the water does not lodge in the soil naturally, and should be about 16 inches in depth below the level of the garden. The bottom of the trenches should have been well broken up so that the roots may be readily inserted in the soil. When the full complement of roots has been deposited in a trench, some of the soil which was taken out in making it is then shovelled back so as to fill up the interstices between the roots and cover the latter up to the necks, which should all have been placed at the same level.

After this a layer of about 8 inches deep of comparatively dry soil is shovelled in. Soil proper for the occasion may be easily prepared by placing a sufficient quantity in heaps under a shed or other shelter some weeks beforehand. The trenches are usually from about 4 feet to 4½ feet wide, and may, of course, be as long as is convenient. After a trench has been furnished with roots and dry soil, as just described, portions of it are forced in succession, according as supplies are required. The forcing is effected by covering the requisite portion of roots in the trench with a layer 8 inches to 12 inches deep of fermenting manure, and in from twelve to fifteen days' time the soil will have become sufficiently heated for the production of Witloof. The manure may then be transferred to the next portion of the trench that is to be forced, fresh manure being added to it to keep up the heat as may be required. The Cabbage-like heads of Witloof are not fully developed until after twenty days have elapsed, but when

the manure is removed, a covering of litter or straw mats suffices to retain the heat and to finish off the growth of the blanched heads. These when taken up are cut off from the roots with a small portion of the neck attached to them; they are then sorted in sizes and packed in the square baskets in which they are sold in the markets. It is computed that thirty of these heads will weigh about 2½ lbs. avoirdupois, and the wholesale price of them at Paris ranges from 80 francs to 100 francs per 100 kilogrammes (i.e., from a little over £3 to £4 per 220 lb.).

The method of forcing which has just been described may to some persons appear a very primitive and even somewhat barbarous one, and some cultivators in the neighbourhood of Paris have tried to force the Brussels Chicory into Witloof in the same way as they force the Barbe-de-capucin, that is, by placing the heating layer of manure under the roots and merely covering them at the top with a layer of sand or compost. Their efforts, however, in this direction were not attended with any success, as under this treatment the leaves opened out instead of growing in closely-set, conical-shaped heads, and it appears that the heavy pressure of the superincumbent mass of soil and manure which distinguishes the Belgian method is absolutely indispensable for the production of well-formed and really saleable heads of Witloof.

Sometimes after the heads are cut off the roots are planted again and forced gently in a semi-dark place, when they yield a green, rather bitter, but tender salad material, known at Paris as *Chicorée améliorée*.

The production of Witloof, easily accomplished in any country, is particularly to be recommended for adoption in the kitchen gardens of country houses in localities far remote from markets.

BARBE DE CAPUCIN.

Forced in winter in a dark place, the common Chicory plant yields a much-esteemed winter salad material, popularly named Barbe-de-capucin.

In producing it, use is made of plants that were sown rather thinly in the open ground from April to June. At the beginning of winter, these plants are taken up and the leaves are cut off to within about half an inch from the neck of the root. Then, in some dark place, where the temperature is not too cold, sloping beds are built up, composed of alternate layers of sand or dry soil and Chicory roots, care being taken to place the heads of these at the outside of the bed, so that the leaves may have room to grow freely. If the soil of a bed appears to be too dry, it is slightly watered and the bed is then left to itself for about three weeks, when, if the temperature has not fallen too much, leaves from 8 inches to 10 inches long may be gathered.

Of late years some growers in the neighbourhood of Paris have begun to use for this purpose the large-rooted kind of Chicory, which they force as soon as it has attained the thickness of a man's finger. The roots of this kind of Chicory, being very straight and regular in shape, are very easily placed in position in the beds, and the leaves which they yield are generally broader and more vigorous in growth than those of the common Chicory plant.

VILMORIN-ANDRIEUX ET CIE.

Winter Tomatoes and fogs.—I have kept a keen look-out this winter in the pages of THE GARDEN to see if any complaint was made respecting the effects of fog upon the Tomato plants. So far, I have seen none. It is remarkable how

well some kinds stand fog compared with others. For winter use I do not like the smooth-fruited varieties; they do not resist fog like some others and they fruit very sparingly. The best kind I have for the purpose is the old red, and though not handsome, it forms a sturdy plant, giving a good return in the early spring. Much of the evils attributed to fog depend upon temperatures, as since I wintered the plants in a lower temperature, keeping the roots on the dry side, I have had fewer losses. In a higher temperature I have lost all, no matter how strong the plants. I find it an excellent plan to winter in as low a temperature as possible, avoiding cold draughts, and then early in the year, by transferring to a warmer house, the plants soon push out flower-spikes, and in February or earlier the bloom is more easily fertilised than at the latter part of the year. I have in a previous note treated on the preparation of plants, especially near the metropolis. There is a great difference of opinion as to the use of large pots for Tomatoes, but for winter fruiting I prefer 8-inch to 10-inch pots. These are given when shifting the plants early in October. I have tried larger ones, but they are not necessary. If when the Tomatoes are placed in their fruiting quarters early in the year the pots are plunged over the rims in rich soil, the plants soon emit roots and start new growth. One great advantage in plunging is that it prevents the plants making a gross growth. Being in their winter pots, they are restricted, while planting out means all growth and little fruit. If kept in the pots, nice fruit may be had in March. If repotted when given more heat, there is more growth and fruit somewhat later; but, even then, the plants are far in advance of seedlings sown for early work. When seedlings are used for early fruiting, the best variety I have tried is Horsford's Prelude, its only drawback being its small size. It is a free setter and should be heavily thinned. We have now got some winter varieties specially sent out for winter fruiting. These I hope to give a trial next season. I have tried many of the older kinds, but so far the old red has proved the best, and is at this date (Feb. 2) showing plenty of flower-trusses. I also have a few plants of Acquisition showing freely. This latter variety is most prolific, and as it did so well in the early summer, I gave it a trial this autumn, and so far it is good. The leafage is poorer than that of the old red, but plenty of new growth and blossom is appearing.—G. WYTHES.

THE TIME TO SOW ONIONS.

I OBSERVE in a useful note on early vegetables by my friend Mr. Wythes, of Syon, in your number for February 11, page 104, this sentence, "Onions may also be sown for a few large bulbs for special purposes." Well and good, but if so why not for the main crop? Onions can hardly be too large, so long as they are solid and sound. I thoroughly agree with Mr. Wythes that early sowing favours fine bulbs. I am also well aware that a general opinion prevails that medium-sized Onions are best and keep longest; but I humbly submit that all this needs revision and fresh proof. Such views have been handed down to us through the traditions of the elders, and cultivators like Mr. Wythes, myself and others are too busy to verify such matters. For years I sowed my main crop of Onions as near to the first day of March as practicable and reaped good crops from



Witloof, or large Brussels Chicory (one-third natural size).

that fixture. A happy accident pushed the day forward for a month on one of those dry seasons when February yielded its quota of dust in lieu of ditchfuls of water, and the result was so abnormally good that I adhered to February and sometimes tried January sowings ever after. Dates of sowing Onion or other seeds are always of less moment than the condition of the soil. Onions especially must not be sown in slush, be the calendar as it may. But by preparing the ground for Onions before winter and leaving it alone in the rough to mellow and to dry, there is seldom much difficulty in finding a suitable bed for the seed towards the end of January or early in February. The latter, however, has proved rather ticklish this year, though already there have been gleams of sunshine and spells of dryness—I must not call it drought—when Onions might have been profitably sown. No one need fear cold. The Onion is one of our hardiest plants, and though the slender tops make but slow progress against the biting winds of March, yet the roots make progress, and time gives strength, size, and money in the Onion crop. I should like to have Mr. Wythes' opinion on the importance or otherwise of a hard bed for Onions.

D. T. F.

Failure with Carrots.—Can you tell me if there is any way of preventing Carrots becoming cankered? Mine have suffered severely from this disease, notwithstanding the care taken in preparing the ground for the crop. It was not freshly manured, as I have had been grown in it the previous season, with abundance of well-rotted manure. It was ridged for the winter and very thoroughly tilled before the Carrot seed was sown. All the sorts tried were more or less affected. Those that were sound were fine shapely roots. Advice as to this trouble will be highly valued.

J. T. N.

Sowing Broad Beans in heat.—Broad Beans, if sown in boxes or pots at an early date and placed in a warm frame to germinate, and as soon as they come through the soil removed to cold frames and hardened off before planting out, give a good return in a short time. Broad Beans raised in this way are little inferior to Peas in flavour if they are gathered in a young state. In planting out, if in boxes, thin sowing should be practised, so that the plants may be lifted with a ball, also lifting several plants together. When pots are used it is much best, and there is no fear of injury to the roots in planting. Some fine soil should be drawn close up to the plant to shelter from cold winds after planting. It is often thought necessary to sow the small early Beans for first use, but the Longpod is equally hardy and gives a much better return. The improved Longpod comes in quite as early as the smaller kinds and is most prolific. There is another advantage in sowing Beans in this way. They are much dwarfer, therefore require less space, and they come into use at a time when there is less choice of vegetables, and several weeks before those sown in the open ground.—G. WYTHES.

Butter Beans.—I again allude to this section of the runner Bean, because I find in referring to it in diverse parts of the country that very few persons seem to know it. Many gardeners may, but few grow them. The comparatively few gardeners and amateurs out of the tens of thousands in the United Kingdom who have opportunities to inspect the trials of runner Beans conducted at Chiswick, or perhaps in some seedman's grounds, are familiar with the Butter Beans, but even fewer have tasted them when properly cooked. Their colour, a creamy yellow hue, may by some persons be considered objectionable, as very many will partake only of certain vegetables when served up almost artificially greened. But in these days when higher appreciation for good vegetables is being developed, prejudice in the matter of colour ought not to prevail. How many gardeners are there who would be only too pleased to be able to send to table Butter Beans as an occasional dish. Golden in colour, not stringy, very fleshy, cooked and served whole, with or without sauce, they are very delicious. Then they are easily grown, and seem

to thrive best supported with stout spray boughs as Peas are, for they do not grow so tall as do Scarlet Runners. The dwarf forms are also available for variety and growth where it may be more difficult to grow the runner varieties. The best sorts of the Butter Bean are the Hungarian and the Mont d'Or, as was found to be the case at Chiswick last autumn, when of the numerous varieties there grown those named, after being cooked, secured the highest awards.—A. D.

Seakale.—Some of the finest roots of Seakale I have ever seen have been grown during the past year from ordinary root-cuttings on ground broken up fresh for kitchen garden in the park at Farnham Castle. The roots speak volumes for the inherent goodness of the soil, for it has not been possible yet to fully incorporate into it any considerable quantity of manure. It is not merely that the roots are so massive, but are so clean and healthy. I have seen within the past few days other roots grown in highly manured market garden land, which, whilst large, were yet seriously affected by a black rot; so much so, in fact, that many had lost their side roots, and had left but a few inches of rough-looking main stem. That was a case where roots are grown by tens of thousands, and the diseased nature of the stems may be due to the excessive presence in the soil of humus or sour manure, which needs the application of lime dressings to purify it. In the former case chalk is near, and the soil, though a good turfy loam, is materially impregnated with it.—A. D.

PREPARING GROUND FOR POTATOES.

THERE cannot be any doubt that what I may term garden Potato culture has much to answer for as regards the quality many of the Potatoes of the present day have. This is brought about by heavy manuring with stable or farmyard manure. It causes a strong growth, I admit, and also a heavy crop of coarse tubers, but the less said about the quality the better. In some old gardens the soil is so strongly charged with organic matter, through years of manuring, that the mineral elements are sadly deficient. Now without these in sufficient quantity to counteract the nitrogenous matter, the quality cannot be very good. Such soils are generally described as over-manured, but they are only over-charged with organic matter, and although the advice in these cases is to forego manuring with solid manure for a year or two, yet this is not sufficient, and if good Potatoes are expected, the elements must be added to make them so. Very often the whole character of the soil for the production of good quality Potatoes may be altered by simply adding lime to the soil. I have previously urged in the pages of THE GARDEN the use of lime in the kitchen garden, especially in the case of Potatoes. I have proved its value and also seen its action in other gardens. Before commenting further on the beneficial properties of lime and also the other elements mentioned, I will refer to the getting of the soil into good order for planting.

If Potatoes are to succeed, the soil must be brought into a well pulverised state. True enough, some soils in this respect are easily worked, but those of us who have a heavy soil to deal with know the labour needed to bring it into a free working order. To attempt to work soil of this nature unless the surface is dry is only to court failure. Deep digging must be the order of the day, only digging forks being used, as with these the soil may be turned up roughly, yet lightly. Some people advocate planting at the time of digging, but this should only be attempted where the soil has previously been got into a

pulverised state. The soil cannot be too freely knocked about, and to ensure this being done thoroughly, I never met with a better system than that generally adopted throughout Herefordshire. There the soil is first got into a workable state by deep digging, adding at this time what is needed to improve it, be it manure or charred and decayed garden refuse. At the time of planting the rows are chopped out with an implement for the purpose, and as the sets are laid in, the soil is chopped back again, this all helping to get it into a pulverised state.

Now, soil which is in a rough lumpy state cannot impart to the Potato the elements needed for a satisfactory growth, even if they be present in the soil, so it will be very obvious that to ensure this taking place thoroughly the ground must be brought into a free working state. I never could see the use of hurrying the planting of Potatoes. From the middle to the end of March is quite time enough, and as between now and then we shall most surely have some drying winds and frosts, there is yet ample time to get the soil into good condition. Three weeks of such weather reaching from the end of the present month through into the early part of next will do more good in getting the soil into a fit state than turning it up in the early winter. First get the soil into a free working state, and then planting may be carried out with dispatch.

The amount of manure required will of course depend upon the state of the ground. Artificial manures are very good in their place, and, as I have proved, the quality of the Potatoes in special cases has been much improved by their use. But if fine crops of good quality Potatoes, comparatively free from disease, are secured without the aid of artificial manures, then it may be unnecessary to apply them, relying only on the manure which has been generally used, be it from the stable, farmyard, or the garden refuse heap. If the crops are not good, also poor in quality, by the ordinary manuring, then make a change, and in addition to the manure usually given apply a dressing of potash and phosphates in the form of kainit and superphosphate of lime, these being lightly sprinkled along the drills at the time of planting. If any other stimulant is needed, a dressing of guano at the rate of 1½ cwt. per acre should be applied at the time of the first hoeing, but, as a rule, where manure is first applied this is sufficient without the aid of guano or nitrate of soda. Last season I saw a very large crop of Potatoes where nitrate of soda had been added with kainit and superphosphate, and the quality was certainly not improved. There was bulk, and that was the only redeeming feature. The soil was evidently sufficiently rich enough in nitrogenous matter. This showed that nitrate of soda should be used with caution. Soil that produces heavy crops of tubers, and these of poor quality, should certainly have a dressing if possible of kainit and superphosphate of lime, with very little manure. It would also be better to forego stable or farmyard manure for a season at any rate. There would also in these cases be a marked improvement by adding lime only, more especially in the case of old gardens rich in humus through years of manuring. To go on adding lime year after year would certainly tend to impoverish the soil, as if this were done it would deprive it of those elements which the action of the lime makes soluble. By the judicious use of stable manure with the addition of the mineral elements mentioned, good Potatoes may be secured from the same plot annually, that is, if it should not be convenient to change the site. It is only by

experimenting that growers are enabled to find out how to improve the quality of their Potatoes. It is quite evident that stable and farm-yard manure have been relied upon too exclusively in the past, and if the quality is poor with their aid only, the grower should by other means endeavour to improve such an important vegetable product. A. YOUNG.

Early sowing of seeds.—From observations that I have made during the last thirty years I am convinced more crops fail from early sowing than from any other cause. I am fully aware that soil and situation make a great difference. As an instance of this I may say that when I had a light sandy soil in North Hants I could sow most kinds of seed a fortnight earlier with advantage than I can on the soil I have to deal with in the garden I now have charge of. Compilers of cultural directions in catalogues, &c., can do but little real good, seeing they can only advise in a general way. Some two years ago a neighbour of mine tried sowing Peas in November. They came up well, but by March they cut a sorry figure, and those that stood were only two or three days earlier than those sown alongside in March. In the garden here I sowed an early Marrow Pea in a very warm sheltered border last year early in January, and although these were covered with snow on two or three occasions they did not suffer. I also sowed some in the open garden six weeks later, and not one in a hundred came up, while those sown from the same lot of seed a fortnight later were grand. Again last year the same thing happened with some dwarf Beans. It is all very well to get in a few things early at the foot of a wall provided it is warm and dry and there is not accommodation for sowing under glass, but without this I would prefer waiting till the ground got warm and dry. Again, having the ground in a nice working state is of the utmost importance; better by far wait a week or a fortnight than sow or plant in wet soil. Some two or three years ago I sowed a long row of Sweet Peas and scarcely one came up, and I sowed again from the same lot three weeks later and the greater portion germinated. Everyone who has had much to do with seeds knows that if the seeds are badly harvested or old they will not germinate in cold, wet soil. In proof of this, most growers in this district found Onions and Marrow Peas come badly last year through their not being harvested well the previous year. What applies to open-air cultivation applies in a more or less degree to culture under glass. Many years ago when employed in a large garden in Buckinghamshire I well remember sowing Melons at Christmas and again at the end of January. The latter had fruit fit to cut as soon as the former.—F. A. C.

Early spring flowers.—What a change this last warm week has made in the flower-beds! Instead of a mere graveyard of labels there is abundant evidence of the annual and ever-welcome floral resurrection, and what flowers are ever more welcome than these earliest spring bloomers? In a warm bed in front of a Peach house facing south *Crocus imperati* has borne several of its lovely striped flowers, the delicate creamy exterior only showing on most days, but the tiniest gleam of sunshine induces it to open and show its mauve lining. *C. Sieberi* came next, and is still a bright patch of bloom, the newly-opened flowers deep mauve and every shade down to almost white represented according to their age. *C. sulphureus* is just at its best. *Aucheri* has just opened its rich golden though tiny blossoms, and *biflorus* and *biflorus præcox* are well represented. Of *Scillas*, *bifolia*, *bifolia atrocerulea*, *Whittalli*, and one or two *sibirica* have put in an appearance, and *Narcissus minimus* makes a charming contrast to the former, while showing that the great Daffodil family is not going to be beaten in braving the early frosts. *Iris reticulata Krelagei* has opened and beaten the type, but I fancy only by a day or two. *Reticulata cyanea* is showing colour, and so are *persica* and *p. purpurea*, and another warm day or two will bring them to perfection. *Stylosa*

got cut by the frost and its buds destroyed, although close under the wall. *Bulbocodium vernum*, *Leucojum vernum*, *Galanthus Elwesii*, *Hepatica angulosa*, *Anemone blanda* and the white variety are all fully out. What a difference there is in the colour of *A. blanda*! I was specially fortunate one year in getting a batch of tubers of the deepest coloured variety; the exteriors of the blossoms they produce are deep purple, and when open the golden anthers and ultramarine-blue sepals and purplinted leaves and stems make a perfect picture. Still the paler vars. are beautiful, and look well if not near the deeper ones. It is very charming grown in a cold frame for bringing into the house, and as the blossoms push up successively, a pot lasts in full beauty a long time. *Cyclamen Atkinsii* album in a corner of the rock garden looks well peeping out between some of the mossy *Saxifragas*, but the greatest show is made as yet by the common yellow *Crocus*, which for a wonder the sparrows have left alone up to the present. By planting a row close to a conservatory where a little heat gets outside from the pipes, I could pick two or three dozen blooms quite a month ago.—E. AUGUSTUS BOWLES, *Myddelton House, Waltham Cross*.

ORCHIDS.

LYCASTES.

I AM asked by "W. A. G." why the flowers of *L. plana Measuresiana* rot before opening. Curiously enough, I have a similar complaint of *L. Skinneri* from "G. N. T." I have never experienced any difficulty in the growing of these plants, saving when they have been given too much heat. At the same time, I do not think all the *Lycastes* will thrive under such cool treatment as the *Odontoglossums* require, neither do I think they like such an amount of moisture. No doubt too much moisture is causing "W. A. G.'s" flowers to rot. *L. Skinneri* is amongst the most beautiful of Orchids, either as a plant when in flower or for cutting. The flowers will last good and be presentable for a month, provided they are given fresh water about twice a week and have a small portion of the stem cut away each time; this latter is a matter of the utmost importance. The flowers, however, are amongst the very worst to travel, as being so thick and waxy, they are very easily bruised; this, no doubt, has caused them to lose favour with many. Some of the other kinds are less fleshy in texture and are not so liable to injury, but the whole of them require to be handled very carefully. *Lycastes* should be grown in extra well-drained pots, because they like during the summer months a good supply of water both to their roots and overhead. For soil, use the fibre of good brown peat mixed with chopped *Sphagnum Moss*, making the whole firm and resting the plant upon a little cone-like mound slightly elevated above the rim of the pot. During the summer months the plants can be placed in the *Odontoglossum* house, but in the autumn they will be better if removed to a slightly warmer position, where the temperature does not fall below 50°. The water supply must be reduced, but do not at any time keep the plants quite dry, for the flowers come finer and last longer if the plants are kept nicely moist. Moreover, the plants will lose their leaves if they are allowed to become too dry, and then when in bloom half their beauty is lost. I have known many people give their plants a thorough rest for a month or two. During this time all the leaves were cast off, and the plants when in flower lacked half their charm. I have heard it remarked that the plants flower more freely under this treatment, but with this I cannot agree. Subjoined are a few

of the most striking kinds which certainly deserve a place in every garden.

L. AROMATICA.—This is an old plant, which appears to be deciduous, as it flowers always without its leaves. The flowers, which are produced singly, are clear golden yellow, and yield a rich aromatic odour. So free-flowering is this, that I have upon several occasions seen it bearing upwards of a hundred blooms at one time.

L. CRUENTA.—Similar to *L. aromatica*, but producing larger flowers of the same rich golden yellow hue, having in addition a deep blotch of blackish crimson at the base of the lip. The flowers, however, lack the rich perfume of the previously named plant.

L. DEPPEI.—This is a variable plant. The sepals are spreading, ground colour soft green, spotted with dark brown; the petals pure white; whilst the lip is yellow, dotted with deep red. In the variety known as *punctatissima* the flowers are larger than in the typical plant, the sepals and petals greenish white, the whole surface covered with purple dots; the lip yellow, streaked with dark purple. This variety I have only seen once, viz., in the Burford Lodge collection, where it is held in much esteem by Sir Trevor Lawrence.

L. HARRISONIÆ.—This is an old, but fine species, bearing a large plaited very dark green leaf and large fleshy flowers; the sepals and petals are creamy white; lip purple in front, yellow at the base and veined with reddish purple. Of this there are several varieties which differ only in the colour of their flowers. In *citrina* the sepals and petals are pale yellow and the lip lilac; *eburnea* has pure white sepals and petals and the lip streaked with reddish purple. There are one or two others.

L. MEASURESIANA is a truly beautiful plant, free in growth, and an abundant bloomer. The sepals are bronzy green, the petals white, profusely dotted with rich bright magenta; lip marked similar to the petals and having a white tip. There are many inferior forms of this plant; it is called by some a variety of *L. plana*.

L. SKINNERI.—As a winter-blooming Orchid this plant can scarcely be excelled; it forms a striking and conspicuous object, especially when distinct varieties stand in contrast to each other. So variable is this plant that two exactly alike can scarcely be found, unless they are plants divided from the same root. Amongst the varieties may be named *gloriosa*, *delicatissima*, *rosea purpurea*, *nigro-rubra*, *purpurata*, and many others, including the variety *alba*, which was flowered first by myself in 1857 when in charge of the fine collection gathered together by Messrs. Jackson and Son at Kingston-on-Thames. The whole flower is of the purest white, saving a tinge of yellow in the lip. A very nice figure is given of this in THE GARDEN, May 17, 1884, p. 410, along with a very good representation of the typical plant.

In addition to the above there are *L. Cob-biana*, *L. Denningiana*, *L. costata*, *L. fulvescens*, *L. lanipes*, *L. plana*, *L. gigantea*, *L. macrophylla*, *L. Schilleriana*, *L. Sneeana*, and *L. Youngiana*, all good kinds, but less showy than those described.

W. HUGH GOWER.

Orchids which do not deteriorate.—A gentleman signing himself "P." asks for a list as above. I here give him what I consider to be some of the most showy kinds which with ordinary care will live for many years; indeed, I know some of these the plants of which were under my care over thirty years ago. For the cool house: *Anguloa Clowesi*, *A. Ruckeri*, *Cypripedium insigne*, *Epidendrum vitellinum majus*, *Colax jugosus*, *Masdevallia Harryana*, *M. ignea*, *M. Shuttleworthii*, *M. Veitchii*, *Maxillaria grandiflora*, *M. venusta*, *Mesopidinium vulcanicum*, any of the *Odontoglossums*, *Oncidium macranthum*, *O. tigrinum*, *Pilumna nobilis*, *Sophranitis grandiflora*, *Ada aurantiaca*. For the E. Indian house: *Aerides crispum*, *A. odoratum majus*, *A. Fieldingi*, *Ansellia africana*, *Angraecum citratum*,

A. sesquipedale, *Cœlogyne barbata*, *C. cristata*, *Cypripedium superbiens*, *Dendrobium Ainsworthi*, *D. crassinode*, *D. nobile* and varieties, *Dendrobium filiforme*, *D. glumaceum*, *Phalenopsis grandiflora*, *P. Schilleriana*, *Saccolabium Blumei majus*, *S. guttatum*, *S. giganteum*, *S. Harrisonianum*, *Vanda Roxburghi*, *V. suavis*, *V. teres*, *V. tricolor*. For the Brazilian or intermediate house: *Cattleya aurea*, *C. gigas*, *C. labiata*, *C. Percivaliana*, *C. Trianae*, *Cymbidium eburneum*, *C. Lowianum*, *Cypripedium caudatum* and many others, *Lælia elegans*, *L. grandis tenebrosa*, *L. purpurata*, *Masdevallia tovarensis*, *Maxillaria Sanderiana*, *Miltonia spectabilis*, *M. Moreliana*, *M. Roezli*, *M. vexillaria*, *Oncidium Papilio*, *O. splendidum*, *Sobralia leucoxantha*, *S. macrantha*, *S. zantholeuca*, *Zygopetalum Mackayi*, and *Z. crinitum*. All the above kinds can be fairly established from imported pieces, they will all grow up to be very ornamental, and will continue to do so for a great number of years if ordinary and proper care be given them. The list might have been considerably lengthened had it been thought necessary. The kinds that deteriorate are becoming fewer every year, and we hope soon, when we have become more used to the conditions under which they exist naturally, to overcome the slight difficulties which at present exist.—W. H. G.

***Dendrobium Wattianum*.**—From Mr. Dorman's garden at Laurie Park, Sydenham, I have received a flower under this name. It is said to be a natural hybrid between *D. crassinode* and *D. Wardianum*, and the appearance of the flower would warrant the supposition, for it has the same short sepals and petals as *D. crassinode*, the former pure white, the latter tipped with rosy purple; lip spread open, tipped with purple, behind which is a zone of white, the base stained with rich orange-yellow, having a pair of dark maroon eye-like spots at the bottom. I am told the plant has a dense cluster of blooms.—W. H. G.

***Dendrobium Dominicanum*.**—A very fine variety of this superb old hybrid comes from the gardens of Mr. J. T. Gabriel, Palace Road, Streatham. The flower is large, having the sepals and petals heavily tipped with bright rosy purple; the lip is also broadly tipped with the same colour as the sepals and petals. Behind this is a broad zone of white, stained at the base with a large dark maroon blotch. This is the finest form of this plant I have seen.—W. H. G.

***Dendrobium chrysodiscus*.**—"M. M." sends me some flowers which resemble those of this plant. I am told it is a cross between *D. Leechianum* and *D. Findleyanum*. The sepals and petals are white, tipped with rosy purple, the lip heavily stained at the base with orange-yellow and a blotch of deep purple at the base, the tip of the front lobe rosy purple. I cannot get away from this name for your plant, although it has *D. Leechianum* for one of its parents instead of *D. Ainsworthi*.—W.

***Dendrobium splendissimum grandiflorum*.**—Flowers of this very fine hybrid reach me from the garden of the Rev. Mr. Handley, Bath. The lip is very large and nearly quite covered with the dark Indian purple blotch, but I failed to perceive much of the perfume of *D. heterocarpum* in them. Even if this is wanting it still is the very finest of the cross from which sprang *D. Ainsworthi* and *D. Leechianum*. I should much like to see the plant when in full flower.—G.

***Bletia hyacinthina alba*.**—A very charming Orchid is this variety. The type, introduced from China in 1802, bears bright rose-purple flowers, but in *alba* they are white, touched with soft lilac, the lip crested in the centre and suffused with lemon. Each spike bears about six flowers, which are of refined aspect. Both the type and the variety are worth growing well in the cool house for their winter flowers, and although the species will thrive out of doors under exceptionally favourable circumstances, it is not really hardy. At least this is my experience, but those situated in quite the southern counties may have found it quite different. It will live through ordinary winters if protected lightly. The position that suits the plant best is

a shady, sheltered bay in the rockery where the soil is peaty. In such a spot the *Trilliums* and *Cypripedium spectabile* will flower freely.—B.

ORCHIDS FROM THE DELL.

MR. BALLANTINE, gardener to Baron Schröder, sends me a fine gathering of Orchids. Amongst these is a beautiful flower of the hybrid *Cymbidium eburneo-Lowianum*, which has much the appearance of *Lowianum* and it bears a similar raceme, but the blooms are pure white, saving an intramarginal band of reddish-brown round the front lobe of the lip; these blooms are as large and stout as those of *C. Lowianum*. Also a grand variety of *Phajus Cooksoni*, having flowers as large as those of *P. Wallichii*, which accompany it. The sepals and petals are cinnamon-brown, and the funnel-shaped lip, beautifully crisped and undulated round the edge, is deep crimson, having several raised yellow lines on the disc. A grand flower of *Dendrobium superbum Burkei* is also sent. In this the whole bloom is pure white, except the base of the lip, which is stained with lemon-yellow and flushed with rose; the flower is large and handsome. A grand variety of *D. Brymerianum*, with its rich yellow flowers and its beautifully fringed lip, forms a good contrast. *Cypripedium eurandrum*, a cross between *C. barbatum* and *C. Stonei*, is also magnificent. To me this appears to be one of Mr. Seden's best hybrids, its long petals being beautifully spotted with black, whilst *C. leucorrhodum* is one of the finest crosses of the *Selenipedium* group. This has large flowers of an ivory white, the petals tipped with rosy pink, the lip rosy pink, more or less flushed with white. *Saccolabium bellinum* is represented by a very fine spike bearing eight flowers, its large lip finely fringed and its cup-like base finely spotted with bright crimson. *Masdevallias* are finely represented by *M. Armini*, with slender-stemmed, crimson-purple flowers, the sepals being each tipped with a long slender yellowish tail. Next comes a very deep-coloured form of *M. amabilis* with rosy crimson flowers. *M. Courtauldiana*, a hybrid form between *M. Shuttleworthii* and *M. rosea*, is a very much enlarged form of its first-named parent, with the colour of the latter; *M. Harryana Callenderi* is also a beautiful flower, having quite the colour of *M. Lindeni*, with the large size of *Harryana*. *M. Mooreana*, named after Mr. F. W. Moore of the Botanic Gardens in Dublin, is a large-flowered species, very much in the way of *M. gargantua*, the dorsal sepal being yellowish, having three deep purple equidistant lines running through it, and leaving the long tail-like point, clear yellowish green, the lower sepals deep vinous-purple. It is a superb flower, and this is the first time I have seen it. With these come flowers of *M. Chelsoni*, a well-known hybrid, also a fine deep-coloured form of *M. ignea*, and the most magnificent flower in the genus which we have yet seen, *M. Veitchii*, with its rich crimson-purple sepals. W. H. G.

SHORT NOTES.—ORCHIDS.

***Cattleya Trianae*.**—Mr. Howard also sends a remarkably fine form of this plant. The sepals and petals are broad, white, flushed with rose, the lip rich purplish-crimson, stained with pale yellow in the throat. I look upon this as a flower of a very good form of the typical plant. W.

***Cattleya Percivaliana*.**—As in other *Cattleyas*, there are some poor varieties of this. Out of six plants I have, two are superb varieties, only one being very poor. Blooming as it does just before the *Trianae* forms, it is most valuable. I note there have been several flowers described in THE GARDEN lately, this showing that it is getting plentiful.—A. YOUNG.

***Lælia purpurata* (W. A. G.).**—This plant I have found finish up its bulbs during the winter months, and although it requires cooler treatment at this season and much less moisture, it should be kept at the warmest end of the *Cattleya* house. I have seldom seen this plant finish up its growth

with spathe complete in the autumn. It, if strong enough, should flower. Have you not got a plant of *L. crispa* instead of *L. purpurata*?—W.

***Cymbidium eburneum*.**—From Mr. Howard, of The Grove, Teddington, comes a spike of this bearing two superb flowers. They are large and of the purest white, saving a tinge of yellow in the throat. This is a grand plant, which, since its cooler treatment, has bloomed more freely. The plant some years ago was looked down upon, but then it was always kept in the very hottest place that could be found.—H.

GARDEN FLORA.

PLATE 899.

THE STUARTIAS.

(WITH A COLOURED PLATE OF *S. PSEUDO-CAMELLIA*.*)

A SCORE years ago it was almost impossible to purchase plants of any of the *Stuartias* in any European nursery. Possibly the rage for evergreen plants had not a little to do with the disappearance of the two North American species—the only ones then known in cultivation. Fortunately, in some gardens the precious introductions of former times were not discarded to make way for the reigning fashion, and so we have perpetual object lessons before us to impress on our minds the mistakes and shortcomings of those who neglected to duly care for such truly beautiful shrubs as *Stuartia pentagyna* and *S. virginica*. Those who have not the opportunity of seeing the fine bush of the last-named species at Syon may turn to THE GARDEN, Vol. XIV. (p. 38), where they will find a coloured plate which tells its own story. (All the *Stuartias* grow slowly, particularly in a young state, and require to be fully established before they develop their full beauty. Propagation is most readily effected by means of layering.)

Five species of the genus have been described, two from North America and three from Japan. Only the two former and the subject of the accompanying coloured plate are at the present moment in cultivation in Britain, but a second Japanese species is grown in the Arnold Arboretum, Harvard University, where, however, it has not yet flowered.

STUARTIA PSEUDO-CAMELLIA was first introduced into, and flowered in, this country by Messrs. J. Veitch and Son, who exhibited fine sprays of it in full blossom a few years ago at one of the meetings of the R.H.S. According to *Garden and Forest*, however, it would appear that the species was introduced from Japan into the United States many years before its mention in any English horticultural periodical. (It was cultivated in France as early as 1868, the firm of Thibaut and Keteleer having purchased the plant from Siebold, who introduced it from Japan; some ten years later it was figured in the *Revue Horticole* under the name of *S. grandiflora*. In the United States it has been called in some establishments *S. japonica*. The foliage of *S. pseudo-Camellia* somewhat resembles that of some of the *Camellias*, and is beautiful at any time, but in some seasons the brilliant crimson and gold autumnal tints render the species most attractive, much more so than its American relatives at that period of the year. A good figure is given in a Japanese folio, the English title of which is "Figures and Descriptions of Plants in the Koishi-kawa Botanic Garden," by Keisuke Ito, 1883. The following quaint extracts are copied from that work: "The plant is found wild in Huyeizan (Yamashiro), Hasedera (Yamato), Nikko (Shimotsuke) Kurota-kisau (Omi), Komono (Ise),

* Drawn for THE GARDEN in the Coombe Wood Nursery by Miss Hamilt. n, July 26, 1892. Lithographed and printed by Guillaume Severeys.



STUARTIA PSEUDO-CAMELLIA

and also in some mountains of Kinsiu. It is a deciduous tree with alternate leaves and branches. Its height is more than a *jo*. Some are large enough to require both arms' length to embrace the trunks. The bark is of a reddish brown colour; the outer bark peels off in scales. The tender branch is of a pale green colour having reddish spots. Leaves are short-stalked, oblong, about three *sun* in length, acute, crenate and rough. . . . Flowers are five-petalled, pure white, lovely; they resemble in shape those of the Tsubacki (*Camellia japonica*), hence its name.")

S. VIRGINICA.—This differs principally from the next species in having the five styles consolidated into one. It is found in some books under the names of *Stuartia Malachodendron* and *S. marylandica*. It is probably not quite so hardy as the next named, but fine specimens exist in the gardens at Syon, Coolhurst, &c., where they appear to be quite at home. The following memo. in "Hortus Collinsonianus" shows that the plant was

have reddish or purple stamens. In works upon American botany *S. pentagyna* is described as a native of the mountains of Georgia and the Carolinas, but according to *Garden and Forest* it is nowhere very common in these States, "being confined principally to the banks of streams running eastward from the Blue Ridge. Now it appears that its real home is on the western foot-hills of the Big Smoky Mountains of Tennessee. Here this shrub literally lines the banks of all the small streams tributary to Pigeon River (which is not to be confounded with the Big Pigeon, a more important stream further north), almost to the exclusion of other plants, forming dense thickets sometimes 15 feet or more high." Loudon in 1844 writes: "The largest specimens which we have seen in England are at Dropmore and White Knights; the former are between 10 feet and 12 feet high, and form wide-spreading bushes, flowering freely every year. . . . There are a great many trees nearly equally large at White Knights, which flower magnificently every year, and make a fine appearance during the months of August and September when they are in full bloom." Are any of these trees now in existence, and if so, what are their present dimensions? Any information on these points would, I have no doubt, be of interest to many readers. In Loudon and other books *Stuartia pentagyna* figures under the following names: *Malachodendron ovatum*, *M. pentagynum*, *Stewartia Malachodendron*, and *Stuartia montana*.

GEO. NICHOLSON.

THE WEEK'S WORK.

ORCHIDS.

WE have been for a long time enjoying the rich beauty of *Cattleya Trianae* and the plentiful drooping spikes of the several varieties of *Caelogyne cristata*. This beautiful Orchid is one of the easiest to cultivate, and no garden should be without a few plants of it, even if Orchids are not a speciality. There are three well-marked varieties: 1, the original type, with white flowers and a deep yellow blotch on the labellum; 2, *C. cristata Lemoniana*, which produces its flowers a little later, the blotch on the lip a pale yellow or lemon colour; 3, *C. cristata alba* or *hololeuca*, the flowers of this variety being of a uniform pure white without any blotch on the lip. We are now getting plenty of *Dendrobiums*. The best varieties of *D. Wardianum* reign supreme. A stout spike a yard or more in length well furnished with flowers is an object of great beauty. A succession of bloom can be obtained from a dozen good plants to last from February to June. *D. nobile* still holds its own as one of the most useful of the genus; it does not get into a declining state of health, as *D. Wardianum* and too many others do; it flowers freely and the flowers are in their way very handsome. *D. crassinode*, *D. Findleyanum*, *D. Boxalli*, *D. Pierardi*, *D. heterocarpum* are useful spring-flowering species of great beauty. Every year, too, new hybrid forms are being introduced, which will in time equal if not surpass the native species. One of the earliest raised seedlings is still a popular *Dendrobe*, viz., *D. Ainsworthi*. *D. Schneiderianum* is a very beautiful variety from *D. Findleyanum* and *D. aureum*. Some very beautiful hybrids have been raised in the garden of Sir Trevor Lawrence, Bart., at Burford Lodge, and in Mr. N. C. Cookson's garden at Wylam-on-Tyne under the care of Mr. W. Murray. All these may be linked together as it were for spring treatment. It will be observed that in most cases the growth is starting from the base of the plants, and such species as *D. Wardianum* make considerable growth before the plants pass out of bloom. The experienced cultivator has his eye upon these growths, and is very watchful lest slugs or other depredators should find them out, or that they should be smothered with the foliage of other plants, when the *Dendrobes* are arranged with a base of Maiden-hair or other Ferns to set off the flowers to the best advantage, as it ought to be observed

that some of these spring-flowering *Dendrobiums* are leafless when in bloom. As soon as the plants pass out of bloom, they should be repotted or placed into fresh baskets. Some of them require repotting annually, others may go two or three years without being repotted, but they should be surface-dressed if they are not repotted. Equal parts of the best fibrous peat and freshly gathered *Sphagnum* should be used. The compost ought to be kept open by a good sprinkling of broken charcoal and potsherds mixed with the compost. The old decayed potting material should be removed as far as it can be done without injuring the roots, and if flower-pots are used, they ought to be half filled with drainage material. After repotting, the surface of the compost ought to be always in a moist state, for it is there that the roots, which push out from the base of the new growths, are to be found, and they may be injured if the compost is allowed to become at all dry. The shallow pans now so much used for Orchid culture are well adapted for some *Dendrobiums*. *Eulophia guineensis* and the variety of it, *purpurata*, may be repotted now. The variety *purpurata* has the richer coloured flowers, but the whitish rose-striped lip of the normal form is very pretty. It may be repotted with a batch of *Calanthes*, as the same potting material will answer. I do not think I alluded last week to *Laelia albidula* and *Laelia autumnalis*. These have been kept comparatively dry and in a temperature of about 50° during the winter. They may now be repotted and should be placed very near the glass roof; they require scarcely any shade. The plants of *Cypripedium caudatum* in the shady part of the *Cattleya* house are now making vigorous growth and showing their flower-spikes. I find that they succeed best when planted in good loam with a small portion of fibrous peat and *Sphagnum*, and they do best when the surface is covered with the *Sphagnum* Moss in a growing state; they require ample drainage, and the flower-pots should be filled about half-full of potsherds. I had the surface renewed by working in some fibrous loam amongst the *Sphagnum*, as it had grown rather too much. This is not the time to repot these; I think it is better to repot them when they pass out of bloom in June. *Odontoglossum citrosum*, which has also been kept dry during the winter, but in the lightest position in the *Cattleya* house we could obtain for it, is now starting into growth, and if the plants are to bloom at all, the flower-spikes come with the new growths, and it will be observed that their natural tendency is downwards; indeed the stems are much too slender to support the spikes in an upright position. All our plants are in flower-pots, but I much prefer to see them grown in teak baskets, the spikes hanging down over the sides of the baskets. I shall never forget the splendid effect of hundreds of flower-spikes hanging down from baskets in this way in the St. Albans nurseries of Messrs. Sander and Co.

All our houses have been fumigated. Green-fly is easily killed, but fumigating carefully done two or three times will also get rid of the thrips. Woodlice may not be altogether absent, and they unseen eat many of the young roots that have run in amongst the drainage. They will get underneath slices of Potatoes laid on the compost, and so may be captured. Cockroaches can be treated to beetle poison. The temperatures of the various houses may now be kept as under. The cool house should range from 50° at night to 60° by day; the *Cattleya* house 60° at night, rising to 70° by day; the East India house 65° to 75°. We grow our Mexican *Cattleyas* and *Laelias* in a house where the temperature is from 50° to 55° at night, but rising by day to 75° or 80° with the sun upon them.

J. DOUGLAS.

THE KITCHEN GARDEN.

SUCCESSIONAL PEAS.—Although the earliest Peas sown in the open have not as yet made much progress, by the time this appears in print a successional sowing should take place, or in all probability there will be a break in the supply. This is all the more likely to happen if only second earlies are sown, as these take longer to come to maturity.



Stuartia virginica.

cultivated by Peter Collinson, the friend and correspondent of Linnaeus: "*Stewartia*, an elegant flowering tree (*vide* Catesby) from Virginia, named after the surname of Lord Bute, a most knowing botanist; first raised by Mr. Gordon; he gave me this year, 1761, a fine plant for my garden, which thrives well." According to Loudon this species was first introduced into this country in 1742; it flowers from July to September, and is one of the most beautiful of all summer-flowering shrubs. The blossoms are large, and the purple filaments form a striking contrast to the white petals. In a wild state it is found along the coast regions from Virginia to Florida, and affects damp or swampy spots. Under cultivation it does well in peat and loam, or in pure loam and even in deep sandy soil, provided it has a good supply of moisture at the root.

S. PENTAGYNA.—This has less hairy leaves than *S. virginica*, and the styles instead of being united are free. The flowers, creamy white, the petals having crenulated margins, are produced in profusion during the months of July and August, and are borne singly on very short stalks in the axils of the leaves; they measure 3 inches or 4 inches in diameter, and like those of the last-named species

Not that it is advisable to sow the early rounds, the exception being William I. Such as Exonian, William Hurst, English Wonder, or others of that character should be sown. A good second early should also be sown at the same time, as in this way a close succession is obtained. As the first sowing comes through the ground keep a sharp look out for slugs and birds, which will soon destroy them if not taken well care of. Lightly dusting with soot is a good antidote against the former. For birds, wire guards must either be placed over the rows from end to end, or, failing these, three rows of black thread should be stretched over them from end to end. Hoeing whilst the surface is dry must also be attended to, this facilitating a healthy growth. Early moulting up of the rows and placing some small sticks to the Peas as soon as ready are also beneficial.

INCREASING AND PLANTING SEAKALE.—It is now time attention was turned to the planting of root cuttings of Seakale, as it matters little how early they are planted as long as the soil is in fit condition. If the roots have been taken good care of as I have advised, they will already have been made into cuttings and laid into soil in either a cool shed or frame, and will also have formed incipient buds. This makes all the difference in their starting early into growth, as if in a dormant state when planted they are much later in starting. In this latter case, and if the cuttings are not made, no time should be lost in preparing them and placing them in a gentle warmth to start them into growth.

PLANTING SEAKALE.—Select an open plot which is in a well worked and fertile state. It is also partial to decayed and burned garden refuse. If sufficient is not at hand for deeply digging into the soil it should be reserved for sprinkling along the bottom of the trench at the time of planting. Into old garden soils black with humus through years of manuring, point in a dressing of lime at the time of planting. In preparing for planting cut out a trench straight down with a spade, and in this place the sets a foot apart, the tops being just beneath the surface. The rows should be 2 feet apart. Seakale being partial to salt, a slight sprinkling should be given after it has been well started into growth, and another three weeks later. This with a hoeing after the top growth is fairly visible will do a deal of good.

EARLY CARROTS.—Where Carrots are looked for as soon as possible, the earliest will now be growing freely in hotbeds formed early in the year. To keep up a close succession of young and tender roots another bed must now be formed. In some gardens the earliest sowings will now be taking place, but by sowing on warm borders it must not be thought that quite as early roots can be secured as under the protection of glass, which must be resorted to if earliness is desired. A gentle hotbed formed with a depth of fermenting material of 2 feet is ample, this being surfaced with 5 inches or 6 inches of sandy soil, sowing the seeds thinly in shallow drills. By keeping the soil freshened up with tepid water the seedlings will not be long in appearing, and with free ventilation good early roots will be forthcoming. Early Carrots may also be forwarded by covering a space on a warm south border with either a ground vinery, low frame, or even a spare light or two resting on a tier or two of bricks, the precaution being taken to fill in or provide a depth of sandy and fertile soil for them to grow in, as in this the roots soon come to a usable size. Failing lights or any glass covering, a slight hotbed, and this surfaced with soil, will bring them on quicker than depending upon those raised without this aid. A mat or two or dressed canvas laid across the top and resting on supports will keep all secure until the seedlings appear, when the covering would be only needed on cold nights.

SOWING CARROTS ON WARM BORDERS.—Whether this can be done by the time this appears in print will depend upon the state of the weather. During early and favourable springs sowings may well take place at any time after the 1st of March. If the soil is not as desired, it is an easy matter to spread over it a layer of sifted old potting soil or burned

garden refuse with a little leaf soil if any should be at hand. The Early Horn varieties should be sown now, Early Nantes or any other good selection of stump-rooted being also excellent for sowing in connection with them.

EARLY TURNIPS.—As it has now become the recognised practice to forward the earliest Turnips by gentle forcing and also a later lot by merely affording protection with a cold frame, sowing in the open need not take place so early. Very early sowings, as a rule, in the open must be looked upon as very doubtful. If no provision has been already made for sowing under glass and Turnips are expected early, the wisest course is not to rely exclusively upon an open-air sowing, but if possible to devote a spare light or two to forward a portion of the crop, as with this aid there is no fear of the seedlings bolting instead of bulbing, as they are very apt to if an unfavourable time should ensue when sown in the open. The soil should be rich and friable both for sowing under glass, for forcing, or for the first sowings in the open air. Early Milan is the best variety. A fairly moist soil and the protection of lights with free ventilation upon all favourable occasions until the lights can be removed altogether will produce an early supply of useful bulbs. The sowing in the open air should not be a large one. Rather make successive sowings every ten days. The sowing for the earliest should be on a warm site and the other on an east border.

A. YOUNG.

PLANT HOUSES.

GREENHOUSE POTTING.—**PELARGONIUMS.**—Those plants that are intended to flower the earliest (without any hard forcing) should be now without delay shifted into their blooming pots, if this work be not already done. For very early forcing, any shift now given will not be in time to reap good results. The later batches for May and June should also be potted as soon as possible, leaving the fancy varieties a little longer if they be not yet showing much symptoms of active growth. These latter are rather more tender than the regal and show varieties, and compared with them do not require quite so much pot room. It is assumed that the plants in each case were shaken out and reduced at the roots after going through the resting and ripening process of the past season. If not, they will already be in pots quite large enough, except in the case of small plants, which may be potted on; but the others should only have a top-dressing. The best results are, however, attained by reducing in the autumn and potting on again in the spring. In no case should a large shift be given, into the next size of pot being ample for decorative plants. Large shifts only encourage a prolonged leaf-growth at the expense of bloom.

If good soil in the form of fibrous loam and leaf-mould is obtainable, I would not advise the use of artificial manures with the potting mixture; these will serve a good purpose when the soil is indifferent, but at other times it is a waste so to use them. For my own part, I would only add to the loam and leaf-mould some spent Mushroom-bed manure; this assists in keeping the soil open, particularly in the case of the fancy section. Failing this manure, I would use for these latter a little peat. The potting need not be done in too very firm a manner, as compared with plants that are to remain permanently in their pots. A potting stick, it is true, will be useful, but it need not, all the same, be used in a severe manner. Those plants that are bushy from amongst the early batch will not need stopping; these will then flower all the sooner, but others should be pinched in the course of a week or two, whilst the mid-season and late stock should be left for a time, or, if needful, have two stoppings instead of one. A deal may be done, by simply paying due attention to pinching the shoots, in prolonging the flowering season. Neglect it, and there will be a glut of flower, causing the season to be a shorter one, with more crowding whilst in bloom. Unless the houses be so constructed as to bring the plants

near to the glass in the usual way, there is nothing to surpass shelves for these Pelargoniums. I am myself partial to the shelves, as they afford a free circulation of air all around the plants. Caution for some few weeks will be necessary in respect to watering; if over-watered, the foliage will assume a sickly hue, from which it is not an easy matter afterwards to effect restoration to health.

FUCHSIAS.—Now is a very good time to shake out and reduce the balls of old plants, repotting them at least into one size smaller pot or two if possible. The plants if dust-dry at the roots should have a soaking in tepid water before being repotted. This will be found a deal better than giving much water immediately after potting, being better for the plants and better for the soil too. The same soil as that recommended for the Pelargoniums will suit very well, save that rather more of the old Mushroom bed manure may be safely added. I have found that Fuchsias are very partial to this. Do not be afraid to use the knife freely in pruning; a few shoots the less, but these all the stronger, will give better results. Where there is the possibility of training plants upon the roof so as to overhang the pathway in any house, a most beautiful effect is produced. Plants suitable for this purpose should be chosen and pruned accordingly. Again, where there is room for Fuchsias as basket plants, as in fairly lofty conservatories or greenhouses, they can thus be turned to good account, those of pendulous growth being chosen in both cases. Cuttings should also be put in at once or as soon as they are fit. Plants started earlier are the best for taking stock, but otherwise early starting is not advisable in a regular way, as it causes too much crowding for a time before there is space for the plants to have justice done them. For the first weeks after potting, a Peach house or a vinery recently started will be good places for them, the moisture from the syringing being almost sufficient for a time.

BOUVARDIAS.—The old plants of these should be shaken out as in the case of Fuchsias, being then potted into smaller pots where it is intended to treat them on the planted-out system later on. If so be the roots are in good condition and the plants are then to be kept in pots, then reduce sufficiently in the case of large plants for them to go back into the same size of pot. If cuttings are short, the roots in either case will answer for propagation in their stead. Some at least of these can be had without much trouble or distress to the plants; those that have been grown for a season in pots will supply the best roots for this purpose. The same position as that given the Fuchsias will for a time be needful, or they will bear a little more warmth with safety. Previous to potting the pruning should be attended to, following on the same lines as for bush plants of Fuchsias. The Bouvardias are at times liable to attacks of brown scale. Immediately the pruning is done any plants infested with this insect should have a thorough cleansing. If the mealy bug is the trouble instead of the scale, it may be made warm for this pest by syringing with hot water whilst the plants are destitute of young and tender foliage, not otherwise.

JAMES HUDSON.

HARDY FRUITS.

PEACHES AND NECTARINES.—A long spell of dull muggy weather has forwarded the fruit buds on these considerably, but there is such an abundance of them that the loss of some during the operation of pruning and nailing will not greatly signify. Leaving the young wood as long as possible to swing clear of the walls has retarded bud-movement considerably, but the trees ought not any longer to be left as they are. If the old bearing wood was freely cut out when the trees were loosened, not much pruning remains to be done, it being unwise to prune so hard as in the case of indoor trees. The first proceeding should be to shorten back some of the more straggling, and also long, nearly naked branches to well-placed inner growths, neglecting to thus foreshorten being the frequent cause of trees being badly furnished with bearing

wood other than at the extremities. Next cut out all old bearing wood that can be spared, its place being taken by ripened young shoots now well set with fruit buds. Nor should the latter be too freely reserved, as they ought to be trained not less than 4 inches apart. There will now be no difficulty in deciding which are the fruit and which the wood buds, and all small shoots with a wood bud at the point only should be saved to their full length. Those about the size of slate pencils at their thickest end should, where this can be done safely, be shortened to a length of about 12 inches, cutting always to a wood bud, and which is usually found in the centre of triple buds. Those nearer the size of a lead pencil should be left to a length of from 18 inches to 2 feet, though, as a rule, the fewer of these there are on a tree the better. The plan of reserving fruiting wood principally on the upper side of the branches is a good one, as it much simplifies the work of training. All young shoots that set out straight from the trees ought always to be cut cleanly off.

YOUNG TREES—Maidens planted just as received from the nurseries should be cut back to below where they have branched, or say to within 5 inches of the union of scion with the stock. Four, and sometimes six, well-placed young shoots can usually be laid in from hard pruned maidens, and these being cut back to about half their length at the winter pruning following, enough leading growths will then be obtained to form the foundation of a good fan-shaped tree. Trained trees recently planted are mostly furnished with eight or ten strong young shoots, and none too well ripened. If these are hard pruned the growth obtained during the summer may prove too gross to be either productive or suitable for laying the foundation of a lasting tree. Leave them, therefore, at about the same length as advised in the case of the different sizes of fruiting shoots on older trees, bearing in mind that hard pruning is only desirable in the instance of weakly growths that require strengthening.

TRAINING in all cases should be done with the greatest care, especial pains being taken not to bruise or damage the bark with either the hammer, shreds, or ties, gumming and consequent loss of branch often resulting from carelessness on the part of those training the trees. Any old shreds that unduly confine the bark, or nails that press against the latter, should always be removed. After the main branches have been disposed thinly and evenly all over the space to be filled, lay in the smaller and fruiting wood between them and, as before advised, avoid crowding.

PROTECTING FRUIT BLOSSOM.—Fruit buds on all kinds of fruit trees are both abundant and strong. All that is wanted, therefore, is a favourable flowering time, and then if there are no severe late frosts, exceptionally heavy crops should be had. Unfortunately, there is little likelihood of the weather being favourable, and all who would feel more certain about having crops must take the precaution of protecting as many trees as possible while in flower. Apricots in particular ought to be well protected, and if glazed copings and blinds cannot be afforded these, the least that can be done is to affix board copings and blinds of some kind. Failing blinds, then ought fish-nets to be hung slackly over them, two or even three thicknesses being desirable. These must be kept well clear of the trees by means of long poles 5 feet or so apart, let into the ground 2 feet clear of the wall and reaching well up to the coping. Branches of flat-growing Firs fastened securely to poles over the trees are the last alternative, and certainly better than nothing at all. Plums will be in flower nearly or quite as soon as Apricots, and these again pay well for protection. They ought to have either blinds or fish-netting hung over them, the former as a matter of course being so fixed as to be readily run over or off the trees. Peaches and Nectarines are harder than either of the foregoing, but, all the same, should be protected. In most instances slackly-hung doubled fish-nets and poles are all the protection they get, but it pays well to afford more effective coverings than these. Either frigi domo, cotton or canvas blinds should be

furnished with rings to run on rods fastened to board copings and stout wires strained to posts 2 feet or more from the wall, or else they may be made in greater widths and run up and down on rollers. It requires no great amount of ingenuity to devise a perfect method of covering with blinds so as to absolutely defy the most severe spring frosts. Later on these blinds will be found of the greatest service in warding off cold easterly winds, and not unfrequently are more valued for this purpose than for the protection they afford from frosts. It should be remembered that they must be very securely fastened, strong winds being liable to dash them about unless well tied down. Dessert Cherries sometimes suffer badly from spring frosts, and if possible should be protected. Pears are not often protected, but they fully merit better treatment. Already the buds are very forward, and if either fish-nets or blinds can be spared, some of the most valuable Pears, notably Jargonelle, Beurré d'Amanlis, Pitmaston Duchess, Doyenné Boussoch, Doyenné du Comice, Marie Louise, Glou Morceau, Easter Beurré, Josephine de Malines, and Beurré Rance, should be covered at once. Severe frosts will, and often do, greatly injure the buds without destroying them outright, and that is why the advice is given to protect early.

W. IGGULDEN.

ORCHARD AND FRUIT GARDEN.

PRUNING MAIDEN APPLE TREES.

WHERE strict economy is the order of the day, double the number of maiden trees can be bought for the same money as is needed for established trees. The great point about growing these maiden Apple trees is that of a proper method of pruning them the first season after planting. Mistakes are continually being made in this respect when laying the foundation for the future tree, no matter what form it is to assume. Many fruit tree growers for sale follow a wrong principle in the first pruning of the trees. Instead of confining their efforts to the proper formation of the future tree, they allow it to grow into the largest size available in the shortest period. This method may suit their individual purpose, but the form is important to the possessor of the future trees, and little considered by the vendor. From my experience in a truly rural district, I find that the idea amongst the cottage population especially is that if they procure apparently a large tree, which is only so in height and at a small outlay, they have obtained not only a good bargain, but all that is desirable; whereas if they had bought at double the cost trees of less height, but with a perfect foundation as to a sufficient number of branches, they would have been gainers in the end. Even amongst that class of cultivators who are supposed to possess a good knowledge of fruit culture the subject of pruning maiden trees is not too well understood.

Maiden trees vary in height and strength according to the habit of each variety, as Lane's Prince Albert at 2 feet high would be counted equally good with Lord Grosvenor at 3 feet, and others more robust 1 foot higher. Like all other fruit trees, maidens are best planted as early in November as possible. When maiden trees are planted in their permanent position, they need perhaps more careful pruning at the roots than any other form of tree. The object is to dispense with any possible tap root, that would, if unmolested, work its way deeply into the soil in a perpendicular direction. The main roots of the maiden trees should be cut at planting time to within 6 inches of their base. I endeavour to keep all the roots as near to the surface as possible, especially where the soil is heavy and retentive. Maiden trees planted in the autumn I like to prune during the first half of February, provided, of course, the weather is favourable. If the operation is left much longer than the time

named and the sap is on the move, the base eyes do not push into growth so freely nor so regularly.

In forming standards, or what are known as half-standards, a different plan must be followed. Circumstances, too, have to be considered as to the requirements of such trees and the position they are to occupy. If the situation is fully sheltered and other fruit trees are to be grown under the Apples, or if the base is Grass, then full-sized standards are the best. The stems of these should range from 6 feet to 7 feet, according to the variety. The minimum length of stem will suffice for those of erect habit, like Alfriston, for instance; while others that are more drooping in character, Ecklinville for example, should have the full length of stem. These heights include that portion of the Crab stock which is left above ground, in some cases from 9 inches to 1 foot. In the case where Apples only are to be grown, with perhaps one bush tree in between, or perhaps vegetables, or where the situation is somewhat exposed, what are known as half-standards are the most serviceable; these should have a clean stem of 4 feet from the ground-line. Such varieties as Cox's Orange Pippin and Worcester Pearmain succeed admirably under this method of training. When the desired height is reached, remove the extreme point of growth to induce side shoots to form to lay the foundation of the future head of, say, from three to five branches to commence. If these are cut back to within 4 inches of the base the following year, a perfect head will in time be had.

Apple trees grown in bush form are perhaps the most generally employed, whether it be for a few trees in the kitchen or fruit garden, or on a large scale for market use. Properly trained and well-cultivated bushes produce the best results, both in point of quantity and general good quality, and they are not so likely to suffer from strong wind, where the position is at all exposed, as standard trees. It is in this form of tree that so many mistakes are made in the initial pruning. The great fault in laying the foundation of the future bush is allowing too much length of shoot to remain when pruning the maiden tree. I have before me several examples of trees that were wrongly pruned as maidens. The true bush is one that has its branches coming from the main stem within a few inches of the ground, just sufficient to show the tree with a clean leg or stem. The examples previously alluded to are Lord Grosvenor and Bramley's Seedling. The former was cut to within 2 feet 3 inches of the graft, the result of the season's growth being three shoots within 10 inches of the apex, thus leaving 17 inches of stem, with but a few fruit buds pushing from the eyes. In the case of the second-named example, a length of 2 feet 6 inches of stem was left at pruning time. The result is two shoots at the extreme end, with a few smaller growths below and a bare stem of 17 inches from the junction to the lowest small shoots. Other examples cut at 16 inches from the graft exhibit better results, having two to four vigorous shoots, but with the lower eyes still dormant. Lane's Prince Albert exhibits a still further instance. In one case a length of shoot 2 feet 3 inches was left, the result being two shoots at the apex 9 inches long, with a few buds and smaller shoots below. The proper way to prune maidens to obtain desirable bushes should be to cut to a certain length, so as to induce the desired number of shoots to grow to furnish a proper foundation. The length of shoot to be left varies somewhat, according to the manner of growth of each sort. For instance, trees of vigorous habit should be cut lower than others less strong. As a further illustration, Bramley's Seedling was pruned to within 8 inches of the base; the result is five stout shoots, which have been cut to within 15 inches of where pruned last year. Another season a greater length of shoot will possibly be left. Lane's Prince Albert was allowed 10 inches of shoot; in this case five shoots resulted, which are quite enough to lay the foundation of the future bush. When the trees in question are four years old, they will be furnished with ten or twelve main branches. The filling-in of the smaller branches will be easily

accomplished; thus well-balanced trees, which not only give the cultivator more fruit, but are a greater credit to him than the "lanky" specimens before alluded to, are obtained.

Espalier-grown trees require hard pruning at first to give them the necessary shape. If the lower branches were from 1 foot to 2 feet from the ground, valuable space would be lost; besides, the tree would not be shapely. In pruning maiden trees for espaliers, the aim should be to get one pair of branches and a leader the first year. To secure this object, cut the upright shoot to within 6 inches of the junction. By following up this practice the next year, branches are then obtained evenly on both sides of the leader, which gives the necessary shape. Perhaps no form of training needs such a rigid adherence to hard pruning of the maiden tree as the espalier, which is an interesting as well as a profitable method of cultivating Apple trees.

The cordon plan of growing Apple trees is now much in favour, and rightly so, as where trees of this form can be grown there need be no bare places on the walls. In the case of planting new trees of any kind to remain, several years are needed before the wall space is covered; here, then, is a capital chance to plant a few single cordon Apple trees. Again, they may be utilised by the side of a path, trained in an upright form and arched over. Wherever employed they will be found profitable. Much of the finest fruit comes from cordons, owing to the quantity of fruit on each tree being restricted. In pruning for the first time the variety must be considered; some will endure a greater length of stem being left than others. Some varieties are better adapted for this form of culture than others, owing to their readiness to produce side shoots. The Queen, Ecklinville, Cox's Orange and Blenheim Orange are examples of free growth in this respect. Such as those quoted may be cut to within 2 feet of the graft with a good promise of success. Strong-growing kinds about which there is a doubt of their breaking regularly into growth should be cut to within 1 foot of the base. A greater length may be left the second year if the object be to cover the allotted space quickly, as by that time the tree will be better established and consequently in a better condition to send out shoots more numerously.

Pyramids require hard pruning in the first stage to lay a good foundation for the future tree; indeed, it is a mistake to allow the leader to advance rapidly at any time. E. MOLYNEUX.

Strawberry Vicomtesse Hericart de Thury.—I see mention has been made a good deal of late anent the merits of this Strawberry for early forcing. I have seen splendid fruits of it in February and March at Heckfield during the late Mr. Wildsmith's time. This was his favourite sort, and he was no mean judge of a good Strawberry, having tried many sorts. Perhaps some of the best examples of forced Strawberries during the months named could be seen there, which is a sufficient proof of the value of any particular variety. —E. M.

Late-kept Grape Gros Colman.—Some years ago Mr. S. Castle sent me a few berries of Gros Colman Grape as late as March to prove how greatly the quality was improved by being kept later than the bulk of this variety is usually eaten. Those berries fully bore out all Mr. Castle maintained, the quality being remarkably good. Recently I packed the last bunches of Gros Colman we had left, and was agreeably surprised at the quality of some of the berries I tasted. The objectionable Ivy-like flavour that is only too apparent during the earlier part of the season had quite disappeared, and a richness coupled with a very pleasing flavour had developed. They certainly were not so solid as Lady Downe's grown and kept alongside, but there was no mistaking the superiority of Gros Colman for the time being. Unfortunately, keeping the latter much after mid-winter entails a considerable amount of waste. It

is not naturally a very late keeping variety in fact; whereas with Lady Downe's there is very little waste, especially if the thinning out of berries has been fairly severe at the outset. A free use of fire heat during the ripening period somewhat militates against perfect colouring of Gros Colman, but is necessary if long keeping is attempted, some of the bunches with reddish black berries which ripened immediately over the hot-water pipes keeping better than others more nearly black in colour, and which did not get quite so much heat.—W. I.

Sand for Muscat Grapes.—It is surprising how the roots of Muscat Vines revel in a dressing of sand when laid on the surface after the loose soil has been scraped off. The sharper or more gritty it is the better. A dressing half an inch thick spread over the border next to the roots is not too much, covering this with some partly decayed turf and wood ashes mixed. Of course, it will be understood that I am dealing with Vines that are planted in a border, the soil of which is of a stiff, retentive nature, rather than light and sandy naturally.—E. M.

RETARDING PEACH AND NECTARINE BLOOM.

I AM adverse to coddling the bloom of the above trees, as, from close observation, too much shelter is as injurious as none at all. Even far north, covering up, especially early covering, may be carried too far, so that there are much loss of time and considerable vexation when failures occur, let alone the dirty state the trees get into owing to green-fly and loss of vigour by the leaves dropping or curling. I believe in keeping the trees exposed as long as possible before protecting. There is considerable gain by retarding Peach and Nectarine trees, both as regards time and the chances of a crop. Much good is done by timely removal of the young shoots or branches from the walls as soon as the leaves fall, as this hardens the wood and makes it bloom much later than when left against the wall till pruned. It also destroys such pests as green-fly, and the old nail holes will be drenched by rains and cleaned. I am well aware the severest cold does not kill some insects, but if the trees are removed there is no difficulty in eradicating them by applying a strong insecticide. There will be little pruning if due attention has been paid to thinning out the growth as soon as the fruit was gathered. This last is an important operation, and though it may be thought out of place in a note on protection, it will be clear that it is most beneficial in preparing the new wood to withstand our severe winters, rendering it firmer and better ripened. When these trees are in a crowded state they are never satisfactory. The fruit is small and the trees soon get dirty. By summer pinching and pruning, canker is also less troublesome. These trees often suffer from want of moisture, especially on light gravelly soil. With due extension of branches and a thorough ripening of wood, there is less need of early protection. Objection may be made to unnailling of the shoots or branches, thinking it would cause injury by the shoots blowing about, but such is not the case, as it is only the young growth that is unnailed, and if this growth has been properly prepared by thinning and exposure it will be sufficiently strong to withstand frost. When the trees or shoots are detached from the wall in the autumn, cleansing, if necessary, should be attended to and little more need be done till the pruning in the early part of the year. I make it a practice to leave the shoots as late as possible before renailling. This may be done much later than is often practised provided it is carried out carefully. Of course, with the blooms ready to burst careful handling is important, but if a few blooms are lost there are others in close proximity to take their place. As previously noted, the longer the opening of the blooms is retarded the more certain the crop. I have seen the blooms, after the nailing, covered from strong sunshine by tiffany with excellent results, but this latter is not always practicable; on the other hand, equally good results

have been obtained without covering of any kind, thus showing if the trees are in a favourable position, the wood well ripened, and the blooming period retarded as much as possible, there are fewer failures and in the end less trouble. Those with a long stretch of Peach wall cannot often afford rollers or blinds and have to make various shifts. A season or two ago I noticed Mr. Hudson, Gunnersbury House, adopted a simple, very neat, and efficacious means of protection by using stout Bamboo poles placed against the wall securely, covering with double fish nets. The Bamboos being smooth there is no injury to the tiffany or nets; the covering always looks neat, is soon erected or removed, and does not blow against the trees, the canes being placed rather close together. I have adopted this plan with excellent results. Of course, in very exposed positions a thicker material than double net would be necessary, but even then this protection should not be given till the last moment. I have more faith in a good coping than in a thick outside protection; I do not advise a permanent glass coping. Once I had a long Peach wall to manage with a thick ground glass 2 feet wide coping, which it was impossible to remove. There was also a poor supply of water and labour to apply the latter, the result being a full crop of spider and poor fruit. A movable wooden coping is excellent, as this preserves the bloom from excessive rains or hail. When only light covering is given to the blooms this may be allowed to remain a little longer after the fruit has set to protect the foliage, as often when a thick covering is used and removed all at once it acts injuriously both on the tender fruit and foliage. Whatever is used to protect should be light enough to admit air and light.—G. WYTHES.

—I have long been of the opinion that the supposed advantages of deferring the pruning and fixing to the walls of the shoots of Peach and Nectarine trees growing against open walls are more fanciful than real. It has become the practice now-a-days for some people to advocate the untying of the trees, or rather shoots, from the walls during the early part of the winter and to fix them away until, as they say, the buds show colour, and then re-fasten them without delay. And to further delay the ordinary pruning and nailing or tying in until the buds show colour is certainly not a very wise proceeding, especially if there are several trees to manage. Most gardeners who have a large garden to manage with a reduced labour staff know what this means. It is all very well if there are only two or three trees to attend to, but if I were to wait until the buds show colour and commence at one end of the wall, the trees at the other end would be in bloom before finished. Where there is a difference it is more in the variety than in the time of fixing to the wall. If I could spare the labour I would take each tree from the wall, prune and wash it, afterwards fixing it to the wall when finished. I used to do so when labour was more plentiful than at the present time, but even then with a quantity of trees the work was very great. I am now (the second week in February) fastening the shoots as fast as labour can be spared for the purpose, and I have not the least fear that it will so hasten the unfolding of the buds as to jeopardise the crop or affect in the least the setting of the flowers. At any time during February when the weather is mild the pruning, tying, or nailing to the wall should be proceeded with as opportunity offers, and the sooner the better.—Y. A. H.

Vines in narrow borders.—Some of the best of Grapes have been obtained from Vines the roots of which were confined to exceptionally narrow borders. Many span-roofed houses, built purposely for the growth of Cucumbers, Melons or plants, having a path down the centre, with a bed on each side, enclosed by a brick wall, the width of each bed not being more than 4 feet at the most, have often been turned into vineries. Being limited both in the growth of the rods and roots alike, the Vines in such houses do not last many years in the best condition it is true, yet they

serve their purpose very often really well. In houses of such limited roof-space, such varieties as Gros Guillaume, Trebbiano, and the White Tokay are not the most desirable sorts to plant. These as a rule require more head-room than can well be afforded in the limited space at command. Varieties like Alicante, Muscat of Alexandria, Gros Maroc, Madresfield Court and Lady Downe's are the most suitable for such narrow houses. In houses of limited area, as in this case, the Vine borders require more attention as to watering. Greater quantities of stimulating food, such as repeated surface-dressings of some fertiliser, bone-meal, nitrate of soda, or cow manure laid on the border, watering it in, are also necessary. Liquid made from animal manures it is difficult to find a good substitute for.—E. M.

Peach Alexander.—In regard to the above, my experience is just the same as Mr. Crump's so far as regards bud-dropping. Last autumn I rooted out of the late Peach house two fine trees of Alexander, as they were quite worthless. These two trees dropped all their best buds, and although the wood was well ripened it was of no value. They had been growing with their roots inside in the best of soil, and in company with one tree of Grosse Mignonne. The two trees of Alexander only carried a thin crop of fruit, while Grosse Mignonne had a splendid crop of the finest fruit (and was ripe at the same date as Alexander) I have not found that Alexander or any other Peach, started at the end of November or first week in December, could be had ripe twenty-eight days before Royal George or Grosse Mignonne. I have grown all these so-called early Peaches, and have found that in regard to very early forcing they are not equal to the old sorts. Let them come on later in the season. They are a little earlier than Royal George, Grosse Mignonne, and the ilk, but for early forcing year after year they cannot beat the old sorts. I have had fruit of the Royal George and Grosse Mignonne ripe in the last week in April, and by their side Early Beatrice, Early Louise, Early York, and Hale's Early, and soon found out they were as regards early forcing nothing equal as regards crop and flavour to Royal George, Grosse Mignonne, and Noblesse. I have always found the large flowering Peaches and Nectarines unequal to the strain of early forcing as compared with the small flowering section.—W. C. LEACH, *Albury Park Gardens, Guildford.*

THE PEACH WALL AT FARNHAM CASTLE.

A VERY massive stone wall some 14 feet in height, very neatly faced, and of a semi-circular form is that on which Peaches and Nectarines are successfully grown at Farnham Castle. Some of the trees are very large and robust. Perhaps it is to some extent due to the unusual height of the wall, which admits of free extension, but trees 14 feet in height and some 16 feet across fully covering the stated area are not met with every day. But after all the remarkable fact concerning these Peach trees is that literally they have no border. It is true at the base of the wall is a strip of soil 12 inches wide, but no one will call that a Peach border. Then comes a strip of 10 inches of turf, then a gravel foot-path 7 feet wide, and beyond that a sloping lawn. Probably no living gardener if he were about to plant a Peach wall would do so with such border conditions. No one would for a moment look for any good result in such case, and yet there is to be seen ample evidence of the capacity of Peach trees to thrive well under conditions that are regarded as next to impossible in modern gardening. When at Farnham, as must happen everywhere under any conditions, it is needful to remove some old tree and replace it by a fresh one, a large portion of the general path has to be removed, a hole made and provided with fresh soil, the new tree planted, and the gravel and turf margin replaced. As to mulching, that is entirely out of the question. Now as Peaches thrive so well under these assumed adverse conditions, the question naturally

arises. Does the modern system of preparing rich deep borders, giving considerable dressings of animal and artificial manures, and generally annual mulchings prove to be the best methods of securing good trees, sound sturdy wood, and abundant crops? The wall at Farnham Castle now devoted to Peaches or other stone fruits seems to have been so utilised from time immemorial. There is on the wall some trees that are probably the very oldest in the kingdom. A Breda Apricot, with an enormous stem, has, perhaps, been there 100 years. A Green Gage Plum has a stem, or rather a congerie of split, twisted, and odd-looking stems, 2 feet across, that have in the course of time broken from one original stem, and the tree, that still carries good crops of fruit, can hardly be less than 150 years old. That it was originally worked is evident, as a stout shoot from the stock, broken up from the base, is kept in check every year. The site is at once a warm and sheltered one, but very near in front rises the massive keep or round tower, the base of which covers nearly an acre of ground. This rises to a height of some 50 feet, and naturally excludes a good deal of sunshine. Perhaps the ordinary soil is good, but there is no evidence that it is exceptionally so. No doubt it is naturally well drained, but let the weather be ever so dry, it is very obvious that with a broad gravel walk and a sharp slope of turf over the roots, watering the Peach trees can hardly be performed. The fact that the trees do so well shows that to all recognised rules of culture there are some and very strikingly successful exceptions.

A. D.

An Apple wanted.—Can any of your horticultural correspondents help me to obtain a tree of an Apple called Maclean's Favourite? The nurserymen (I have inquired of a good many) tell me that they have never heard of the Apple.—J. F. CROFT.

Seasonable notes on outdoor Peaches.—The trees on walls in all aspects are in a much more forward state than they were last year at this date. It was quite the end of the first week of March before I commenced to tie the branches to the wires. This year the trees were in such a state of advancement by the middle of February that I then began the same work. One would have thought that the sharp wintry weather experienced for a whole month at the end of December and the greater part of January would have checked the rise of the sap. The trees, too, were loosened from the wires as usual in the autumn. More care in covering them while in bloom will be necessary. As the pruning of the trees was carried out after the fruit was gathered in nearly all cases, but little of that is needed at the present time. I cannot understand how it is that this necessary detail is postponed too often until this season of the year, instead of removing superfluous shoots in the autumn. A thorough washing of the trees and wall with strong soap-suds by the aid of the garden engine will cleanse the trees and walls of most insect pests. There is all the difference possible in the appearance of trees neatly and systematically trained as compared with those that are simply tacked to the wall in any form. Where beginners in training Peach trees err is in not properly securing first the main branches all over the tree to the wall, and also by the crooked manner they lay in the shoots of last season's growth. The base of the latter should be quite straight from the junction whence they start. The distance from the main branch that the point of each shall be depends very much upon the length of the shoots and the space to fill. Where trees are strong and healthy good-sized wood will be annually produced even if the trees carry a full crop of fruit. A space of 4 inches is not too much to allow between the growths of the previous year, but it very often happens, not through choice, that half that distance can only be allowed in certain parts of the trees. Beginners in Peach-tree training are apt to make the branches too fast. If any roots are bare on the surface cover them with turfy loam and wood-ashes, but I do not believe in the practice of mulching the borders just yet with manure. Neither do

I favour the breaking up of the surface-soil by forking it over. The more solid the ground is about the trees the less likelihood is there of soft sappy growth the next season.—E. M.

Training young Peach trees.—I have about a dozen young Peach trees against a wall. They have been planted a little over twelve months. Could you give me any information respecting the most essential points to establish a good foundation to the above trees?—A. H.

*** If the young Peach trees have been fairly well attended to last season, each would now be furnished with several lateral shoots, but I suspect from the query of "A. H." that the growth of his trees is not well balanced. The most essential point with young Peach trees so as to ensure a good foundation is to check any strong growths which are in the centre of the tree and which if allowed to proceed unchecked would weaken the lower branches. If the trees really have any of these strong shoots, shorten them well back at once with a sharp knife, leaving the weaker shoots. If not already done, well spread the branches out in the form of an open fan, bringing the lower tier of branches down to almost a horizontal position, the remainder being equally spread out, keeping the centre well open. The centre of the tree will become furnished in due course. Keep a sharp look out for insect pests, giving the trees a good washing now with either Gishurst or a decoction of Quassia chips and soft soap. One pound of each placed in an old boiler and boiled for ten minutes will be sufficient when strained to make 10 or 12 gallons. It is of the greatest importance that the first shoots are not allowed to become crippled through the attacks of insects, and as prevention is the best course to pursue, give them a good syringing every three or four weeks after growth takes place. The main shoots as they grow; and which will eventually form the framework of the tree, must be kept straight. If there are any of these shoots taking too strong a lead to the disadvantage of the others, pinch out the points, when the resulting growth will not be so strong. Train in as many lateral shoots as there is room for without overcrowding. Pinching out all lateral shoots as they form from the main shoots causes these to become too gross, and eventually they might succumb to gumming. If the wall is well exposed to the sun, adopt what I may term the semi-extension system of growth. "A. H." will no doubt perceive that the most essential point is to check over-luxuriant shoots, so as to throw more strength into the weaker ones. By following the above course and keeping the shoots trained thinly, also waging war against insect pests, well-furnished trees will be formed in due time.—Y. A. H.

The Gooseberry caterpillar.—"R. D." at page 84, Feb. 4, gives a timely article on the above, but, although he has various remedies to hand, I do not think they are of a high standard. Practically, hand-picking, for instance, is out of the question at such a time; dusting the foliage with lime, soot, sulphur, or hellebore is both dirty and ineffectual, unless fairly well smothered—certainly more than 1 lb. to fifty trees. The remedy I have used for several years with complete success is this: As soon as the Gooseberries are set, I get 1 lb. of hellebore powder (for which I have never paid more than 1s. 3d.), place it in one gallon of boiling water, well stir it and strain it through very fine muslin—if double, all the better. Then put it into 15 gallons of clear water. Get some one to hold the foliage up on one side of the tree, while another plies the solution to the underside of the leaves through a syringe. One syringeful to each side of the tree is sufficient. A second application may be necessary the first year, but an annual dose will be found to be ample ever after. Be careful to do it in fine weather. This will not need any washing off, nor will it have that forbidding appearance seen when the hellebore powder is dusted on. Has any reader of THE GARDEN tried this remedy?—H. W.

— I have long regarded hellebore as the cure for this. Perhaps "R. D." has never had occasion to use it, or he would hardly remark that the use

of it is rather expensive. It is now more than twelve years since first I used it, and it proved most effectual. I then paid 1s. 4d. for a pound, and having occasion to use it again last season in a quite different part of the country, I found the price exactly the same. A pound of this powder carefully distributed will go a very long way, and even the market growers could hardly afford to neglect the use of so good a remedy when it means the saving of a crop. Last year half a pound sufficed to rid my bushes of the pest. I have never had to wash the berries, because rain has generally intervened between the application of the powder and the gathering of the fruit; in fact, the pest has appeared long before the fruit was fit, and consequently it was cleansed. However, it is well to bear in mind the necessity of this precaution and observe it when an attack is coincident with the fitness of the fruit for gathering.—A. H.

FLOWER GARDEN.

TUFTED PANSIES.

A CONTEMPORARY writes:

We are puzzled to understand the application of the word "tufted" to the bedding Violas. We are told that the term tufted has been used to distinguish plants of a spreading habit, like Pinks, Anemones, &c., from plants with simple erect stems, such as the Stock, &c. To apply the term tufted to plants of a spreading habit is a complete contradiction of terms.

A writer in the same journal answers:—

"Among the plants to which botanists have applied the term, the most familiar and one of the prettiest is the dainty little *Campanula caespitosa*, often used as an edging, and of which there is a good white as well as the ordinary bluish form. Now the close or tufted habit is well shown in this plant, with its dense close habit, so very different to many plants of the same genus, some of them even reaching 6 feet in height, and showing every degree of vigour and looseness of habit. Well, if this plant possessed a dozen lives, it could not increase more vigorously at the root and spread than it does without losing its tufted habit, so that if one plants it as an edging in narrow walks, it will often meet in the middle and leave no room for the feet between; while, if we take it up, a thousand plants may be made from one, owing to its spreading habit. I have planted it near some flagstones and have found it runs both over and under them. Take, again, a native plant less known in gardens, but not uncommon, the tufted Rockfoil (*Saxifraga caespitosa*), which represents, in the same way as the little Hairbell did among its kind, the tufted habit of its great alpine family. Now, while always preserving their close tufted habit, these plants spread over the earth like magic. If the Saxifrages of the mossy section are dotted over beds or borders, they will soon close together and give little chance to the annual weeds that infest most garden ground. If we take up a plant, we find innumerable rootlets already at work in the moist, close tuft, always pushing its gentle, but not very slow, way over the ground. Just in the same way as these two types of well-known plants show the tufted and spreading habit, so are the mountain Violets, *V. calcarata*, *V. cornuta*, and others, which while tufted in habit spread at the same time at the root; this excellent character they have given to their garden progeny, the tufted Pansy—crosses between the alpine Violets and the newer garden forms of *V. tricolor*, or whatever the garden Pansies may have come from, a point on which good botanists are not agreed. What is beyond

dispute is that all these plants are hybrids and varieties, and therefore, by the express wisdom of the scientific, allowed only to possess an English name. The term tufted is a true and good name in every way from a botanist's or gardener's point of view, and gets rid of the never-ending confusion among gardeners in attempting to draw a distinction between Viola and Pansy, which is impossible and ridiculous.—E. J. L."

LILIES VERSUS ROSES.

In your issue of Feb. 25, p. 158, you publish an article by Alexander Wallace, of Colchester, headed "Lilies versus Roses." I am aware of Dr. Wallace's great reputation as a cultivator of Lilies, and therefore know that in replying to him I must be very careful of what I say, but I cannot quite understand why he should head his article as if the cultivation of Lilies were antagonistic to that of Roses, or *vice versa*. There is no reason that they should not be cultivated together, and I might say in sympathy with each other, and I can also state that both in a large garden I had at Bexley, in Kent, some ten to fifteen years ago and also now in a small garden I find room for both Lilies and Roses, and also for the proper cultivation of both classes of flowers.

Dr. Wallace begins his article by making a statement that, of course, may still be correct, but I think it would have been more so ten years ago. He states that he supposes "for one person that cultivates Lilies, 500 grow Roses." Of course, a statement of this kind cannot be controverted, as it is impossible really to say whether it would be correct or not, but with the facility now given to amateurs to buy Lilies of every variety at auctions, and, moreover, Lilies which we are fairly confident are true to name, a great impetus has been given to the growth of Lilies, and, therefore, many hundreds and thousands of people who ten years ago did not know a *L. auratum* from a *L. candidum* or *L. testaceum* can now tell at all events the difference between these and many other Lilies when they are in flower. I cannot quite agree with Dr. Wallace's statement that Lilies take "a back seat" in all summer horticultural shows, as where there are prizes given for arrangement of plants the Lily takes anything but a back seat, and I may say that at our own local show in this town of Croydon, where very large sums of money are given in prizes for the decorative arrangement of plants in groups and in flower, Lilies are shown in perfection. To instance another and the premier flower show of the London season, that held by the Royal Horticultural Society at the Temple Gardens in the month of May, the Lilies shown by such great growers as the Messrs. Veitch, Mr. Ware, and, I think, Mr. Bull, as well as other great Lily growers whom I cannot now call to mind, are a marked feature, and as much admired by many as the more valuable exhibits of glorious Orchids sent annually to this now celebrated show by Baron Schröder, Sir Trevor Lawrence, Messrs. Cypher, Sander, Low and others too numerous to mention.

Dr. Wallace then proceeds to analyse the various beauties of the Lily as compared with the Rose, but although in such a case comparisons may well be said to be at all events invidious, although not odious, yet I think he is wrong here also. He says no Rose can compare in purity of colour with the Lily. He does not, fortunately perhaps for him, specialise the Lilies, and as there are so many varieties and colours, one is naturally led to infer that he principally means the white Lilies. There is no doubt that the Madonna Lily, the Bermuda Lily, the *Lilium auratum virginale*, *Lilium lancifolium Kretzei*, and the common *Lilium longiflorum* are exquisitely beautiful in their spotless purity, but I have little doubt that Dr. Wallace knows more of them than he does of Innocente Pirola, most beautiful of all white Tea Roses; Niphetos, loved by some; Devoniensis, known to many and for half a century to a few; Souvenir de S. A. Prince and other white Roses which are quite as pure in colour as the Lilies I have mentioned, although of

course they cannot be compared in grandeur or size, and in this latter respect I think Dr. Wallace's title of "the modest Lily" is somewhat inappropriate. But if we further make a comparison, pure colour other than white, what yellow Lily can compare with Maréchal Niel in its pure golden colour? I am aware that there are many Lilies which have lovely golden colours, such as *auratum*, *Szovitzianum*, *Humboldti*, &c., but none of them which I can at the moment call to mind can compare with Maréchal Niel in its purity of that tint, and when the colours are intermingled, can any Lily surpass Comtesse de Nadaillac Rose? I must, although a great admirer and also—for the size of my place—a large grower of Lilies, give these Roses I have mentioned the palm for colour in the case of yellows; but I will mention one Lily which I think for delicacy of tint, when it comes true, is almost unrivalled in its colouring, and that is *Lilium Krameri*, a lovely and delicate tinted Lily of the palest rose, with which I can alone compare Mme. Gabriel Luizet and Mme. Montet Roses, the two most lovely pink and rose-coloured flowers the rosarian possesses. But it is when Dr. Wallace proceeds to compare the fragrance of the two flowers that he goes quite wrong in his assertions, and he here further makes the statement, which is utterly incorrect, that "the Rose is gone in twenty-four hours." With three of our very greatest rosarians living in his immediate neighbourhood, I am surprised that no opportunity has been given him (or that he has not availed himself thereof) of finding out the scent of fully half a hundred of varieties which quite rival, and in most cases surpass any Lily; and as regards their staying power, Tea Roses are quite equal to the Lily—they both last quite a week, not twenty-four hours—as cut flowers. As regards scent, I am aware that several Lilies, even those Dr. Wallace names, are very delightful, but I must draw the line at *L. auratum*, which few care to allow to remain in a sitting-room, although it is bearable in a large hall, and some Lilies, notably *Szovitzianum*, are unbearable even in a garden except at a distance.

I never grow Lilies in pots, and although I am speaking as an amateur grower against a specialist of great renown, I emphatically and in preference recommend everyone to grow Lilies in the open ground. They can be just as successfully grown in the open ground out of doors as under glass or in pots. They require no very special treatment, and will well repay the slight care they need. But there is no reason that either Lilies or Roses should be neglected, the one for the other they can be grown side by side, under similar conditions, and where one will succeed the other will also flourish. They do not clash in any way; they are both valuable for indoor and outdoor ornament; they both look best grown in groups, and, if there be garden room for such treatment, in large groups all of the same variety. There is no need for anyone to disparage either flower in order to exalt its rival, and this article is principally written to show that while Dr. Wallace is quite right in speaking in the highest terms of the Lily—a flower he has done much to popularise—yet there is no reason for his saying the Rose is inferior to it, as in fact and truth it is not so. There is ample room for both, and long may they be rivals in our affections as the most beautiful of all flowers grown in our gardens.

Croydon.

C. J. GRAHAME.

Transplanting Christmas Roses.—In a recent issue of THE GARDEN it was advised to transplant these in August. I think this rather too soon at any rate in the warmer districts of this country. The danger lies in exposure to a period of very hot, dry weather after planting and in checking the formation of bloom-buds, which should take place during that month. If the plants are removed with a good ball of earth and replanted where the sun cannot reach them during the hottest part of the day, there will not be much danger of their suffering for the time being, but in the case of Christmas Roses this kind of trans-

planting is often attended with disastrous consequences. Plants that have stood several years without disturbance are better for being divided, and in any case the greater portion of the earth must be worked away from the roots. If this is not done the growth in years following is almost sure to be disappointing. For this reason I have always preferred to transplant about the middle of September. At that time the hottest days are over, and cool nights with refreshing rains keep the foliage in good condition, the soil at the same time retaining enough warmth to encourage the formation of roots which annually push from the crown about that period of the year. I believe it will be found that plants removed then will bloom as freely the following year as if they had remained undisturbed. One of the largest growers of Christmas Roses annually does a lot of transplanting, and never begins before the end of September.—J. C. B.

NOTES ON HARDY PLANTS.

Aphyllanthes monspeliensis.—This is hardy in the fullest degree without doubt, and, moreover, one of the most distinct plants one can have among the smaller rockery subjects; but, so far as my experience goes, it is a very slow plant to increase. Possibly enough this may only be another way of representing that it is not quite so happy with me as it might be. Still, its slender Rush-like leaves, of 8 inches to 12 inches long, are every year well flowered, if the parts bearing flowers at their points may be so called. However, be they stems or leaves, they are Rush-like, and each point carries a flower the size of a sixpence and of a gentian-blue shade. There can be no doubt that if planted in good groups it would make a unique display when established.

The Cobweb Sempervivums.—There are three kinds that have the netted or webbed feature highly developed, namely, arachnoideum, pseudo-arachnoideum, and Laggeri. But at this period of the year they are what might be termed out of character, inasmuch as they have few or no webs, these having been broken down and destroyed by the weather, as well as the other nappy portions that are spread over the faces of the rosettes. This occurs from the autumn rains and winter, and for fresh web structures you will require to wait until the foliage gets into a state of growth again. It is because of this that you may not be sure at the present season that your Houseleeks are of the webbed class. But if you can feel certain that your plants did show the webbed character in summer, you may be sure that they will come all right again by and by. At the present season, to those who do not make a critical examination, arachnoideum may somewhat resemble montanum, pseudo-arachnoideum may resemble the larger atlanticum, and the whitest of all—Laggeri—be- reft of the whole of its tomentose covering, may well pass for the pretty little Pittoni.

Aster Stracheyi.—It is a mistake for this to be classed with the Michaelmas Daisies. I can understand that, owing to the little that is at present known of this very dwarf species, it may by chance get into lists among the Asters generally headed Michaelmas Daisies; but it has no more right to be there than Aster alpinus, which, though dwarf, is as tall again as Stracheyi. It flowers in early summer, and is otherwise distinct from its tall brothers. The herbage of this plant scarcely rises from the surface, and when in flower is but about 3 inches high. It has a quaint effect when in bloom, and though the colour of the heads may almost be described as dingy, a well-flowered specimen is attractive.

Trillium grandiflorum.—I think that where this charming flower flourishes it should be left to itself, and rarely will it be found to be benefited by division and transplantation. I have been told that clumps have been left undisturbed in an old garden during the lifetime of the present owner, who is now an elderly man. There the plants grew nearly as tall as the old herbaceous Pæonia, and

were masses of white in early summer. This would no doubt be considered by some a larger variety, but I believe I am correct in saying that it is nothing more than the ordinary type quite happy or well grown.

Senecio pulcher.—To grow this plant successfully requires artificial treatment, at least in these parts. I cannot more forcibly speak on this point than by mentioning the fact that strong plants have existed here for three years in succession, and a flower has not been seen. This statement applies to plants that have been left to their own way the whole time. On the other hand, there is no difficulty in flowering plants two years old from small off-sets if they are brought on in pots and cold frames and planted out after the late frosts have gone. This is the artificial treatment that seems to be required, here at least, and doubtless it is because of the tardy growth which the plant makes in spring, and also its late flowering habit in the autumn, that such care is necessary. On the other hand, for the warmer climates of Bournemouth, Torquay, and the west coast it is a reliable autumn bloomer under ordinary treatment.

Anemone umbellata (Willd.).—This, as implied by the specific name, is a species producing its flowers in umbels. It is nearly related to the pretty *A. narcissiflora*; in fact, it is grouped with that and Don's *A. polyantha*, an Indian variety, and *A. sibirica* of Lin. Its habitat is said to be the mountains of Cappadocia. I am pleased to see that it has come so far through a severe winter.

Cortusa Matthioli.—When we come to have really satisfied ourselves as to what is best, prettiest, and most interesting with which to clothe our rockeries, we shall doubtless include this in the number. It is not a showy flower—in fact it is but a pigmy plant, but there is something so pretty about this little primulaceous species, that one cannot fail to be pleased with it. It has the happy knack of holding its own with a tenacity that we should more usually attribute to stronger growers. Every year it is true to date, appearing on the surface in clubbed sprouts something like a miniature Lettuce, and in a very short time the leaves and flowers develop. No plant could have been subjected to coarser or more off-handed treatment than this has had here, and yet whether its head has had protection in winter or not, the little fat crowns unfold, and are seen to be full of blossom. *C. pubens* is even a prettier variety, but flowers later. It is distinct from the present kind in that its foliage is less wrinkled, less hairy, and almost grey with a tomentose pubescence, and though the plant generally is smaller, the flowers are perhaps a little larger and brighter coloured, something of the shade of crimson-purple. The plants love a moist situation and rather heavy soil.

Hardy Cyclamens.—I find that spring is far the safer planting time. No matter whether the corms are large or small, planted deeply or close to the surface, it is a very common thing for them to go off wholesale if they are not furnished with plenty of fibre and fairly well established before frost occurs. Especially is this the case with those corms that have been out of the ground for some time.

Narcissus minimus.—As usual, this is the first Daffodil to open here. I saw the first flower out on February 7.

Eremuri.—The sprouts of the different species may seem too forward, but it is some consolation to know that though very severe frost might blacken the points, as I have sometimes seen, I have never yet known a plant die from low temperature. To make doubly sure, however, it would not be a bad plan to place a handful of Bracken immediately over the crown when frost threatens, but it should not be allowed to remain on in mild weather, or more harm than good would soon be done.

Omphalodes Luciliæ.—Fickle as this species may prove in some gardens, it cannot be charged with tenderness. Without any protection I have kept

it through many winters, and during the present winter with a small square of celluloid over its head it has remained unhurt. I am therefore inclined to believe that the mere protection from winter wet will be of great advantage to the plant, especially in those gardens where it flourishes during summer.

Astilbe rivularis.—Were a little special treatment devoted to this noble plant, I question if we could employ a more effective subject as either a single specimen or for groups in the damper parts of woodlands. I am well aware of its tendency to run by means of its long and rosy underground stems, but it is just this feature that I suggest being dealt with by the special treatment. The only care needed to keep specimens in compact form is to take out a little soil, trench form, in a ring round the stool, say every year or every other year. This root-pruning might be done within 1 foot or 18 inches all round, and the pieces that might have crossed the line should of course be pulled away. The advantage of this plan is not merely to keep the plant compact, but to render it more robust and free flowering. The lower compound leaves are beautifully divided in the way of those of *Spiræa aruncus*, but five or six times as large; hence the suitability of this plant for use where a sub-tropical effect is sought. I have seen the plant making a glorious show between forest trees, where, however, there were plenty of moisture and good side light. I would like to be understood as not recommending this for borders of mixed flowers, for there it would be altogether too strong, and the frequent clearances of offset roots might injure its neighbours.

Sedum Pittoni, as I have known and grown it for the last six or eight years, is of the same class as *S. brevifolium*, remarkable for the quantity of farina which covers the whole plant, rendering it quite white. Compared, however, with *brevifolium* it is less branched and smaller in all its parts—indeed more like *S. acre* done in white. The arrangement of its fat leaves, perfectly quadrangular, is worthy of notice. I daresay all the farinose Sedums of this section are somewhat tender—at least they do not like the winter wet, but if kept dry in a cold frame, as they easily can be by the aid of peat moss, they always come through the winter. They are all harder than *S. arboreum*, as well as being better perennials into the bargain. Such plants as *Senecio argentea*, viscid plants like the Tar weed, very glandular species like *Umbilicus chrysanthus*, web-covered kinds like *Sempervivum arachnoideum*, and other forms whose foliage and stems are thickly beset with similar properties, can be safely wintered in cold frames and even kept in character the year round. Dryness is the secret, if there is a secret about the matter, and you may by the use of Moss not only keep unheated frames dry, but even render them amply so for other reputed tender succulent plants.

J. WOOD.

Woodville, Kirkstall.

Silene acaulis.—In his "Notes on Hardy Plants" (page 111) Mr. Wood refers to this lovely little mountain plant as a sparse bloomer. My experience is that it flowers much more freely when planted sideways into a very narrow fissure filled with plenty of limestone grit. Like most *Silenes*, this plant has a very strong tap-root, and seems to enjoy being wedged in tightly between stones. When using it in rock gardens, I frequently noticed brown patches, doubtless produced by excessive moisture when planted on level ground, but plants inserted sideways into an upright fissure not only look much healthier, but flower more freely. I may here state that the plants experimented with had a westerly aspect.—F. W. MEYER, Exeter.

Abnormal beauty of the winter Aconite (Eranthis hyemalis).—I never remember to have seen this old plant in such vigour and beauty as this year. In various parts of Cambs and Hunts especially it has been most perfect, the leaves luxuriating in the frequent rains and the blooms larger

and fuller of colour than usual. How marvellous it is that this and Snowdrops and the earlier Scillas and Windflowers are not planted in broad masses in home woods, sheltered plantations, and on portions of lawns, as well as on borders and in beds. It is only in broad masses that the full beauty of such rich masses of silver, gold, and blue can be fully realised. In towns as well as in the country I have lately come suddenly upon pleasing surprises in the form of breadths of these beautiful flowers, and not long since I saw a wood silvered over with Snowdrops of the common single type so infinitely more graceful than the double form.—D. T. F.

FERNS.

SHIELD FERNS.

(POLYSTICHUMS.)

THIS is a large genus comprising somewhere about half a hundred species, which have a wide geographical range. A few only of the greenhouse kinds are included with the *P. venustum* from New Zealand here figured. Polystichums have an especial advantage over the Buckler Ferns (*Lastreas*), inasmuch as they are ever-green, and their beautiful fronds remain perfect through the winter months, whilst the majority of the *Lastreas* are deciduous. The genera *Polystichum* and *Lastrea* resemble each other very much, and some instances occur in which it is hard to decide to which of the two families a plant really does belong, but, as a general rule, in *Polystichum* the indusium is shield-like, that is, circular, and peltate, whilst in *Lastrea* it is reniform. The habit of *Polystichum* is more rigid, the fronds being usually shining and spiny at the points of the segments, this rendering them extremely useful for cutting. The following are distinct and handsome kinds, and they will all thrive under greenhouse treatment. All are easily grown if potted in a mixture of about two parts good light turfy loam and fibry peat in about the proportion of two parts loam to one of peat, the whole well mixed and made fairly sandy. The pots should be well drained, for the plants like a liberal supply of water at all seasons, but especially in the summer when they are growing:—

P. VENUSTUM.—The frond here figured was sent to me by Mr. Angel from New Zealand; when fully grown the fronds are each about a foot or 18 inches long, bipinnate, deeply lobed, with spiny margins, deep green on the surface, paler below. Its chief distinguishing feature lies in the presence of a dense band of imbricating scales, which are black, bordered with brown, and which extend the whole length of the frond.

P. VESTITUM is another species from New Zealand. Specimens of this plant I have received through Mr. Eric Craig. It is a fine plant for the cool fernery, having almost lanceolate fronds some 18 inches long, the colour rich deep green.

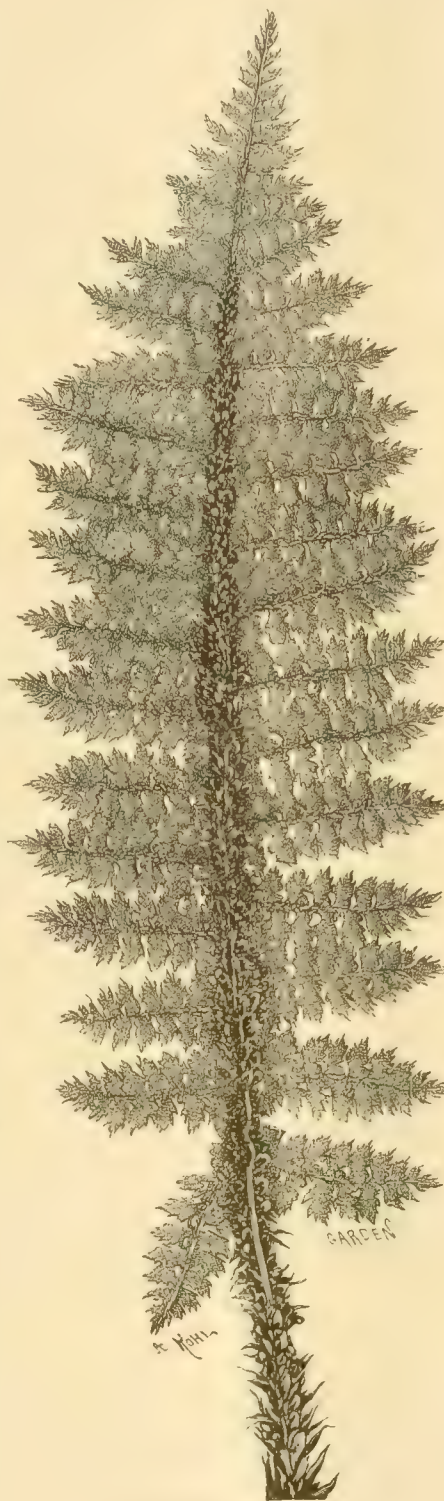
P. CAPENSE.—This is a very much larger plant than either of the two previously named. It makes a stout creeping rhizome, from which grow fronds some 3 feet and upwards in length. It has an arching and graceful habit. It thrives well in the cool house.

P. FRONDOSUM.—A native of the island of Madeira, making fronds from 1 foot to 3 feet in length; these are finely divided and rich bright green in colour. These fronds are admirably adapted for cutting for mixing with flowers in large vases.

P. FALCONELLUM, from the same country, is quite a different plant. It is a very handsome and distinct kind with fronds some 18 inches or 2 feet

long. The pinnae are large, bright green on the upper side, whitish green below, where the sori are large and conspicuous, rendering it very attractive.

P. CORIIFOLIUM comes from various places in the East, but I have grown the Ceylon plant into grand



Polystichum venustum.

examples in the cool fernery and used its fronds with much satisfaction for cutting. The fronds, from 1 foot to nearly 3 feet long and 1 foot in breadth at the base, are deltoid in outline, finely-divided, spiny-edged, and rich bright green in colour

WM. HUGH GOWER.

REPOTTING LARGE SPECIMENS OF ADIANTUM CUNEATUM.

I WISH to repot some large *Adiantum cuneatum* so as to have them in good condition through the summer months. Will it injure them to reduce the ball and pot in the same sized pot? I should be grateful for any information as to best soil for the same, also temperature.—SUBSCRIBER.

** The question of repotting large plants of this *Adiantum* entirely depends upon the present condition of each plant. If the plants are in a healthy state, making good growth in their season (this refers of course to last year), and they have been repotted within the last two or three years in good soil, it will be far better to let them alone and depend upon liberal treatment when growth becomes active. It is not advisable to be frequently disturbing this Fern at the root so as to cause any check. Of this fact I can quote an instance which came under my observation last year. A part of a batch of plants, all healthy and thriving, was potted into bigger pots so as to endeavour to make larger plants of them. This, however, did not make any appreciable difference in this particular case. Those that were not potted really got a start of the others and kept it for some considerable time, and even by the autumn the newly-potted ones were no better than the others. The moral of this is as follows: If the repotting had been allowed to stand over until this spring, and then the plants which were most in need of a shift had been duly attended to, the result would have been better, for the reason that last spring the shift that was given them was not actually required. This is quoted as an instance of potting, the results not coming up to what was expected. I infer, however, that "Subscriber's" plants are not in the best condition, by his stating that he wishes to have them so through the summer months. If this be so, then repot by all means as soon as the growth appears to be on the move. It will not injure them to reduce the ball and again use the same sized pots (clean ones of course) provided there are not many fronds upon the plants to sustain. On the contrary, if there is a large number it would weaken them to reduce the roots. This can, however, be overcome by greatly reducing the fronds, thinning out three-fourths of them if needful, or if there are none in good condition, then cut them all off. When this has been done it will be obvious that they would not feel a check at the roots in reducing the balls. When performing this work I much prefer to cut away the soil with an old knife, or other tool that would answer the same purpose, rather than do it with a pointed stick, which only tears the roots and leaves some behind that will die. The bottoms of the balls should also be cut away so as to secure a good amount of fresh soil there as well as around the sides. A fair reduction of the old balls would be about an inch or a little more all round, rather more at the bottom. This should, however, be regulated according to the case.

It may be that the plants are weakly; then I would reduce rather more and repot into smaller pots. Or again, the plants, if very old ones, will have possibly become dead in the centre. If this be the case, it would be better to make three or four smaller plants out of one than to attempt to restore such a plant to a satisfactory and healthy state. These divisions will in course of time again make good growth; it will take one season to re-establish them, so that they produce vigorous fronds in plenty. When repotting, it is always advisable to allow sufficient room on the surface for a light top-dressing, the finer portions of the soil being dusted over the crowns with a little more sand added to it. In potting, take care to press the new soil down quite firmly with a potting stick. In many cases sufficient importance is not attached to firm potting. It is in every way better for the plants, for they do not dry up so quickly as when the soil is loose and porous. Then, again, when perchance watering is done, this will find its way through the new soil and probably never penetrate the old ball, as it should do, unless the plants are stood into a tub or pail of water. Plants

that are potted firmly make far better growth, the fronds lasting longer in good condition.

The old notion of using peat for this and many other Ferns has been exploded for some years, yet in some cases it is still adhered to. If this *Adiantum* be grown in peat, the fronds will, it is true, be of a deeper shade of green and relatively larger in the pinnae also. Such growth, however, is not of so enduring a character; upon the plant it is more susceptible to damping off, whilst when cut it will not last nearly so well. And, again, what is of far more importance is that plants grown in peaty soil will not bear so much exposure to a cooler atmosphere, nor will they remain in good condition so long in the same pots. The best soil to use is loam, what is designated yellow loam being the best when it is full of fibre and is neither of too light a nature nor too heavy. A fibrous, rather stiff loam suits them well. When it comes too near to clay, then use some mortar rubble as well as sand or road-scrappings. For young plants some finely sifted leaf soil added to the loam would be an assistance, but I would not use it for large plants. No artificial manures should be mixed with the soil; these excite growth, it is true, for a time, but when the properties of the manures so used are exhausted, the plants must perforce decline in vigour. It is far better to assist the plants when pot-bound by such applications, using only those manures that have been previously tested. Weak guano water is very good; so also is clear soot water. Liquid manure from the farmyard should be quite clear if that be used.

When the plants are pot bound, they take an almost unlimited quantity of water. If this be given them without the plants ever really suffering from want of it, they will last in good condition for several years. I have grown and seen plants of large size, nearly the whole of the surface being taken up with the crowns, with but little room left next to the inner edge of the pots. To pot such plants when there are no signs of declining vigour would be labour wasted; the soil in cases of this kind would go through a sweetening process during the resting period, then for two or three months but little water would be given them. The plants would probably lose nearly or quite all of their fronds, but this would not matter; they start into fresh growth all the more kindly in the spring after a rest. After the plants are potted they should be given a few degrees more heat, but a too moist atmosphere should be guarded against, whilst but very little shading should be used. The plants should likewise be kept as close to the glass as possible, nothing in the way of overhanging foliage being allowed. After potting, an ordinary stove with a temperature of from 60° to 65° at night, rising proportionately during the day 10° or 15° according to the weather, would be a good place for large plants. They must not, however, remain there, for as soon as the growth was dense there would be a disposition to damp off. When the first crop of fronds is nearly fully developed, the plants should have a position with a little more ventilation. For my own part, I like to see the young fronds when pushing up assume a roseate hue—bronzey, perhaps, some would term it; this denotes a healthy state of things. When the first growth is hardened, the plants should be able to endure a temperature no higher than that already given, but with light and air. It must not be inferred that this is contradictory to what has already been stated as to temperatures, for by that time warmer weather will rule again. To prevent large plants from drawing all one way, they should be turned occasionally; whilst to preserve the fronds in good shape as they push up, the older ones should be carefully drawn outwards, this making the plants appear larger also. The syringe should never be used upon the plants at any time.—*FILICES.*

The weather in West Herts.—There was a little cold weather at the beginning of February and also during the last week, otherwise the month was a very mild one. At no time did the thermometer exposed on the lawn indicate more than 16° of

frost. The most noteworthy feature, however, was the rainfall, which proved singularly heavy and continuous. The total yield from rain and melted snow amounted to 3.69 inches, which is nearly double the average for the month, and with three exceptions greater than in any February during the past thirty-seven years. Indeed, there occurred altogether only six days without rain or snow. On Tuesday last the sun shone continuously for nearly nine hours, a very high record for a February day. The Coltsfoot came first into blossom on Sunday last, or nearly five weeks earlier than it flowered in the previous year on the same bank. The low barometer reading on the 21st ult. was, I find, the lowest recorded here since November, 1891, and not, as stated in my last report the lowest since January, 1890.—*E. M., Berkhamsted.*

RAILWAY RATES AND THE FRUIT TRADE.

ON Wednesday, March 1, Mr. Mundella, President of the Board of Trade, received a deputation representing the London Fruit, Flower and Vegetable Buyers' Protection Association, the Market Gardeners', Nurserymen's and Farmers' Association, the Kent Fruit Growers, and the Canterbury Farmers' Club on the subject of railway rates and charges. Mr. W. F. D. Smith, M.P., in introducing the deputation, observed that the members of the London association were the chief agents in the distributing trade all over England. Covent Garden Market was, in fact, the clearing house for a large amount of produce, coming not only from the home cultivators, but from all parts of Europe. It was perfectly clear that the recent great increase in railway rates would prejudicially affect their business. Hothouse fruit formed the second item of the trade. For every 10 lbs. of that class of produce sent by rail a few years ago, at least a ton was now sent, and yet the railway rates were much higher now than when the smaller quantity was put upon the rails.

Mr. W. Berry, Mr. George Monro, Mr. George Coleman, and other speakers gave instances of the injustice of the present railway rates, and of the injury they must inflict upon the home fruit trade.

Mr. Mundella, in the course of his reply, remarked that no greater benefit can accrue to the people than the development to the utmost possible extent of the growing of vegetables, flowers, fruits, and kindred supplies for home consumption from our own soil, instead of our being compelled to import so much as we now do from foreign countries. We have some disadvantages attendant upon our climate, but with those you are attempting, not unsuccessfully, to grapple. When I hear that the hothouse fruit trade has grown to such an extent that the production is now a ton where it used to be 10 lbs., it is clear that the rates for carriage ought to be less rather than more. There is no doubt about it that if the railway companies would do what an enlightened self-interest should prompt them to do, they would do all in their power to encourage and develop your industries. No man who knows the condition of trade and agriculture, whether he be in Parliament or out of it, can fail to sympathise with, and wish prosperity to the industries with which you are connected. You have presented your case with great fulness, and have placed before me a long list of examples of the charges of which you complain, some of which show a discrepancy between the rates for home and foreign goods and indicate undue preference, which is distinctly contrary to Act of Parliament. In regard to that matter there is nothing for it but an appeal to the Railway Commission. You say that that is too expensive a remedy. Well, we must see how that can be managed. At any rate, something ought to be done. A good deal of reference has been made to the Brighton Railway Company, and I have a letter from Mr. Searle, the secretary and manager of that company, stating that he had received a deputation from the Worthing fruit growers and granted them considerably lower rates than had previously existed. He adds that the company are now engaged in compiling new rates,

which will restore the old rates as nearly as possible. That is a very satisfactory letter, and I wish all the railway companies would write me in the same spirit. So far as the Board of Trade is concerned, we shall be glad to be the medium of conveying to any particular railway company or to the Railway Association any complaints you have to make.

Death of Mr. Geo. Phippen.—We regret to announce the death of Mr. Geo. Phippen at Reading on the 16th ult., at the age of 29 years. Taken ill on the 9th ult., he gradually sank, the cause of death being blood-poisoning. Mr. Phippen's father, who had formerly been a gardener, established himself in business as a nurseryman in the Oxford Road, Reading, in 1864. At the age of 21 the son succeeded to the business on the death of his father, and by throwing into it a considerable amount of energy and enthusiasm, soon considerably extended it, and also the seed business in Broad Street. Mr. Phippen had charge of the public gardens in the Forbury, under the corporation of Reading, and the displays he made in spring and summer were of a high order of merit. Until recently he was the superintendent of the horticultural department of the Reading Cemetery. He also laid out the public park, the gift of the late Mr. W. J. Palmer. He also acted as superintendent of the exhibitions of the Reading Horticultural Society, and in addition held in the Town Hall in the spring a show of his own of spring-flowering plants, the high character of which attracted a good deal of attention. During 1892 he was one of the leading exhibitors at the International Horticultural Exhibition at Earl's Court and at the exhibitions of the Royal Horticultural Society, of which he was a Fellow. He was also a member of the floral committee of the society, and a member of the National Chrysanthemum and other special societies.

The Gardeners' Orphan Fund.—The committee met at the Hotel Windsor on the 24th ult., Mr. William Marshall presiding. The minutes having been read, the chairman was unanimously re-elected to that position for the next twelve months. Among the special donations was one from Sir Edwin Saunders, recently elected a vice-president of the fund, of £10 10s.; a friend at Edinburgh, £2 2s.; collecting box, per Mr. Noah Kneller, The Gardens, Malshanger Park, 9s.; while other small sums were announced. A letter which had been addressed to the president, Sir Julian Goldsmid, was read from Mr. Asquith, announcing that Her Majesty had given her gracious permission that the fund should hereafter be known as the Royal Gardeners' Orphan Fund. A resolution was unanimously passed expressing to Mr. Asquith the great gratification with which the committee had received the intelligence of the gracious permission given by Her Majesty. A hearty vote of thanks was also passed to Col. Stanley A. Clarke for his exertions in obtaining the consent of Her Royal Highness the Princess of Wales to permit her name to be announced as the patroness of the fund. The secretary presented the report of the recent election of candidates, and announced that the annual dinner would take place on March 22, at St. James's Hall, Baron Ferdinand de Rothschild, M.P., in the chair.

Names of plants.—*E. Castle.*—1, crushed out of all recognition; send again in box; 2, *Odontoglossum triumphans*; 3, *Ceoloyne cristata*.—*G. Howard.*—1, *Odontoglossum Pescatorei*; 2, *Lælia albidula*; 3, *Lælia rubescens*.—*C. Krupp.*—1, *Microlepia Novæ-Zelandiæ*; 2, *M. scabra*; 3, *M. strigosa*; 4, *Demastadtia Pavoni*.—*T. Mayhew.*—1, *Odontoglossum Pescatorei*; 2, *Lycaste aromatica*; 3, *Colax jugosus*.—*J. Bramley.*—Specimens of Ferns received without any numbers. —*F. M. Burton.*—1, *Odontoglossum Rossi majus*; 2, *O. hebraicum*, poor variety.

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WOODS AND FORESTS.

TREE PLANTING AROUND LONDON.

THE injudicious planting of trees in and around London is fast becoming an evil that will require the most drastic measures to keep it in check. In this particular respect probably the suburban districts should receive first attention, the town planter being kept somewhat in check by the existing laws of the municipal and other governing bodies. Take, as an example, almost any of the roads deviating from the main London thoroughfares, and what I complain of will at once become evident, three trees planted in positions where one would have been ample, and single specimens placed where they can never become properly developed. In some of the rural suburban districts the want of discrimination used in planting is something appalling, and to look along the road leading from London to Sevenoaks reveals a state of matters in respect of tree planting of which, as a people of arboricultural tastes, we should be heartily ashamed. Probably nowhere in the south of England, and certainly not within twelve miles of the great metropolis, is there a prettier bit of road or one that is more frequented than the London and Sevenoaks, but particularly that portion passing through the ancient town of Bromley and bordering on the well-known Hayes, Keston, and Farnborough Commons. To those who know anything of trees and tree planting, this same road—I will define from Bromley to Farnborough—has been rendered anything but pleasant, and that owing to injudicious planting. All along the left side of this road in leaving Bromley trees have been planted by the path-side, and at an average distance of about 12 feet from old standard Locust, Beech, and Birch trees, and in many instances the spreading branches of these fine, hoary specimens are overshadowing the gaunt saplings that have unwisely been placed beneath them.

There is another crying evil about tree planting that wants dealing with. That is the spoiling of many beautiful views by the indiscriminate planting of trees by the road and street-side. What a wealth of beauty will be lost to the occupiers of houses on this Bromley road when these trees are a few years older! The outlook on the pretty commons and on the far-away Holwood Hill will in some cases be quite shut out from view. Then, again, the tunnel of trees that in a few years hence will adorn (!) that pretty road from the famous Keston Mark to the Bromley Common Vicarage and render it, unless lopping and pruning are resorted to, wet, dismal, and unhealthy, may please at the present time, but in fifty years how will matters stand? But this is only one-half of the evils that attend injudicious tree planting. The hacking, hewing, and beheading that are characteristic of metropolitan trees must also be censured and condemned. But why has this maltreating of trees and shrubs to be resorted to? Is it not traceable to the first evil—injudicious planting? For by placing trees in wrong places and too closely together, either wholesale removal or pruning must be resorted to. The first is rarely done, for most persons have a horror of taking away a tree once it has become established, while the second becomes compulsory and is gone about in a way that is at once barbarous and rude. By remedying the evil, or planting only in suitable positions, this compulsory pruning would be done away with, and instead of the distorted, mop-headed trees of the metropolis and its surroundings, we should have those of

natural form and that would be pleasing to look upon. Far better to have one well-formed tree as Nature designed it than three cramped together requiring the foreshortening and heading back of their branches to allow of breathing room. Let me advise those who must have several trees in their small and cramped grounds, instead of planting the indispensable Lime and Plane, to try such neat miniature subjects as the Manna Ash (*Fraxinus ornus*) or the Clammy Locust (*Robinia viscosa*), both highly ornamental flowering trees that rarely exceed 20 feet in height. There are many beautiful dwarf-growing trees that would gladden the eye quite as well as the commonly cultivated monarchs of our forest, and which would allow of at least two specimens being planted instead of one in the town and suburban garden, and by the roadside too, if planting there be a necessity, but which, in the majority of cases, I much doubt. A pretty villa has just been erected in a fashionable suburban district, and in the front garden, which only extends back from the street about 20 feet, a fine specimen of that forest giant, the *Araucaria imbricata*, has been planted. Now, had the owner before laying out and planting his ground, sat down and considered, or found out from a catalogue or book what size the *Araucaria* attains to, he would have acted far more prudently than by paying a large sum for so fine a specimen, which must either be pruned back or left to shut out the view and destroy the appearance of that pretty house and darken its windows.

The system of lopping and beheading the Limes around London, and which would seem to be peculiar to Southern England, is, in my opinion, cruel and full of vandalism. Usually, whether for screen or other purposes, that noblest of trees is planted at distances of say 12 feet apart, and when they have attained to about 10 feet or so in height, the annual slaughter of top and branch commences, the result in a very few years being a lot of ungainly, mop-headed scrub—trees we cannot term them—with unsightly protuberances at each branch tip, caused by the repeated yearly heading back to which they are subjected. Far better would it be to plant at further distances apart, or use smaller-growing subjects that would not require this annual lopping.

It would seem to be a foregone conclusion with the builder of a house that the grounds, be they great or small, must be planted with certain kinds of trees, and these, unfortunately, the largest growing species that grace our forest lands. Thick planting is at first, perhaps, not to be condemned wholesale, but early taking away of every alternate specimen must be attended to in time, for once a tree gets shabby and side-bare by being too closely grown to another, its beauty is destroyed. Before street and roadside planting is taken in hand, considerable forethought and judgment are all-important, and, above all things, do not forget to take into account the size to which a tree, be it a Plane, a Lime, or a Thorn, will attain before its position is finally settled upon. By so doing a great amount of unpleasantness in many ways would be avoided. A. D. W.

Cutting and felling hedges.—A hedge that is made of any plant that sheds its leaves in autumn should never be cut until after the leaves have fallen, unless in the case of plants that are strong and vigorous, and that also have attained the full size to which they are required to grow, for the reason that nothing tends to weaken a deciduous plant more than a reduction of its shoots and branches whilst they are covered with leaves. Whether composed of Beech, Yew, Privet, Holly, or Quick, hedges need not from the first be kept cut

back so closely if not required to branch out in a way to render them at once impervious; on the contrary, they may be allowed to run up more quickly, simply keeping the sides trimmed up with more breadth at the bottom than is necessary to allow the lower branches to get light enough to keep them healthy and thriving, a condition more likely to be maintained than if cut quite perpendicularly in the old-fashioned manner with the top square, an ugly and formal shape, and one in which a hedge can only be kept healthy when allowed to grow to a very considerable breadth from bottom to top. In the case of young hedges round parks or orchards, the first consideration is to manage them from the commencement so as to secure a close, impervious bottom; this can only be accomplished by cutting the leading shoots down sufficiently low the first or second year after planting to cause them to break back near the base, and each subsequent year to shorten the strong, erect growths enough to cause them to branch out still further; this will have the effect of throwing additional strength into the lowest branches that occupy a horizontal position.

Weeping trees.—The association of the common Weeping Willow with water leads people to think that it will not succeed elsewhere; but there are few spots, even away from water, in which it will not thrive if the soil be deep. I have seen really grand specimens of it growing on lawns. Scarcely less beautiful is the Weeping Birch; for, although its spray is not so long as that of the Willow, yet, owing to the tree being more lofty, it is nearly equally effective. Not so graceful, perhaps, as either of these, but a better arbour tree, is the Weeping Ash. Owing to its extreme pendulous habit, it is necessary that it should be worked on very tall stocks, as if height is not secured at first, it cannot be obtained afterwards. The Weeping Ash should be planted in quiet, secluded spots, where, when fully grown, it may form a pleasant retreat during sunny days. It will be found that a tree with a stem considerably bent or inclined at the top will form the most convenient arbour tree, as the position of the stem will then be at one side, instead of in the centre.—A.

Open drains are mostly used for plantations, and have many advantages over covered ones, whether laid with tiles or stones; the greatest objections are, the liability to become choked with soil, leaves, branches, &c., which necessitates their being often cleared out; the width necessary to keep them from falling in when of good depth; their inconvenience in the removal of timber, and their unsightly appearance in home plantations. But where the surface water is the great evil to be removed, they render the ground dry, although of no great depth, and are therefore not so objectionable in such circumstances. In few cases, however, is surface water the only moisture to be removed, and open drains are seldom effective if less than 2 feet deep, however close they may be to each other.

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No. 11/2. SATURDAY, March 11, 1893. Vol. XLIII.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare*.

CHRYSANTHEMUMS.

SEEDLING CHRYSANTHEMUMS.

As remarked by Mr. Iggulden (p. 143), the raising of seedling Chrysanthemums is very much of a lottery. For one even good sort dozens of worthless kinds are obtained, so much so that many persons have given it up as not being worth the trouble. No doubt the offering of prizes for plants in flower in November will give this phase of Chrysanthemum growing a fillip for a time, but if the blooms shown last year at one of our leading exhibitions as the result of seedling-raising are to be taken as a fair criterion of what we may expect, I do not think that the practice will be followed up. Early in November is too soon to expect very good results from plants raised from seed sown in February or March. If it could be so arranged that blooms could be shown the second season as the outcome of the seed sown the year previous, I think much better results would be had. It is well known that many of the best varieties do not develop anything like full centres the first year; these in many cases are condemned as worthless; whereas a more extended trial would give a greater percentage of desirable blooms. Cultivators of seedling Chrysanthemums should allow the plants to flower both from crown or central buds, and from side growths also; this practice increases the possibility of ascertaining the first year the probable worth of the variety. Even well-known good kinds exhibit a marked difference both in colour and formation when allowed to develop their blooms from side shoots. So much does this affect some varieties as to make them hardly recognisable to any but the experienced. Therefore, in the case of undeveloped seedlings we may expect similar results. If any new variety exhibits quality in either colour, formation of petal or flower when developed from a side growth, it is a sure sign that more may be expected when blooms are obtained from crown buds on the leading or main growths. As Mr. Iggulden remarks, the result of seedling-raising will be to give us varieties identical with many already in commerce. I have already experienced this in several sorts sent me for trial during the past season. It is not every person who can expect to be able to distribute seven really good varieties in one year, like Mr. Seward, all the result of seed sowing, and including such sterling varieties too. It is not too much to say that two of them are by far the finest of their colour ever sent out, which renders this batch all the more remarkable.

A good plan to economise space in proving the seedlings is to plant them out of doors in some sunny open situation and allow all that will to flower in the open, even if protection from early frost in a temporary manner is necessary. An idea can be formed of those likely to be worth perpetuating, and much valuable space inside will be saved for other plants, and the trial of seedlings will not be

much impaired. It must be understood, however, that I am alluding to the ordinary cultivator who has a desire for novelties, but who has not the space at disposal for housing a lot of what may turn out to be worthless sorts.

E. M.

New Chrysanthemums.—The Continental growers are now busily sending out their lists of novelties preparatory to distributing the plants. There are up to the present eight raisers' lists to hand, and they offer the modest total of 281 new sorts for sale. Fifty-four are new hairy sorts; then we have several sets of new early-flowering varieties, and, as usual, a large number of the ordinary November varieties. There is a slight improvement this year in the naming of the new flowers, but plenty of room still for genuine complaint. Family surnames already used in the past with such bewildering frequency have again been called into requisition. Names of inordinate length, like *Souvenir de Mme. Paul Chandon*, are not quite so numerous as before, but still there are too many, the worst instance, perhaps, being *Marquise Gaspard de Clermont-Tonnerre*. Among some of the most curious names I select the following: *Bailly de Sufren*, *Fuset Aublet*, *Don Binelli*, *Chanoine Eysséris*, *Belle Maguelone*, *M. Hovyn de Trauchère*, *Haré d'Olphove*, *Messidorine Vauvel-Duminy*, *Le Vidame de Moirax-Altair*, *Mme. Cieutat*. If English gardeners and amateurs were left to themselves, it is difficult to say what transitions these names would pass through in the course of a year or two, and it is a matter of congratulation that we have a national catalogue to fix once and for all the orthography of such extremely awkward names.—C. H. P.

Chrysanthemum Mme. Lacroix.—A friend of mine from Scotland tells me that he finds the above a most valuable variety for cut bloom. He grows the same plants on from year to year without cutting them back, and by so doing obtains an almost continuous supply of bloom throughout the year; the flowers are not large, but of a useful size for many purposes. The idea of growing Chrysanthemums as above is quite new to me, and it may be so to many readers of THE GARDEN. I do not think there are many varieties that would be found to bloom so freely under the same treatment; and although good white Chrysanthemum flowers are always useful, I do not advocate the system of having them out of season.—F. H.

Chrysanthemum Beauty of Castle Hill.—This Chrysanthemum, which was recently shown in fine condition by Mr. Owen, is a first-rate variety for late blooming, though good flowers of it may also be obtained at the ordinary season. It is a large full flower of a bright yellow colour, with some of the petals tinged with reddish bronze. In general appearance it bears a certain amount of resemblance to the *American gloriosum*, and is said by Mr. Owen, the raiser, to be a cross between that variety and *Mrs. Falconer Jameson*. It was awarded a first-class certificate by the National Chrysanthemum Society on November 25, 1890, and was distributed the following spring.—T.

Chrysanthemum Mrs. Falconer Jameson.—Mr. Molyneux in his article on Chrysanthemums Feb. 18 (p. 122) says that *Mrs. Falconer Jameson* blooms too early, if grown under the ordinary method, for getting suitable flowers for exhibition in the middle of November; but that these early blooms are of much better quality than those resulting from topped plants. With me, if the plants of this variety are grown under what Mr. Molyneux terms the "ordinary method," the blooms instead of being early are very late, and the quality poor in the extreme. The best results I have had are from topping the plants about the third week in March, taking up three shoots, and from these saving the first buds which show. I am not an exhibitor, but at the same time I claim to be a large grower, and this of some years' standing, both for big blooms and naturally grown bushes for conservatory decoration, and I like to cultivate

the plants so as to get the most perfect blooms, even if only for home show. For my purpose, even if the flowers of a variety came early, if good, they would suit me, although I like to have Chrysanthemum blooms to range over a considerable period. We open the season in September, and keep on until the end of January. The most perfect flowers of *Sunflower* I ever saw were from plants topped in March.—A. YOUNG.

LATE-FLOWERING CHRYSANTHEMUMS.

It has been abundantly proved that the best prices for cut Chrysanthemums, whether bunched or as single large blooms, are obtained in the markets just before Christmas, the demand being fully equal to the supply then and for several weeks later. The same rule holds good in private places generally. November is the month when a grand display of blooms is expected as a matter of course, but it is during the next three months when the private gardener, who is called upon to provide abundance of cut flowers, has every reason to congratulate himself when late Chrysanthemums are plentiful. Thanks to the introduction of good naturally late varieties, there is no great amount of cultural skill needed to have these at their best at mid-winter, some keeping good or continuing to open their flowers till the end of February. What is wanted is the determination to grow more of these late varieties even to the exclusion, if necessary, of a few dozen or score of the mid-season varieties. When there are so many strong, well-rooted young plants in such great and good variety now ready for a shift, it is no light undertaking to weed these out and discard a considerable portion in favour of late varieties, yet this is what I am doing, and feel certain no mistake will be made in the matter. It is not yet too late to strike cuttings of various late varieties that I shall presently allude to, and there is also much to be said in favour of converting some of the intended disbudded plants into more naturally grown specimens, late flowering in many cases being an accompaniment of this practice. I do not insinuate that the days of huge blooms are numbered, as there will always be plenty ready to grow and to admire these, but signs are not wanting of a wish to return more to the old order of things. In other words, the opinion is gaining ground that the huge blooms are coarse and not so serviceable and effective in a cut state as the more naturally grown sprays, and I am not prepared to combat this idea. What I suggest, therefore, is that the growth of disbudded plants or those to produce extra large blooms be not overdone, or, say, to the exclusion of bush plants of early and late varieties in particular, otherwise it may happen that a fiat be issued that no more big blooms be grown.

Last season many varieties behaved very strangely, the buds showing either too early or too late for these to be "taken" at the right time, so as to have the blooms at their best in the early part of November, and not a few of us had finer flowers in December than were on view in the month previous. Most of these, however, were of naturally late varieties, and could usually be had similarly late without much trouble. R. C. Kingston was at Christmas particularly fine and more richly coloured than often seen. Very good also were *Lady Lawrence*, *L. Canning*, *Mrs. H. Cannell*, *J. S. Dibbens*, *Mlle. Marie Hoste*, *Robert Craig*, *W. W. Coles*, *Violet Rose*, *Mme. E. A. Carrière*, *Lilian S. Bird*, *Etoile de Lyon*, *Kioto*,

Golden Dragon, Lucrece, and all the Princess of Teck family. If, therefore, large blooms are desired at Christmas or thereabouts, all that is necessary is to grow plants of these naturally late-flowering varieties with those that are to give fine blooms in November, but not to take the buds before the first week in September. In all cases these late buds, not necessarily terminals, are followed by blooms of better form and colour than are as a rule obtained when earlier buds are taken. No risks ought to be run by leaving in the open after September is nearly or quite out plants that are to give late blooms, nor need they be kept very cool. The flowers of Lucrece, the buds of which were taken about the end of August, were at Christmas equal to the best blooms of Florence Davis (also a late variety) I have yet seen, and scarcely distinguishable from them, but the habit of growth is sturdy and quite distinct. Mlle. Marie Hoste is particularly beautiful when flowered late, and Etoile de Lyon is both richly coloured and of good form, coarseness not being noticeable in the case of these late blooms. Beauty of Castle Hill with me proved to be one of the latest Chrysanthemums. No buds could be taken till just before the plants were housed, and the blooms were cut Feb. 25. It is a rank growing variety, of comparatively little value. Large late blooms of Meg Merrilies and Ralph Brocklebank can be had, if desired, at Christmas if the buds are not taken before the end of August; but I hold that sprays of these varieties are most to be preferred. I also prefer the smaller blooms, or those produced from stopped plants, of W. W. Coles to the larger ones.

There are a few varieties particularly well adapted for late winter flowering, most or all of which will usually afford abundance of cut bloom in addition to being very serviceable for house and conservatory decoration. Foremost among these I would place Boule de Neige. This is naturally of a dwarf habit, and if not stopped later than the middle of June will give good sprays of small paper-white flowers at Christmas. The buds of this variety are very susceptible of injury from frosts, or as much so as the early Mme. Desgrange, and the plants must not, therefore, be left out unprotected with a view to retarding them, nor is it necessary even if protection can be afforded. An excellent rich yellow-flowering companion is found in Golden Gem, and in this case there ought to be no late stopping nor leaving out in the open after September. The latter is apt to grow too strongly when planted out, and neither this nor Boule de Neige ought to be prepared by being planted out, 9-inch pots being most suitable for strong plants struck, say, in February or early in March, or three late-struck plants may be grown in each 8-inch pot and only topped once. To have Golden Gem at its best a few early struck plants should be grown as natural standards. Shift them into 9-inch pots, allow them to run up in common with those to give show blooms, a stake 4 feet high being placed to each. Remove all lower side shoots and reserve four of those produced at the first natural break. There must be no disbudding, and in due course each branch will become clothed with richly coloured flowers, it being possible to cut wreaths of them 18 inches in length. Dwarf plants of Golden Gem gave us their last flowers on February 24. Ehel and the yellow form of it known as Mrs. H. J. Jones also flower remarkably well when grown as natural standards and not disbudded, and bush plants are also very serviceable at midwinter. There ought to be no late stopping, as strong well-ripened branches

will give a long succession of flowers for cutting. These varieties lift readily from the open ground, and may either be placed in pots or planted in a bed of soil. Meg Merrilies and the yellow sport from it are very good for late flowering, bush plants stopped not later than the middle of June being perhaps the most reliable. These, again, must not be unduly exposed to late frosts. For yielding very late flowers in profusion there are no varieties to surpass Mrs. C. Carey and its yellow sport Goldfinder. Strong bush plants kept on a light greenhouse shelf will give a long succession of light feathery flowers from Christmas to the end of February, and very serviceable I have found them this winter. They succeed well lifted from the open ground, but I prefer bush plants in 10-inch pots, stopped not later than the third week in June, the final shift being given when they are breaking afresh. In this manner from eight to twelve strong erect growths can be had, a single stake and a few ties being sufficient for keeping these well up together. Goldfinder is greatly appreciated by ladies, as it bunches up charmingly, the colour being a pleasing shade of yellow. A good batch of both varieties ought to be grown wherever cut flowers are in great demand.

W. IGGULDEN.

OUTRAGING NATURE.

IN a recent issue of THE GARDEN "E. H." has a short paper, headed "Outraging Nature," in reference to my note on *Toronia asiatica* as a basket plant. He says: "Gardeners, like poets and artists, should be allowed a little licence and not be criticised too closely, as many of their errors may be ascribed to a laudable desire to please those who find the sinews of war which lead to their employment." And again: "There is a good deal obtaining in gardening at the present moment—probably there always will be—which from an artistic or natural point of view may be regarded as outrages upon Nature." I must confess that instead of finding "E. H." anxious to devise excuses for these outrages on Nature I would much prefer to see him waging war against them in the pages of THE GARDEN.

If Nature is not to be our guide and teacher in prosecuting our studies in horticulture, then who or what is? I do not think that the highest pleasure can be derived from visiting a flower show, however gorgeous the flowers exhibited may be, if the plants that produce them are tortured and twisted by stick and tie into regulation shapes that have no counterpart in Nature. Rather would I roam our fields and contemplate the lowliest flower that blossoms than be a witness to such prostitution of an art the object of which ought to be to "mend Nature," not to outrage her. I can well remember some years ago at the famous Orchid conference held in the large conservatory at South Kensington how deeply offended many visitors were at the manner in which some of the most splendid specimens were spoiled by the free use of light green painted sticks and white raffia ties in supporting flower-stems the colour of which was deepest black. Another matter in connection with the exhibition of plants which passes the comprehension of most people, and would, I fancy, puzzle "E. H." himself to find an excuse for, is how the committee of any horticultural society in the kingdom can be induced to offer a prize for a certain number of standard Chrysanthemums as they are usually seen at our autumnal shows. Outraging Nature is a pretty strong term, but not half strong enough for the condemnation of such exhibits as the conventional standard Chrysanthemum of our flower shows. Cases of a similar nature could of course be multiplied, and although the public in general are emphatic in the censure of such outrages, yet, strange to say, little or no effort is made by those who ought to be our preceptors to rectify these glaring mistakes. It is perhaps not

too much to say that at some exhibitions the only subjects arranged in an artistic or natural manner are a few groups of flowering and fine-foliaged plants simply for the decoration of the hall or tent, as the case may be, the competitive exhibits themselves being one and all outrages.

But to return to the subject of plants as they are found in Nature; I hold fast by the opinion that the truest art consists in taking Nature as our guide, and that the more closely we follow her precepts in the disposition and cultivation of all our garden ornamental plants, the more pleasure we shall derive ourselves and impart to others. "E. H." names *Cissus discolor* as a good subject for a basket, but I venture to think that could he but see the plant growing in a state of nature in the jungles of India, he would never again submit it to such an outrageous position as a wire basket dangling from the roof of a stove or greenhouse. In its native country the plant is herbaceous, entirely disappearing from sight during the hot and rainless months, and is only recalled into activity by the first revivifying shower of spring. It then quickly makes its appearance, developing its stems and leaves with marvellous rapidity in the warm humid atmosphere. In Malabar it is found plentifully in the Bamboo forests, and, as if by instinct, it affects the near proximity of a Bamboo clump, the lower branches of this yielding a ready medium for the fullest display of its climbing nature. Its season of growth is from the month of April till September, and during that period a strong plant will climb up by the aid of its tendrils and encircle a large clump of the giant Bamboo, displaying such a wealth of beautiful velvety foliage as to startle and amaze the observer. The plant being furnished by Nature with tendrils is, to my mind, conclusive proof that the most absurd position it could be placed in under cultivation is in a suspended basket.

I have frequently heard the opinion expressed that, whereas certain plants are found in a state of nature growing upon trees, they are therefore fit and proper subjects for baskets; but the difference, to my mind, between the two positions is very wide. Take the case of two Ferns, for instance—*Nephrolepis exaltata* and *Asplenium formosum*. In a wild state they are never found growing on the ground, but always from the clefts of trees or fissures of rocks, in which positions they are extremely graceful objects and undoubtedly seen to the greatest advantage; but place them either in pots or meaningless baskets, and they are at once shorn of half their graceful beauty.

IN THE GARDEN (Jan. 14) three illustrations are given of artificial tree stumps as used in the Botanic Gardens at Lyons on which to grow certain kinds of plants. These would appear to answer well, presenting a pleasing and somewhat natural appearance, and could hardly be objected to so long as plants are used whose natural habitats are the branches and trunks of trees and other elevated positions. If, however, such plants as *Latania borbonica* are used to crown the structure, as in illustrations 2 and 3, although with the plausible object of producing shade effects in winter gardens, by raising them from the ground, even this novel system is objectionable, being an "outrage upon Nature."

J. LOWRIE.

Saving hardy Cyclamen seed.—In cleaning over a shady border here to-day I noticed some clumps of hardy Cyclamen well set with seed, particularly *hederifolium* and a large-flowered white seedling. Being anxious to secure the seed, I should be glad if some of your correspondents would suggest some means of preserving the same from mice, as trapping them seems quite useless. I have tried to save seed for the last three years, but failed, owing to the seed being eaten before ripe. I have surrounded them with glass stuck in the soil, and standing about 8 inches high and 6 inches or 8 inches from the plants, of course leaving the top uncovered, thinking that might prevent them getting at the seed, but am doubtful.

—H. REYNOLDS, *Didlington Hall, Norfolk.*

STOVE AND GREENHOUSE.

EUCOMIS.

A CONSIDERABLE number of our favourite garden plants owe their popularity to a bold and healthy appearance rather than to any particular beauty of leaf or flower, and of such plants are the *Eucomis*. They are as easily grown as Horseradish, and they never look unsightly, pushing up their bold, broad rich green leaves in the spring, these being followed in autumn by stout erect spikes like those of glorified Hyacinths, crowded with star-shaped greenish flowers and crowned with a little tuft of leaves like the Crown Imperial. They scarcely change from this till the frost comes and cuts them down to the ground, leaving their large bulbs safe enough below to repeat the performance in the following year. Once established in a wet border with a south aspect, preferably against a wall; they will remain till doomsday, unless someone digs them up and destroys them because they are so ridiculously easy to grow. There is at Kew a border full of them, which has been a crowd of leaves and spikes annually for the last ten years. But good-natured and handsome though these plants are, they are not as much grown as they deserve to be even by lovers of out-of-the-common hardy plants. They are also worth a place in the conservatory, growing well and flowering freely when planted in pots, as is shown by the accompanying woodcut, representing a well grown plant of *E. punctata*, the commonest species. This has been cultivated as a greenhouse plant since 1760, when it was grown by Philip Miller at Chelsea. In 1806 it was described as "a common greenhouse plant of most easy culture." Its leaves are about 2 feet long, thickly spotted with dark purple, and its flowers, which are green stars with pea-shaped purple ovaries in the centre, are borne on purple-spotted spikes about 8 inches high.

E. BEGIA has shorter, broader leaves of a paler green and has no purple spots. The flower-spike is less than a foot high, and the flowers are pale green with a white margin. It was introduced from the Cape by Masson in 1774 and is in cultivation still.

E. UNULATA is a common plant in S. Africa, where the natives call it "Makanda ka insele" or frogs' eggs, and find some medicinal property in its leaves. It has wavy leaves a foot long and from 1 inch to 3 inches wide, green, not spotted, the scape also green, the flowers, which are very numerous, being green too. It was grown at Kew a hundred years ago and is there still.

E. NANA has leaves a foot long by 3 inches broad, toothed along the margins, green, unspotted. The spike is a foot high and thickly clothed with green flowers on the upper half. This species is another old garden plant.

We now come to recent introductions, of which the best is

E. BICOLOR, which was first flowered in 1878 by Messrs. Veitch, who obtained it from its discoverer, Mr. C. Mudd, who found it in Natal. It flowers at Kew every year. In this species the leaves are each 1 foot long by 4 inches wide, green, unspotted, with a crisped margin. The spike is 1 foot or more high, stout, the upper half clothed with flowers which are greenish white, with a distinct purple margin. I call this a really ornamental plant, well worth a place in the most select collection of greenhouse bulbs.

E. AMARYLLIDIFOLIA was first flowered at Kew in 1878, having been received from Cape Town. It is like *E. undulata*, but has narrower leaves, with plain edges, and a subsopate inflorescence unspotted, the flowers green with a yellow ovary.

E. ZAMBESICA was introduced from Lake Nyassa and flowered by Sir Charles Strickland in 1883. Its leaves are 18 inches long by 1½ inches wide, and the scape is a foot high. The whole plant, flowers and all, is entirely light green.

E. PALLIDIFLORA was introduced to Kew from S.E. Africa in 1880 under the name of *E. corifolia*. It is remarkable for the size of its leaves, which are each 2 feet long and 5 inches wide, green on both sides, unspotted, not wavy along the margins. The flower-spike is 2 feet high, very stout, the upper half crowded with flowers, which are greenish.



Eucomis punctata. From a photograph sent by Miss K. Wilkinson, Sevenoaks.

white. This species was flowered finely by Mr. Gumbleton in 1887.

All the species have a tuft of leaves on the top of the flower-spike. I have seen a dried specimen of an unnamed *Eucomis*, which was collected by Mr. Bolus on the Currie Mountain, in Griqualand West, at an altitude of 5200 feet, which has bright purple flowers. This plant is well worth introducing. The Dutch nurserymen call the *Eucomis* "Pine-apple Flowers."

W. W.

Fritillaria aurea.—We noticed recently several plants of this Fritillary in bloom in a warm frame in the Royal Horticultural Society's gardens at Chiswick. It would look well mixed with Snow-

drops and other early-blooming bulbs in the greenhouse, although there is a distinct charm in the large flowers, nodding and yellow, freely spotted with brown. It is one of the most pleasing of the genus and hardy, coming from Silesia.

FLOWERS AT SWANLEY.

THOSE who wish to see florists' flowers of many kinds should visit the nursery of Messrs. H. Cannell and Sons at Swanley at this season of the year, when the Chinese Primulas and Cinerarias in particular are in full beauty. It is always easy to make comparisons, but it is not unreasonable to say that these two great classes are represented in their finest phase, and the many houses filled with the best varieties both at Swanley and Eynsford, a few miles further into Kent, are a mass of colour, a witness to the great strides made by the hybridist within recent years with these popular greenhouse plants.

CHINESE PRIMULAS.

The Chinese Primula is at its best, and those interested in hybridisation will see the advance shown by the new varieties over older acquisitions that in their time were considered perfection, but now surpassed by later kinds. Each variety is well represented, and one can get a good idea of its characteristics. Several years ago—about ten we should think—a kind named *The Queen* was shown in the old council room of the Royal Horticultural Society at South Kensington, and this was then considered a flower of much beauty, excellent in form, and delicate colour, white, touched with rose, the foliage of pleasing bright green shade. But this variety has been now quite surpassed by such acquisitions as *Eynsford White*, which may be said to represent a splendid type of Chinese Primula. The habit of the plant is compact, robust, the foliage of a fine green colour, and the large, well-shaped flowers carried in a dense truss, standing well up from the base of vigorous leafage. We get in such a beautiful type all the good qualities of this greenhouse favourite. In the raising of such types, *The Queen* variety has played a part, and an improvement may be anticipated even from varieties of the character of *Eynsford White*. It is unwise to say when the striving after still further perfection will cease. The flower of this latest novelty is white, beautifully fimbriated, broad and handsome, robust without a trace of coarseness. The list of fine varieties is not long, but each kind possesses great merit. *Emperor Improved* is exceptionally free, producing in abundance the bright salmon-red flowers, and we get in the variety *Kentish Red* a brilliant reddish crimson colour, peculiarly brilliant when lit up by an early spring sun. Quite different, of a tender shade of colour, is *Cannell's Pink*, a lovely thing, the broad, bold fimbriated flower opening white, but passing with age to a delightful rosy pink shade, and carried with remarkable freedom. But if the plants of each kind seem determined to bloom themselves almost to death, there is nothing ragged about them. The trusses are even and the rows of plants most regular, absolutely true to the proper character. We admire *White Perfection*, a strong growing plant, the flowers white with a yellow eye, and in fine contrast to the deep green leafage. *Her Majesty* is a new Fern-leaved variety, remarkably compact, the foliage of a very dark green colour, but showing up to perfection the white flowers, which are borne in a dense, even truss—a model of symmetry. One must not grumble at the floral aspect of the Chinese Primula. Remember that it is pure'y a florist's

flower, and is being moulded by the hand of the hybridist into a certain form, which he is endeavouring to reproduce as faithfully as possible. One sees shades of many colours in such a collection as that at Swanley, the variety *Duchess of Fife* being of a lilac tone and the fimbriated petals edged with a darker tint, whilst the leafage is very dark green. *Kentish Purple* is, as its name suggests, of a purplish shade, but we do not care for this so much as a kind named *Future Queen*, which is a new and lovely flower, testifying to the excellent results achieved by the *Primula* raiser. It is a seedling from *Her Majesty* and *The Queen*, and belongs to the *Fern-leaved* section. The growth of the plant is compact, the foliage dark green, and the finely imbricated flowers are pure white with a greenish yellow eye. It is one of the gems of this collection, and another treasure is a new *Fern-leaved* variety named *Pink Queen*, the leaves of a brighter green than usual, a beautiful set off to the bold, rich pink flowers. One sees in all these novelties strict adherence to a certain type, each kind possessing a compact vigorous habit, strong sturdy leafage, and bold, even trusses of flowers. The variety *Princess Beatrice* has its bold, faultlessly-shaped flowers of a lilac-pink colour, and both *Cannell's Favourite*, crimson-purple, and *Improvement*, which is an advance upon the popular *Chiswick Red*, are deserving of note. The hybridist is always advancing, and the latest acquirement is one known as *Cannell's White*, which has all the attributes of the best type as regards habit and leafage, but the flowers are large, splendidly fimbriated, pure white, the eye greenish yellow, and the leaves dark green. We think that it even surpasses *Eynsford White*.

The Chinese *Primula* of to-day is decidedly formal, but those who do not care for formal things will find a plant in the Swanley Nurseries that will please them, and, in truth, everyone who loves a flower. It is evidently one of the old types, the forerunners of the present race of single Chinese *Primulas*, and stands in similar relation to the ordinary form as the single *Dahlia* does to the double show kinds. This novelty, for we may call it so, is named *The Lady*, and several plants are in full bloom. It is the essence of grace, the leaves comparatively few, but the slender crimson-chocolate spikes of flower rise in profusion, the white flowers appearing in whorls or tiers to a height of 2 feet. On one specimen we counted seven spikes, the average being about six, and this result is obtained in 5-inch pots, those in pots a size larger carrying as many as ten of their graceful flower-spikes. It is a delightful variety for cutting or for the adornment of the dining-table, an absolutely distinct, free and charming flower, without a vestige of formality. We hope that such a *Primula* will be largely cultivated in all gardens for decoration. We may mention that the Swanley collection possesses its blue variety, and a bright, distinct and pleasing flower is *Swanley Blue*, which, if not exactly a true blue, is not of a dingy purple tone, displeasing and essentially crude.

It is in the single-flowered section that one may see the work of the raiser plainly indicated, as the double varieties have not shown the same rapid march forward. But it must be an exceptional variety to eclipse in beauty *Marchioness of Exeter*, the double crimson-flowered *rubra grandiflora*, *atro-rosea plena*, *alba plena fimbriata*, fringed white, and the old double white that provides much bloom for cutting. Even in the face of all the beautiful novelties in Chinese *Primulas* of recent years this fine flower holds its ground, and is likely to continue the most useful of varieties. It is easy to grow, flowers freely over a long season, and the individual flowers are pure white and perfectly double, without a trace of lumpiness. These few notes on the Chinese *Primulas* at Swanley show that Mr. Cannell does not rest content with a certain standard of excellence. He is ever going ahead, improving the plant in habit, in leafage, or in the expression of the flower. We hope that he will develop the type called *The Lady*, and already described. It is a distinct relief from the ordinary varieties, and the possible forerunner of another class, charming for its freedom and grace.

CINERARIAS.

The *Cinerarias* in the Swanley Nurseries will be in a few days a brilliant picture of colour. It is a remarkable race that fills several of the large plant houses, the plants of exceptional habit, dwarf, compact, and possessed of fine leafage, and just above this leafy base is the broad dense head of varied coloured flowers, each bloom a model in form, and if there is a difference in size in the many varieties, one always sees the same firm robust segments just touching one another to compose a regular circle of florets. March Past, raised many years ago, was a distinct advance upon all existing kinds, but even this famous *Cineraria* is being left behind, although at the time considered the acme of perfection in form. The colour of the flowers, however—a warm crimson-purple, velvety, and intensely rich—will long retain it in a good position. Every plant has similar habit, dense and without any approach to legginess characteristic of the *Cineraria* in its early days. Amongst the finest varieties in the collection are *Baron Schroeder*, the broad overlapping petals of splendid substance, the colour magenta, and in the centre there is a distinct white ring; *Lady Rosebery*, crimson-lake, white centre; *E. T. Cook*, intense violet-purple, a thin central ring of brilliant red setting off this superb shade; *Mechanical*, intense magenta, the flower of exceptionally fine form; *Mr. Midson*, purple, thin central line of white in contrast; *Mr. Cullingford*, almost an intense scarlet, perfectly self, and very effective; and *Wm. Roupell*, rich magenta, with a suspicion of crimson in the flower. The colours are always good, neither washy nor common, and in the case of self varieties of superb depth. *Crimson Velvet* is of this character, the finely formed flower of quite a crimson tone; and *E. J. Dowling* is dark blue, the flowers measuring nearly 4 inches across, each petal about three quarters of an inch in breadth; *Snowdrift*, white with dark centre; *Mrs. Tucker*, rose-pink, shaded with lilac; *Miss Cooper*, indigo-blue, with a ring of white in the centre, and *Mrs. Alexander*, silvery pink. It will serve no useful purpose, however, to give a further list of names. The finest have been indicated, and the same splendid character pervades the whole race. A large number of seedlings are coming into bloom, and a few that we noted are a witness to the ever marching forward in all that concerns the *Cineraria* as well as the Chinese *Primula*; so also in regard to the *Cineraria* we have a set off from the characteristic formality of the florists' race in *C. cruenta*, which is a charmingly free and graceful flower, brought prominently into notice by Mr. Cannell, who during many years past has shown it largely at exhibitions. It is a plant that one might grow in quantity for the greenhouse, its flowers bright in colour and produced in profusion. The double *Cinerarias* have never apparently received the same amount of public attention as the single class, but they have been brought to great perfection, the flowers perfectly double, and showing a great range of colour, from white to intense indigo-blue. We get the same bushy habit and regular head of flowers, dense and compact, absolutely formal, yet in a sense distinctly pleasing to the eye. A few of the rosette-shaped blooms would be of service for cutting for button-holes, as they are neat and not too bold for such a purpose. Six of the finest double kinds are *Advance*, well named, the flowers, violet-blue, borne in compact heads; *Aspasia*, intense blue, a very charming variety; *Fairy Queen*, white, tipped with rose-lilac; *Mrs. Midson*, very delicate lilac-rose, the florets white at the base; *Milton*, intense blue, outer surface of the florets white; and *Gem*, lilac and pink. A visit to the Swanley nurseries in *Primula* and *Cineraria* time is well repaid. When tired of the flaming masses of these flowers one may go into the many other houses, some filled with *Violets*, others with *Cactuses*, and not a few with zonal *Pelargoniums*. It is a nursery of flowers, bright, instructive, and interesting.

A beautiful *Tillandsia* in flower now in the stove at Kew is *T. microphylla*. It is of small

growth, dwarf, and grown in a basket, but the whole plant is of interesting character. It is quite a gem amongst *Tillandsias*, the flowers of the richest blue and the calyx pink. One wishes that the *Tillandsias* and allied plants were more thought of in English gardens, but they are seldom seen either well represented or properly grown.

Grape Hyacinths as pot plants.—We were in a garden recently where the familiar *Muscari botryoides* and the variety *carnosum* were used well as pot plants and in full flower at the time of our visit. About six bulbs, the number depending upon their size, were used in each pot, and the large clusters of flowers, so to speak, made a distinct effect, a relief from the usual run of things seen in the greenhouse at this season of the year. Their culture is very simple, potting up the bulbs in the autumn in ordinary soil and bringing them on into flower in a little heat. There are several varieties of *M. botryoides*, as *carnosum*, white with a touch of rose in the flowers, almost imperceptible; *album*, pure white; *cœruleum*, sky-blue, and *pallidum*, of a paler shade, but the type is as valuable and attractive as any.

Begonia brasiliana is a strikingly handsome species, of which a specimen may be seen in the stove at Kew. All interested in winter-flowering *Begonias* would rejoice to add this fine kind to their collection. The growth is tall and robust, the leaves large and of the richest green colour, whilst bold flower-heads are borne in profusion, each crowded with small creamy white blooms. It is a plant well worthy of note, and to get the finest results it is better not to confine it to a pot. We have never seen a finer specimen than the one at Kew, spreading about freely and providing great quantities of the large clusters of bloom. The winter-flowering class of *Begonia* is much neglected, but there are many fine kinds both as regards leafage and blossom.

WINTER-FLOWERING BEGONIAS.

AN interesting feature in the nursery of Messrs. Cannell and Sons at Swanley is a house of winter-flowering *Begonias*, which are grown largely and well. It is satisfactory to find such interest manifested in this class, which contains many beautiful things too little seen in English gardens. A noteworthy kind at present in bloom is *Gloire de Sceaux*, which has already been noted in the pages of THE GARDEN. Its dark bronze-chocolate leafage against the taller pink coloured flowers is in fine contrast. Another very useful variety is *President Boureuilles*, a strong-growing plant, the leafage of a rich dark colour and the flowers pink. One gets great variety in even a small collection both as regards colouring in the flowers and also in the habit of the plants. *Odoratissima* is of note for its sweet fragrance, like a bunch of *Primroses*, and there is distinct beauty in the pendent panicles of cheerful rosy flowers. A well-grown plant is very charming, and should be seen in every greenhouse or intermediate house. Even if a collection were grown there would be no sameness of character between the several forms. One of the finest of all is named *sempervirens gigantea rosea*, one of *M. Lemoine's* triumphs in this class. The flowers are of a bright rose-red colour and in excellent contrast to the light green leaves. To ensure bushy examples, the shoots must be stopped early; otherwise the plants will get leggy and unsightly. Without desiring to make a mere catalogue of names, we must mention *Carrieri*, conspicuous for its remarkably compact growth, the flowers being borne freely throughout the winter months. They are white, produced with great freedom, and, although small, make up for this by their quantity. With the most ordinary treatment good results may be obtained, and it is therefore of special value to the amateur who wishes for bright effects without much expense either in labour or money. *Nitida*, pink, and the variety *alba*, which has white flowers, deserve mention, and a plant of compact habit is *Bijou de Gand*, conspicuous for its light green leaves, set off by a great profusion of delicate pink flowers. Paul

Bruant has a very elegant habit, and the soft pink flowers are pleasing either on the plant or for cutting. *Hybrida Wellsiana*, *Knowsleyana*, *manicata*, and others well known are all of value. Delightful groups may be formed in the plant house with such kinds as *Carrieri* or *nitida*, as the plants lend themselves well for this purpose. The winter-flowering *Begonias* are, as a rule, very easily grown and propagated. No cultural difficulties are in the way of their more extensive use, and a few of the finer kinds give pleasure by their profusion of bloom through the dark months of the year.

KITCHEN GARDEN.

CELERY THAT WILL KEEP.

THOSE in charge of gardens connected with large or moderately large establishments usually endeavour to have Celery fit for the table from September till April or May, but in very many other cases the greatest attention is paid to the early crops and not much heed taken of the later ones. Especially is this the case with amateurs, cottagers, and market gardeners on a small scale. At the present time, and I may safely assert since midwinter, very little Celery could be found in the great majority of gardens, large or small, and none at all in the green-grocers' shops or on the stalls in provincial market places. It is true last January was an unusually trying month for Celery and green vegetables generally, very few of which were in a condition to withstand such exceptionally severe and long-sustained frosts; but it is very much the same in milder winters, late Celery nearly always being scarce. This state of affairs ought to be remedied. I hold that half of the early Celery grown and apparently so much prized is really unfit to eat; whereas properly grown late Celery is much more crisp, nutty in flavour, and digestible. It may be that previous experience in the way of producing really good late Celery has ended in failure, but the question is, were those attempts as a rule conducted on lines best calculated to end in success? I think not. For instance, it ought not to be expected that the smallest and most neglected of the plants left over when the earliest batches were pricked out would keep—that is to say, fail to run to seed prematurely—much longer than the earliest got out rows, nor ought anyone to reasonably expect good late Celery when the plants are only half grown and only partially moulded up. It is the early sown, much-coddled Celery that is the first to bolt, and only a comparatively small number of plants of this should be grown. In small gardens one good row of early Celery instead of two or three should suffice, and this would give better opportunities for growing more late rows. Any raised in February might be termed early, the second week in March being quite soon enough to sow seed for the main crop, while if Celery is wanted long after midwinter, then from the end of March to the middle of April is a good time to sow the seed.

Where so many err is in raising their plants very thickly in a strong dry heat. There is no sense whatever in this practice. It may be necessary to sow for a first crop in a forcing house, but a gentle hotbed in a pit or surmounted by a frame is the best place in which to raise the main and late crop plants. Not being raised thickly nor unduly coddled, a capital lot of sturdy little plants results, these receiving little or no check when pricked out, and if they are got into the trenches before becoming drawn and weakly, they will neither flag badly nor stand still long after their final re-

moval. In far too many instances professional gardeners are disposed to rely on their neighbours for a patch of seedlings, especially if their own first or second sowings have not been quite a success, and there are times when this help is to be appreciated. More often than not, however, these plants have been standing very thickly in the boxes or pans, as the case may be, for several weeks, and are very slow in recovering from the check given them, so that it would have paid far better in the end to have sown more seed directly it was seen the first sowing had failed. Amateurs not unfrequently purchase plants ready for the trenches from the nearest seedsman or the open markets, and seeing that these are usually raised early, prepared thickly, and moved with little or no soil about the roots, there need be little wonder that these rarely do well afterwards and keep badly in any case. A pinch of seed sown now on the surface of a pan of well-moistened fine soil, very lightly covered with fine soil, and placed in a frame over a mild hotbed, would give a number of early plants, and a later batch could either be raised in a greenhouse, frame, or handlight. These duly pricked out in a shallow bed of rich soil on a hard bottom would eventually surpass anything that could be either begged or bought, moving to the trenches with a good square of soil about the roots and not flagging in the least.

Not a little depends in all cases upon the selection of varieties. There has of late years been a marked advance made with white Celery, it being now possible to grow good solid sticks, and which keep fairly well on most soils. All the same, I would not grow or advise others to grow these very extensively. They are certainly the earliest to attain a presentable or eatable state, and also the first to either bolt or collapse during a severe frost. Successional varieties, including Veitch's Early Rose, Sulham Prize, Cole's Defiance, and Ivory's Nonsuch Pink, are to be depended upon nearly or quite up to midwinter, but seldom after, while the popular Major Clarke's Solid Red, or the form that much resembles it, Leicester Red, and Incomparable Crimson will keep much later if well protected from frost. Failing this protection, taller growing sorts ought to be preferred for the late crops. This winter the dwarf varieties not protected are killed to the roots, but not so well-grown taller kinds. Of the latter I prefer Standard-bearer, and previous to the introduction of that excellent variety I grew Williams' Matchless the most extensively. The only objection that can reasonably be urged against these tall varieties is the fact of their requiring more room. Lately a visiting gardener remarked, "Oh, you have a good bit of late Celery left," and added that his was all destroyed by the frost, this having gone clean through the ridges. I asked him why he did not grow a tall variety and mould up heavily, and the reply was that he could not afford the room. Tall Celery requires to be moulded up to its full height, only the tips of the leaves peeping out, and seeing also that on heavy soils any that is to keep well ought to be planted in shallow trenches, it follows that these latter must be not less than 4 feet apart. I hold, however, that it pays better in the long run to plant three rows of tall late Celery in trenches 4 feet apart than to grow four rows of dwarf varieties a foot or so nearer together. The spaces between the more widely disposed trenches can always be profitably utilised for the production of salading, late dwarf Peas, and kidney Beans, abundance of soil for banking up around the Celery being available as re-

quired. Single rows of plants about 9 inches apart in a trench are also to be preferred to double rows. A few more plants may be grown by adopting the latter plan, but the best produce is usually had from the single lines, and these can also be much more expeditiously and the most effectively moulded up.

A GROWER.

THE CULTURE OF MUSHROOMS.

MUSHROOMS are grown in beds in various ways, but chiefly after the method which is commonly employed in the neighbourhood of Paris. Two main points must be borne in mind, viz.: 1, the preparation of the manure of which the beds are to be made, and 2, the making and treatment of the beds.

On the preparation of the manure the success of the beds entirely depends. It is the most important point, but is generally not sufficiently attended to, partly because this preliminary work demands some special care, and partly because some people are not sufficiently awake to its utility. Seeing Mushrooms sometimes growing on spent hot-beds or on manure-heaps in gardens, in cellars, or in places where a little Mushroom spawn may have chanced to fall, they jump to the conclusion that it is quite unnecessary to take so much pains in the preparation of the manure which is intended for Mushroom beds. This is a serious mistake and the frequent cause of many dead failures, for although Mushrooms may sometimes chance to grow spontaneously or under a careless mode of culture, there is no certainty that they will be produced in Mushroom beds unless the manure which composes these has been carefully prepared.

Mushroom beds are chiefly made up in spring, horse or mule manure a month to six weeks old being used for the purpose. The manure of entire horses is the best, according to M. Vilmorin's experience. A preference is also given to the manure of well-fed draught horses above that which is obtained from carriage or saddle horses, this being not sufficiently impregnated with urine. The manure, having been deposited on a firm and very level spot, is then forked over so as to separate any green stuff, long dry straws, hair, rags, and other foreign matters that may be in it, and while this process is going on, the separated manure is at the same time spread out in layers one upon another so as to form a rectangular heap from 2 feet to over 3 feet high, according to the quantity of manure at disposal. Every layer is beaten down with the back of the fork, and when the heap is made up to its full height, the workman mounts upon it and treads it down well, after which he waters it copiously and then treads it down again.

The heap is then left alone for eight to ten days, until a white mouldiness makes its appearance on the surface, when the fork is again taken in hand and the heap is made up afresh on the ground adjoining, and, as before, layer after layer, care being taken to place in the centre the strawy manure which was previously at the outside, in order to expedite its decomposition.

The heap is again left to itself for eight to ten days, after which the entire mass of manure should have become pliable and unctuous, free from any strong odour, of a bluish-white colour at the centre, neither too dry nor too moist—in the condition, in fact, in which it is fit for making up into Mushroom beds. The exact degree of ripeness can only be ascertained by experience. The manure should have the colour of tobacco and be very soft in texture; when squeezed in the hand it should give out no water, but should yield an unctuous or greasy exudation, being, so to say, thoroughly cooked in every part. If too dry, the heap will have to be made over again, adding a little more manure to it and moistening it slightly. Too great a degree of moisture would be equally disastrous.

Having brought the manure to a proper condition, we now proceed to make the Mushroom bed, taking the manure in small forkfuls and spreading it on the ground in a layer 2 feet or over in width, pressing it down slightly at the same time. Other

layers are successively spread in the same manner until the height of the bed is equal to its width at the base, but the width of each layer is gradually diminished upwards, and the bed is narrowest at the top. It is then beaten stoutly with the back of a shovel so that the manure may be well compressed into a compact bed. The length of the bed will of course depend upon the quantity of manure at disposal.

When the bed has been thus made it is dressed, that is to say, all protruding straws, &c., are removed from it, after which it is again beaten down with the back of a shovel and then covered with an even layer, 2 inches to 4 inches deep, of coarse strawy manure or coarse soft litter, which is termed the "chemise."

The bed is now left to itself for some days, but should the occasion arise, especially in summer, it should be slightly watered, the "chemise" or covering of litter having been previously removed for that purpose. The fermentation of the manure then revives, and in from four to eight days' time, when the bed has lost its fiery heat, the temperature at the centre ranging from 78° to 83° Fahr., it is ready for inserting the spawn. In doing this a line is drawn along both sides of the bed at a distance of 2 inches from the ground, and in this line holes are made three or four fingers wide and from 4 inches to 8 inches apart from one another. In each of these holes a piece of Mushroom spawn of the same dimensions is inserted and carefully covered with the manure which was taken out in making the hole. At about 6 inches above this line of holes a second line is made and spawned in the same manner, the holes in the second line being placed alternately with those in the first. After this the "chemise" or covering of litter is replaced.

Ten or twelve days after spawning the bed is examined, the bottom part of the covering being lifted for that purpose. If any white threads are perceived in the places where the spawn was inserted, this is an indication that the spawn has "taken" and that all is going on well. If, however, there is no such indication of the spawn having taken, fresh spawn must be inserted. In a short time the spawn, when it has taken, spreads and runs through the bed up to the top, and when this stage is reached it is time for earthing the bed over. Previously to doing so the bed is well pressed down all over with the hands and slightly watered, after which a layer, 2 inches or more deep, of compost and good soil is placed over the entire surface of the bed with a suitable flat shovel. The "chemise" or covering of coarse litter is then replaced.

Fifteen to twenty days after this the bed is examined, lifting the bottom part of the covering as before and if any white threads and Mushroom-beads are visible it will not be long before the Mushrooms will be fit to gather, but generally this does not take place until about forty days after the earthing over was done.

Mushroom beds may be arranged in various ways. They may be either stationary or portable, or leaning against a wall and placed over one another on shelves in a stable. They may also be made in tubs, or in a conical shape on the ground.

Mushrooms are gathered when they have grown to the size of a pigeon's egg, or, at most, when they are as large as a hen's egg. When gathering them care should be taken to fill up the holes from which they are removed with soil, and also to replace the covering of coarse litter or "chemise." A gathering is made every second day and the bed may continue in bearing for two or three months.

When the season turns out rather wet, the too damp covering of litter must be replaced from time to time as required by a dry one; but, on the other hand, should the season prove too dry, the covering must be moistened from time to time from a rosed watering-can.

Mushroom beds are made in cellars in the same manner and with similar materials as those in the open air, except that the "chemise" or covering of litter is not so requisite in such a dark, close place, where the beds will sometimes continue to yield for four or five months. It is obvious that demi-beds, or half-beds, can be made up against

the walls. The chief point in growing Mushrooms in cellars is to avoid currents of air by keeping the doors and all vent-holes closed; then, if the preparation of the manure has been duly attended to, success will be certain.

A word in conclusion on the preparation of Mushroom spawn. "When a Mushroom bed shows that it is producing the white threads and Mushroom-beads," says M. Vilmorin, "this bed is pulled to pieces and all the parts of it which are found to be well impregnated with spawn are picked out, laid in thin layers, and dried in a current of air in a dark place. This forms the Mushroom spawn of commerce. The bed from which it is taken must be perfectly sound and free from disease of any kind, and the spawn is not offered for sale until trial of it has been made, by actually growing it, as to whether it is of good, vigorous, and productive quality." Such is the way in which Mushroom spawn is manufactured by the horticultural firms, but gardeners sometimes use the spawn they find in spent hot-beds, on which they cannot always depend, and sometimes they utilise these spent hot-beds for making fresh spawn, which is a better plan. In doing this, a trench 2 feet or over in depth is opened at the bottom of a north wall in which are placed bricks or pieces of old spawn, and the trench is then filled up to a height of ten inches or twelve inches with manure which has been prepared in the same way as for Mushroom beds. This is then well trodden down, after which the trench is quite filled up with soil, which is also well trodden down. In less than a month the manure will have become converted into Mushroom spawn, which is cut into bricks 4 inches thick. These bricks are then dried in a loft or a garret, where they will keep good for four or five years.

As Mushrooms, like other plants, are liable to degenerate into inferior strains, it can hardly be disputed that it is the wisest plan to obtain one's fresh supplies of spawn from a reliable source.—*Rene Horticult.*

Early Rhubarb.—There is profit in outdoor early Rhubarb if you start with the right variety. To succeed, you must have colour and quality combined with extra earliness. A great many people do not know the taste of really good Rhubarb. Our first pulling is altogether different to the coarser, more acid Victoria and other late kinds, sugar being scarcely required with it. I do not find Rhubarb very particular as to soil; the growth is satisfactory with only one foot of soil on solid rock, provided plenty of manure in the shape of mulching is applied during spring. Superphosphate has a wonderful effect on the plant, increasing the yield very materially. I dig holes a foot deep, a foot wide, and a yard apart, put in a strong piece of root with two or more crowns, which should be scarcely covered, tread in firmly and mulch slightly. The second season you may take a crop. I have seen forty sticks pulled at one time from a stool planted only a few years. With the exception of cutting off the seed-stalks, let the growth alone in summer to increase the size of plant, as the first few pullings in spring are always of the most value. After applying the artificial manure in February, put on a mulch of stable manure in a ring round the stool with a handful of litter above.—E. W. B.

Early Turnips and Carrots.—At no time are Turnips more appreciated than early in the season. These may be had much sooner if sown on a slight bottom heat, and for this purpose leaves and litter answer admirably, as the leaves retain the heat. If frames are not to be had, various means may be adopted to secure a few roots, as quantity is not required, merely sufficient to last till those sown in the open come in. By digging out a couple of feet of soil and placing the heating material in the hollow space, using that portion of the soil dug out to form a wall or bank round the sides and ends, the heat will be retained much longer than when fully exposed. Sow thinly on the surface of the bed after a few inches of soil have been placed over the heating material, covering over slightly and protecting from severe

weather. The best Turnip I have used for early sowing is Extra Early Milan. It is of very quick growth with pure white flesh and short top. This I have found come to maturity ten days to a fortnight earlier than any other. It is not a long keeper, but this is not necessary with an early variety, especially when sown under glass or on a hotbed. If sashes or frames cannot be afforded to cover the bed, boards or mats may be used. A covering of short litter or Bracken placed over the surface and taken off daily in fine weather will greatly assist in forwarding the crop. The same cultural notes apply to Carrots as to Turnips—in both cases a mild heat with free admission of light and air. Frames are best if obtainable, but the crop may be much advanced by treating as advised for Turnips. For early sowing I like the French Forcing and Early Nantes.—G. WYTHES.

A succession of early Cauliflowers.—A. Young's article on this subject in THE GARDEN (pp. 103, 104) is very important. Of late years, however, I have given up the wintering of Cauliflowers in handlights and cold frames during winter. Unless in Cornwall or other genial counties, I have come to the conclusion that the practice does not pay for the extra trouble. With such varieties as the Snowball and other dwarf forcing varieties, Cauliflowers may be had as early and with less trouble from spring-sown as from autumn-sown seeds, and then there are less labour and less risk of bolting. By sowing at the turn of the year and advancing slowly without check the percentage of bolters is reduced to a minimum. And thus the difficulty of having too many early Cauliflowers come in at once with a rush is easily met by sowing only a few seeds of Snowflake or Snowball at one time, while a similar difficulty is averted later on by sowing Autumn Giant in succession instead of so much at once.—CALEDONICUS.

PREPARATION OF GROUND FOR LATE PEAS.

IN many gardens late Peas do not give so good a return as desired. This is owing to a variety of circumstances; poorness of soil, want of moisture, close cropping—that is, not allowing space between the rows—are the principal evils. It is important to prepare suitable ground for late Peas, and as at this date the ground for various crops is being got ready, it is important to give this crop liberal treatment and to vary the system of culture usually adopted for early or midseason Peas. There is no better system than using trenches for the late supply. These give a larger quantity of food for the roots and provide a ready means of supplying moisture in dry seasons. On light soils feeding is imperative. But my note concerns the crop that should come in during August or September; indeed, often earlier than August I have seen this crop fail from mildew and drought, so that by preparing the land now it may be got into good condition and will be ready at short notice. Where ground can be spared, 15 feet to 20 feet between the rows is none too much; in small gardens, 12 feet to 15 feet will perhaps be more suitable. In preparing the ground for this crop much time will be saved by digging trenches at the same time as the other ground is dug. The trenches need not be deep. Nine inches to 12 inches wide will give sufficient room, taking out the soil spade deep, and then placing in the trench from 4 inches to 6 inches of decayed manure. This manure should then be forked in and a covering of finer soil from that thrown out placed on the surface; this will allow of another covering of soil after sowing the seed, leaving a cavity or space for moisture along the drill or trench. The one difficulty of this sowing in trenches is that in wet seasons the Peas may run too high. This to some extent may be avoided by topping; indeed, the latter may always be practised to advantage, but in light land the haulm is rarely too strong even in wet weather. In dry seasons much assistance will be afforded the crop by mulching with short litter along the sides of the rows. I have used spent Mushroom manure for this purpose to much advantage. As

to varieties, I need not enter into the subject; it is next to impossible to recommend any, as in one locality some varieties may succeed where others in another will fail. I have my own special varieties. These do well on our light soil, but may not succeed on clay or heavy loam. Whatever late variety is sown should be sown thinly. At the time the late Peas are sown there is less fear of any going decayed, as they germinate freely at that season. Where the soil is of a heavy clayey nature much good will be done by this early preparation of trenches, as the weather will pulverise the soil and get it into condition for sowing; whereas if left till required it would probably be in a lumpy state. Another advantage of early preparation is, that manure if not quite decayed will be more so by getting the moisture in the trenches, and the work done now will give much more time when every moment later on is required. If this work is delayed, other crops are frequently planted, thus crowding the late Peas into a small space. By this system of cropping and liberal supplies of water, or, what is better, some liquid manure, there will be less mildew and the crop will be better and last much longer. We often flood our rows with liquid manure and then allow the hose to run freely to each row for some time afterwards.

G. WYTHES.

NOTES FROM NORTH WALES.

SELDOM have we such a paucity of bloom in the outdoor garden in the latter end of February as is the case this year, and this in face of the fact that vegetation generally is extraordinarily forward—most Pear trees fast scaling their flower-buds, Gooseberries and Raspberries pushing into leaf, and I saw a solitary Plum tree to-day (Feb. 23) white with expanding blossom. Such precocity bodes ill for the fruit crop again this year unless colder weather quickly succeeds this unseasonable mild and humid spell. Snowdrops in the grass, on banks and under trees are of course in full bloom; so is the winter Aconite and a few Crocuses showing colour, and a few fully developed trusses of Primrose Harbinger on a warm sheltered bank are also to be seen. This certainly is a veritable gem and appropriately named, worthy of being liberally planted. On the rocks, *Hepatica triloba* is in full flower and very beautiful. *Omphalodes verna* has also a few buds open, and so has *Gentiana acaulis*; these three are very lovely thus early in the year. A sprig of Heath here and there is open. With these exceptions, the beauty of our rockeries at present is due to the varied forms and divers colours of the foliage of alpine and dwarf plants—interesting and effective.

Of shrubs we have several different kinds and species more or less in bloom, but the clumps of *Rhododendron* (of which variety as yet I have been unable to get the name) which are in full flower are by far the most effective, massive and showy, of anything in the whole of the grounds. As I have stated previously, these usually commence flowering in November, but this year none opened until the latter end of January, owing, I presume, to the cold sunless summer and autumn experienced here, which was other than conducive to the ripening of the wood and plumping up of the flower buds, and also retarded by the severe frosts which set in at Christmas. The masses of delicate pinky-white are really beautiful and arrest attention from afar. I am most anxious to obtain the correct name of this early-blooming variety, if only to more especially and directly recommend it to others interested.

Next to these in beauty, although less showy, are the *Laurustinus* and *Andromedas*, single plants of large size of the former and goodly clumps of the latter being sheets of bloom. *Pyrus japonica*, *Jasminum nudiflorum*, *Berberis Darwini*, *japonica* and *Aquifolium*, *Daphne Mezereum* and *D. laureola*, *Hamamelis arborea*, *Arbutus*, *Prunus Pissardi*, with a sprinkling of blooming shoots and buds, are about the sum total of flowering shrubs—a scanty list for the end of February, but which a little later on will be greatly added to, as numbers are on the point of opening. The phenomenal absence of cutting easterly winds so far has happily left our

coniferous trees without a seared leaf, and the charming winter tints of these are a source of great beauty, and go far to make amends for the scarcity of flowers; for, after all, what can possibly be lovelier than the varied tints of these gently wafted in the breeze and glistening in the wan sunshine, not the least attractive being aged Scotch Fir and other Pines, as well as *Abies Douglasi*, a picture in itself, not omitting the iridescent blue of such as *A. Alcoquiana*, the pale yellowish shade of *A. polita*, the silvery sheen of *Cupressus Lawsoniana glauca* and *C. L. Silver Queen*, and the more pronounced gold of *C. L. aurea*, contrasting with the bronzy and dark greens of the *Retinosporas*, the varied shades found in the feathery and graceful *Cryptomerias*, and the general prevailing greenery around. Infinite variety in foliage colour—

Again, the swelling streams careering madly down our dells and ravines, rushing and foaming over huge boulders in cataracts and waterfalls, until the water is churned to milky whiteness, hold one spell-bound in admiration; the more so, perhaps, by the thought that a little later the summer vegetation and leafage will partly conceal some of this from our view, and almost tempt one to regret that such must of necessity be. J. R.

Tan-y-bwlch, N. Wales.

TREES AND SHRUBS.

CASSIOPE FASTIGIATA.

CASSIOPE is a limited genus of ericaceous plants generally grown in gardens under the name of *Andromeda*, but now separated from that genus, which contains only one species (*A. polifolia*), a native of our own moors. They are extremely pretty plants, and should find a place in all collections of hardy flowers, the chief requisites to their successful cultivation being peaty soil well drained, as they are all extremely impatient of stagnant moisture about their roots and absolute shade from the midday sun. The best plan is to raise small mounds of peat, and plant them on the top, taking care that they do not want for water both at the roots and overhead. They are increased by division, rooting freely when pegged down. *C. fastigiata* (here figured) is decidedly the handsomest of this small group of plants, few of which are in cultivation. As an alpine species *C. fastigiata* ranks amongst the best plants we possess; it may be grown without much trouble in company with the more common *C. tetragona*, a species much inferior, though oftener met with. Its range of altitude is pretty extensive. Sir J. D. Hooker, in his "Himalayan Journals," says: "I prepared to camp on the mountain-top, a broad bare flat, elevated 13,080 feet, and fringed by a copse of Rose, Barberry, and alpine *Rhododendrons*. The Himalayan Heather, *C. fastigiata*, grew abundantly here, affording us good fuel."



Cassiope fastigiata.

ing is obtained among plants of lowlier growth, such as *Berberis japonica*, *Andromeda axillaris*, *Gaultheria procumbens*, Golden Hollies, Yews, &c., while the Gorse bushes and Hazel catkins are not to be despised, nor the many-coloured shoots of deciduous shrubs, brightest of which are the Dogwoods and Osiers.

There are, again, the trunks of the deciduous venerable trees of our woodlands; the rugged Oaks and Elms, polished and spotted Beech, Ash, and Sycamore, quaint Horse Chestnuts, silvery and bronze Birch, and many others, and on looking up to the branches and twigs we also see beauty in the fantastic contortions of the limbs and varied forms and arrangement of the branchlets, and, in our case, bold and massive rocks, some grey with Lichen, others partly Heather-clad, add still more to the magnificent scenery, and many of these reflected on the clear surface of lakes and streams still further multiply their beauties.

Laurels for north walls.—Not the least useful evergreen shrub for covering a north wall is the different forms of the Laurel. Where other subjects refuse to grow, owing to a want of light or other causes, Laurels might be tried. The best for a high wall would be the *Colchic* variety, and for a low wall the *Caucasian* or *rotundifolius*; both of these grow dense, and are well suited to this form of planting. The plants should be encouraged to grow upright at first.—S.

Weeping Willows.—Perhaps some reader will tell me why it is the Weeping Willow is so rare about London and the home counties. At one time it was not unusual to see it, but now I never do, unless I go right away from London. One misses such a very graceful and distinct tree. If it is a question of hardiness, we ought to seek other kinds of Weeping Willow, of which I am sure there are some. But the great thing would be to get hardy Willows of a weeping habit that assume at the same time the tree form. There never was a more interesting or beautiful tree

brought to our country than the Weeping Willow, and I have not seen a good specimen for some years. Can any reader who notices trees tell me if anybody has ever seen a weeping form of our white or yellow Willows, as such would be invaluable?—L. E. L., in *Field*.

Rhododendron præcox.—Anything in the nature of hardy plants which will bloom in the open air during the month of February is doubly welcome, and any shortcomings they may have as regards the colour of the flowers we may well dispense with. Blooming as the above shrub does at this season of the year it is valuable. Being of comparatively low growth, there is no fear of its overgrowing other plants of a lowly habit. I have several plants grouped together on a large and bold rocky, and at this season the flowers are very welcome.—A. Y.

A FEW GOOD CONIFERS.

ALTHOUGH the very extensive planting of many members of the conifera in response to the suddenly developed craze for this race of plants was overdone, it is a question whether the error was not a matter of injudicious quite as much as over-planting. It was not only that trees of severely symmetrical outline were planted quite independent of natural surroundings, but no calculation was often made as to what the different varieties were to be like in years to come and to what extent they were likely to be applicable to their respective sites, and so one sees occasionally a common Silver or a Picea nobilis in positions that would be more appropriately filled by a Lilac or a Laburnum, and *vice versa*. Now, although conifers are no longer planted on all occasions and sites when trees are in demand, there are times when they are in considerable request, especially as specimens in prominent positions, and the subjoined list of a few good things with a slight idea as to the height they may be expected to reach may be acceptable.

If there is one conifer better than all others as an ornamental tree, it is perhaps the Deodar Cedar. It grows fast even on poor soil, running up as straight as an arrow, is handsome in bark and foliage, and altogether makes a beautifully furnished and stately tree. I should estimate its ultimate average height in this country at 100 feet; we have several nearly 70 feet at present, and they are making clean, vigorous annual growth. Cedrus atlantica and var. glauca are neither so handsome as the Deodar, nor do they grow so kindly, nor will probably reach more than two-thirds of the height; still they make nice specimens for a medium-sized lawn. It remains to be proved whether the Deodar will with age claim comparative immunity from heavy snows and gales, and so in this matter recompense us for the loss or partial loss of so many Lebanon Cedars. I think it likely, the foliage being altogether lighter and less liable to hold the snow. Cryptomeria japonica grows very fast in a sheltered position, and with its light and graceful foliage and shapely appearance adapts itself to almost any site. It is said to attain a height of close on 150 feet in its native country (Japan), but I have seldom seen it over 60 feet in England; the leader, which is tender and has the appearance of being hardly able to bear its own weight, is invariably crippled when it rises above surrounding shelter. Taxodium or Sequoia sempervirens is an uncertain tree; here it does remarkably well, and is close on 100 feet high and well feathered to the ground, but I have seen it elsewhere the reverse of satisfactory, making little annual headway and wearing a sickly, unhealthy appearance. Turning to the Fir family, one of the handsomest of the Spruces is undoubtedly Smithiana, and Menziesi is a light and graceful tree. The latter is considerably the smaller, but neither attains any great height, nor do they appear likely to do so. They are evidently not quite at home in our soil (a very sandy loam, changing to a damp sand not far below the surface). Admirers of a more formal type of tree might give pungens glauca a trial, while the stiffest of all the Spruces is the comparatively new polita,

whose rate of progress is abnormally slow. There are not many places where the different varieties of the Silver Firs do not do well, and some of them are very handsome trees. Putting aside pectinata, naturally more adapted for outlying woods than the pleasure ground, probably the three best known members of the family are Pinsapo, cephalonica, and Nordmann's; the average height of fairly good specimens of the two former would be from 40 feet to 50 feet, the last a third higher. From a landscape standpoint Nordmann's is the best tree; it is lighter and more graceful in appearance than the two hailing respectively from Spain and Greece. Brachyphylla is a coming Silver, as open in growth and light in general appearance as any of this section. Of comparatively recent introduction, it is impossible to say what is likely to be its average height in this country. Judging from its healthy, sturdy look and the fine yearly growth made, I should say it is likely to run up to close on 100 feet. Concolor violacea is a handsome Silver on a smaller scale than brachyphylla. I have never seen any very large specimens of the two giants of this section (nobilis and grandis), but young trees planted here nine years ago are making headway at a great pace. The Hemlock Spruce was planted here largely at one time, but has not taken very kindly to our soil. It would seem to have been used as a substitute for Yew, but the result is not satisfactory. The Douglas Fir one of the best known conifers, but from its size it is suitable only for outlying parts of the pleasure ground or very bold sites.

I have done little here with any members of the Pinus family. The pleasure grounds are heavy and somewhat gloomy, with many Lebanon Cedars and Yews and a preponderance of greenery in the way of undergrowth, while long stretches of Surrey Pine woods come close up to the enclosed grounds. The planting, therefore, of more heavy trees even of the choicer Pines in the pleasure ground proper would only serve to intensify the gloom, and only copy in miniature what we get in profusion outside. Pinea, Cembra, and Pinaster are three of which there are fair specimens; the last-named has light feathery foliage, and is an open graceful tree. I have planted occasional clumps of the Corsican Pine for special purposes, and it is doing remarkably well; it is undoubtedly one of the finest of the family.

The very formal Roman Cypress was a great favourite with the planters of a past generation, and there are few old places that cannot show several specimens, but this as well as the stiffer and more severely symmetrical members of the Cupressus family as well as the upright Yew (fastigiata) very seldom find a place in the planting of to-day. Such trees were at one time always selected for churchyards or cemeteries, but modern tastes incline rather to trees of a more graceful habit, and plenty of these are to be found in the best of the Junipers and Retinosporas and one or two Thuopsis.

The Umbrella Pine is unique in appearance, but that is about all that can be said in its favour. There are very few situations where it can be advantageously used.

E. BURRELL.

Claremont.

Bamboos.—In the note on the hardy Bamboos at Kew mention was made of Phyllostachys bambusoides. I do not know from what part of the world it hailed, but when it first appeared it was thought of very doubtful hardiness, and when I soon after obtained it I was advised to plant it in the most sheltered spot at command. It turns out here to be as hardy as any of the others. It rather too much resembles B. Metake, but is less in height, and cultivators generally having the larger would not, except to form collections, care much about the lesser. All our hardy Bamboos are, compared with the great forms of B. arundinacea, mere pigmies; the largest I remember to have seen was Arundinaria falcata in the famous grounds at Coombe Royal, Kingsbridge, Devon. Many of the canes in these masses were over an inch in diameter and I should think above 20 feet high. I have since heard that they afterwards all flowered and died,

which is a bad failing with several species. Why are not some of the more robust and giant species tried in the more favoured parts of the south of England. After reading Sir Joseph Hooker's "Himalayan Journals" I do not despair of seeing such an experiment a successful consummation. He several times notices the giant Bamboos flourishing in comparatively high altitudes, and at one place, Yoksun, 5600 feet with a mean temperature of 39°, the extremes being 19·2° and 60° during his stay there—of course it was the winter—and to use his own words, "I could not but regard with surprise such half-tropical genera as perennial-leaved Vines, Saccharum, Erythrina, great Bamboos, Osbeckia, and cultivated Millet resisting such low temperatures." Some of these, he says, grow to a tremendous height, and the canes are often as big as a man's thigh. Of course we cannot hope in such a climate as ours to see the development of such proportions, yet I cannot perceive why some of these acclimatised varieties, or they may be distinct species, of great growth may not be coaxed into happy existence in some exceptionally favoured dells in this country.—J. M., Charmouth, Dorset.

I beg to thank you for naming the Bamboos sent, and also for recommending others of similar habit and merits. I find I was in error in supposing the Bamboo possessing the rambling propensities and forming such magnificent clumps to be Bambusa viridis glaucescens. It is the one you name Simoni. B. viridis glaucescens as named by you is altogether different in habit, not quite so robust, finer in all its parts, and no Rambler. B. aurea is somewhat dwarfer and very elegant. I hope soon to add the varieties you recommend.—JOHN ROBERTS.

Lonicera fragrantissima.—In this we have a fine winter-blooming wall plant. I am sending you sprays from a west wall in our garden. It has been in bloom in this aspect for the last six weeks, and promises to continue for some time longer. All who appreciate sweet-scented flowers should plant this *Lonicera*. It is a strong-growing kind and produces its blooms from the old wood.—JOHN CROOK, Forde Abbey, Chard.

DIGGING AMONG SHRUBS.

I CANNOT see that the annual digging among shrubs, which is practised in most gardens, is likely to be beneficial to them. This disturbance of the soil never occurs to trees and shrubs growing naturally; why, then, should it be necessary for them in gardens? So far from the soil becoming close and sour, the very reverse will be the case if the leaves are allowed to remain and decay. Nothing keeps the surface of the ground so free and sweet as a covering of decaying vegetation. If I could do so, I would mulch every inch of a hardy flower border with leaves in their first stages of decomposition. Coarse-habited things, such as Laurels, may not suffer from the mutilation of the roots, which must more or less take place when the spade is annually thrust deeply into the soil among them; but the majority of choice shrubs do not form roots in such abundance as to be able to lose a portion of them every winter without loss of vitality. If the truth were told, thousands of fine-flowering shrubs have their lives shortened in this way. Loosening the soil allows frost to enter it more freely, and when the roots are hard frozen, the foliage of an evergreen like Darwin's Berberis, for instance, must more acutely feel the effects of frosty, parching winds than when the roots can do their work in supplying moisture. The only objection to allowing the leaves to remain where they fall is that they are apt to get blown about on to other portions of the pleasure grounds. If they must in some way be disposed of, it is better perhaps to dig them in than to rake them off, but the digging should be done with a light hand. In raking them off the shrubs are deprived of a large amount of nourishment, the ground in time gets very poor, and choice flowering shrubs assume such a weakly condition, that they cannot form good bloom-buds. Allow the leaves to remain

in a portion of the shrubbery for several years, and you will be able to form a good idea of the way in which trees and shrubs nourish themselves. There is on St. George's Hill, Byfleet, a *Pinus insignis* which is by far the finest specimen of its kind I have ever seen. It is simply perfect in form and colour. It stands far away from the cultivated portions of the estate among deciduous trees, where it enjoys the shelter it loves and yet has ample space. Ever since the tree was planted, the soil around it has never been disturbed. The last time I saw this tree the ground beneath it was covered with fallen leaves to a depth of more than a foot. I never saw a more admirable contrast than that afforded by the fresh verdure of the living foliage of the tree with the rich tawny yellow of that which had fallen from it. Favourable surroundings have undoubtedly much to do with the exceptional beauty of this *Pinus*, but the natural deposit never removed from the time the tree was set there must have been an important factor in its well-being. J. C. B.

Magnolia stellata.—This, also called *M. Halliana*, under which name a coloured plate was given of it in *THE GARDEN* of June, 1878, is the earliest species to bloom, the flowers reminding one of those of the Yulan, but they are quite star-shaped and not so large. The petals turn back somewhat and give the flowers the appearance of a white Water Lily. Although quite hardy when planted in the open, a sheltered position away from cold winds should be selected, otherwise the flowers will get spoilt, and there are no leaves to protect them in any way, the shrub being quite deciduous. There is a variety with bluish coloured flowers introduced from Japan through Mr. Maries. We have seen this dwarf deciduous shrub made use of as a pot plant, the flowers appearing earlier than in the open. An early display of bloom may also be gained by taking up the plants when they have quite gone to rest, potting them, and placing in a greenhouse. If introduced into a house where gentle warmth is maintained the flowers will expand early in the new year. It is a fine shrub, however, for the open, and when in a good position blooms so freely, that the leafless branches are hidden beneath the mass of fragrant flowers.

Daphne Mezereum.—It seems strange that in some cottage gardens this will continue to thrive amazingly no matter what treatment it receives; whereas in other gardens it will scarcely grow at all. Two handsome bushes I have had under my notice many years flower freely annually. The manner in which these bushes were hacked about last spring after flowering surprised me not a little. Every bit of small twig and branch was ruthlessly chopped off with a billhook, but I think the plants have this year flowered more profusely than ever in spite of what I regarded as barbarous treatment. Here in this garden the soil seems so unsuited to the growth of this plant, in spite of the addition of peat and other composts, that it grows but poorly.—E. M., *Bishop's Waltham*.

CYTISUS ANDREANUS.

I READ in *THE GARDEN* of Feb. 18 (p. 138) an interesting note upon the shrub which has been named after me, *Cytisus Andreanus* or *Genista Andreana*, from my having had the good fortune to introduce it into gardens.

The author asserts that this variety can be grafted upon the common Broom, and that in this way especially it has been multiplied. This is not quite true, because the great increase of this plant has been effected by grafting it on the *Laburnum* (*Cytisus Laburnum*). Not only is the success of the grafts fully assured in this way, but it has also the advantage of showing that the *Cytisus Andreanus* can be cultivated by this method in calcareous soils, which is found to be impossible with the common Broom, which is scarcely ever found apart from granitic and clayey soils. I entirely con-

cur in the opinion of your correspondent concerning grafting close to the ground, as enabling the graft to take root if embedded in the surrounding soil, but this can only be in non-calcareous soil.

Will you allow me to add one or two suggestions to those already made:—

- (1.) I recommend the grafting of some of this shrub as standards. So grafted it speedily develops a strong head, the effect of the pendent branches of which is charming when covered with their innumerable yellow and crimson blooms.
- (2.) In park plantations, by intermingling the *Cytisus Andreanus* and the common Broom, we get spreading groups of most picturesque and graceful effect. The effect of the purple flowers backed by the golden branches of the common Broom is very fine.

Lastly, I would advise that we should not lose the seeds, but, on the contrary, sow them carefully, as good varieties may result, not perhaps in every case, but some might be as pretty as the *Cytisus Andreanus*.

In this connection I may say that I brought this plant from the west of France (Normandy), where I found it in a wild state growing in a field of Brooms in the department of Mayenne. It was figured under the name of *Genista Andreana* in the *Revue Horticole* of 1886, p. 372. I think it desirable not to forget the history of plants which have acquired a certain popularity, if only in order to prevent inexact statements as to their origin from gaining credit.

The plant in question has increased very much in cultivation since the year 1889 when I first exhibited it in Paris. In the present year it has been sold in France by tens of thousands.—EDOUARD ANDRÉ, Landscape Gardener, Editor of the *Revue Horticole*, Paris.

ORCHIDS.

ORCHIDS AT CLAPTON.

ON a recent visit to the Messrs. Low's nurseries at Clapton I noted a fine lot of the peculiar metallic-tinted *Angraecum sesquipedale*, for which this firm have long been famous. I was too late to see the fine display presented by this species, but some of its large ivory-white flowers were still in their prime. In striking contrast to the above stands the small-flowered *Angraecum citratum* with hundreds of spikes of its pale citron-coloured blooms, which will be a fortnight yet before they are at their best. Turning to the Burmese Orchids, which the Messrs. Low have long been noted for, there is *Saccolabium bellinum* in quantity, with its prettily frilled and spotted flowers. Amongst the *Dendrobiums*, the much-bearded, golden-yellow-flowered *D. Brymerianum* stands out very conspicuous; so also is the Burmese form of *D. Wardianum*, which is much stouter in growth and with larger blooms than the typical plan, which I first flowered in 1858. This plant, although much slenderer in its growth and with somewhat smaller flowers, was even more brilliant in its colouring than the majority of the varieties from Burmah, grand although these are, and I do not think there are many of Simon's Assam plant now to be found in the collections of this country. The showy *D. crassinode* was also good, several of the plants being as richly marked as the form known as *Barberianum*. *D. Findlayanum*, with its peculiar growth and large flowers, was also beautiful,

as were also the English-raised hybrids *Ainsworthi* and *Leechianum*, to which the fine flowers of *D. primulinum* afforded a nice contrast. Of white-flowered kinds, I may mention *Ceologyne cristata*, ever beautiful, and its pure white variety *hololeuca*. A very good form of *Cymbidium eburneum*, with pure white flowers, saving the yellow plates on the lip, and a beautiful dense-flowered variety of *Calanthe Regnierii*, called *nivea*, having racemes of pure white flowers, and which adds another variety to these late-flowering forms, were also noteworthy. The *Lady's Slipper* Orchids are largely grown, and amongst those in flower may be noted *C. Warnerianum*, *C. Argus*, with its beautifully spotted flowers; *C. Sedeni* and its white variety *candidulum*, *C. callosum* and *C. Boxalli*, *C. villosum*, *C. Ainsworthi*, and the beautiful plant *C. Haynaldianum*, which is almost a perpetual bloomer, for whenever I visit the establishment I mostly see this plant flowering. Amongst cool Orchids were the sweet-scented *Pilumnus nobilis*, its large white flowers stained with yellow in the lip, *Ada aurantiaca* with its conspicuous flowers, *Odontoglossum gloriosum* in many varieties, *O. Pescatorei* and *O. Rossi majus*, *O. Edwardi* and *O. triumphans*, whilst many *O. Alexandræ* were throwing up spikes, which will soon make a fine display. The brilliant flowers of *Sophranitis grandiflora* were noticeable, whilst the plants of *Vanda Amesiana* were in excellent health and flowering very freely. *Vanda Kimballiana* was looking vigorous and particularly healthy under cool treatment. *Cattleyas* were not so remarkable, except, it may be, the beautiful summer varieties of *labiata*, which will make a grand show later on. Some very good forms of *C. Trianae* were opening.

Amongst the Moth Orchids I must mention *Phalaenopsis Stuartiana*, having large mottled leaves similar to those of *P. Schilleriana* and pure white flowers, the lower half of the sepals thickly dotted with crimson on a pale lemon-yellow ground; lip white, the base of the middle lobe as well as the side lobes being marked with larger spots of the same colour. Of this there are many fine forms, including the variety *nobilis*, which has larger flowers and the spotting more pronounced. *P. Schilleriana* was represented by hundreds of spikes. Many fine varieties are amongst them, some having the sepals and petals of a deep rich rosy purple, whilst others were lighter, some flowers being destitute of the spotting usual at the base of the lip, and others having a profusion of spots. Amongst them was one variety named *vestalis*, which had pure white flowers throughout. *P. Aphrodite*, the plant introduced by the Messrs. Rolleson and named by Lindley, is largely represented. The form known as *gloriosa* and figured in *THE GARDEN*, Vol. XXXV., t. 697, is a beautiful flower, being almost like *Dayana*, but the leaves are much lighter in colour. There are also one or two plants of a very pretty form without a name at present, having the leaves similar to the typical *Aphrodite* (*amabilis*), but the pure white flowers are streaked at the base of the side lobes with bright amethyst-purple, without a tinge of the yellow which is so conspicuous in the typical plant and its varieties. There are some nice examples and varieties of two plants which are supposed to be natural hybrids between *P. Aphrodite* and *P. Schilleriana*; these are *P. leucorrhoda* and *P. casta*; the former has the leaves mottled in the way of *Schilleriana* when young, but these markings fade with age in most instances, leaving the foliage of a deep rich green; the

flowers are white, having the sepals and petals faintly tinged at the base with rose colour, the lip similar to that of *Schilleriana*, but the tendrils are more in the way of *Aphrodite*. *P. casta* in a young state has blotched and spotted leaves. These markings, however, mostly fade and die out by the time the leaf is fully grown. The flowers are large, white, the dorsal sepal faintly tinged with lilac at its base, and the lower ones flushed with pale yellow, the petals wholly white. The lip has the side lobes tinged with yellow, spotted with red at the base, and the front lobe tinged and dotted with rose on the lower edge. These *Phalenopsis* occupy two houses, and they will be gay for weeks to come.

W. HUGH GOWER.

***Lælia harpophylla*.**—A variety of this *Lælia*, as mentioned at p. 130, with flowers 4 inches across, and broad in proportion, must really be very fine. This species I have been fairly successful with, as the plants keep very healthy, and also make strong growths annually. The plants are kept at the warm end of the *Cattleya* house, where they have been for the past four years. The rooting material—the best peat-fibre with small crocks and charcoal—should be pressed into the pots very firmly. It is a mistake to allow the rooting medium to become over-dry at any time, as once let the slender pseudo-bulbs shrivel, they will rarely, if ever, regain their former vigour. I have seen it noted that *Lælia harpophylla* should be grown in the cool house, but I should not care to trust my plants to such an ordeal.—A. YOUNG.

***Cœlogyne cristata Lemoniana*.**—Amongst the different varieties of *Cœlogyne cristata*, I think after all the variety *Lemoniana* must bear the palm, the lemon stain, as "W. H. G." says, giving the flower a beautiful appearance. This may certainly be said of the other varieties of *cristata*, but the colouring of *Lemoniana* is quite distinct from that of the others. This variety may now be purchased at a reasonable rate, and so should find a place in all gardens where there is a stove or intermediate house.—A. Y.

***Cœlogyne odoratissima*.**—This is a very charming little *Cœlogyne* in bloom now in the Orchid house at Kew. It is quite a dwarf plant, growing but a few inches in height, and the sweetly-scented flowers are produced freely during the winter months. The plant is in a small pan and is covered with the flowers, which are of the purest white, except for a suffusion of yellow on the centre of the lip and three orange-coloured ridges, whilst the fragrance is deliciously sweet. It requires cool treatment, and comes from the Neigherry Hills. We have none too many Orchids that bloom in the depth of winter, so this little species should be made good note of.

***Cymbidium eburneum*.**—The large waxy flowers of this, with the lip stained with yellow, are now pushing up, and being also sweetly scented, its beauty is considerably enhanced. I have six plants, the largest now bearing a dozen flowers. Considering that it is only just over four years since this plant was a single slender growth in a 3-inch pot, it has done well. Blooming, as this species does, during the latter part of February and throughout March, it makes a pleasing feature either in an Orchid house proper or even in a fernery or intermediate house, in each of which it thrives well. The causes of failure in the cultivation of this plant are in keeping the plant in too high a temperature, and also through the potting medium not being suitable. Because a plant happens to be an Orchid, some people think that the crown of the plant must be elevated above the rim of the pot, and the potting medium must be peat and Sphagnum with pieces of crocks and charcoal intermixed. Such certainly may suit the majority, or very many Orchids, but not those of a true terrestrial habit, and to which the *Cymbidiums* belong. Our plants succeed very well at the coolest end and on the shadiest side of the *Cattleya* house, where the minimum temperature

during the winter ranges from 53° to 55°, and during very cold weather it runs down to 50°. I pot the plants every year just after blooming, as on account of the plentiful supplies of water needed whilst the plants are in full growth, the soil is apt to become sour. Even when the plants are not in active growth the soil must not be allowed to become dry, or the ends of the leaves would turn brown. During the winter even the plants are growing, if not to any extent, but even then at what may be considered the dormant season the soil must be kept nicely moist, but not over-wet. The soil for potting the plants in should consist of equal parts of good turfy loam, peat, leaf soil, decayed cow manure, and coarse sand, with pieces of charcoal. In potting place the crown of the plant below the rim of the pot, also draining well, but not too much, the depth being gauged according to the size of the pot.—A. YOUNG.

CYPRIPEDIUM SPECTABILE.

HAVING been fairly successful in the cultivation of this interesting North American Orchid, I venture to make a few remarks upon it in order that others may be enabled to grow it satisfactorily. For years I grew this plant in pots in a cold frame and generally managed to get one or two blooms every season from plants in 6-inch pots. The flowers and foliage, however, never came strong and healthy under these conditions, so I decided to set the plants out in the open and let them take their chance. I prepared a border for them about 8 feet long by 5 feet wide. On the west side of the border there is a high clipped Yew hedge, and on the east side I made a little wicker fence about 3 feet high and planted against it *Clematis Jackmanni*, which adds to the appearance of the border besides affording the necessary shade to the plants. I then removed the ordinary soil, which was of a light gravelly nature, to the depth of about 18 inches and replaced it with a mixture of loam, peat, and rotten leaf mould, mixing with the soil plenty of broken potsherds and coarse silver sand. I then turned the plants out of their pots without disturbing the ball and planted them firmly, but not deeply. When the roots had taken to the new soil I gave the border a good soaking of water. The first season I could see a great difference both in flowers and foliage, and ever since then the plants have gone on increasing in vigour, and last season I was rewarded by one of the clumps throwing up and bringing to perfection twenty-seven spikes of bloom. Treated in this way the plants give very little trouble. I give them a good soaking of water several times during the growing season, keep them free from weeds, and give the bed a good top dressing of rotten leaf mould in the spring. The plants have not been covered in any way during the past severe winter and they are now throwing up strong growths about the size of one's little finger. The present time is the best to plant them out, and now that plants can be procured at a reasonable price, anyone wishing to have a display of this lovely Orchid may do so without incurring any very great trouble or expense.

T. B. FIELD.

Stanley Hall Gardens, Bridgnorth.

Odontoglossum crispum flaveolum (*G. M. W.*).—Your flower is a very fine variety of the above, which was named some few years ago by Reichenbach. The sepals and petals are round and full, clear yellow, the lip much deeper and of a brighter yellow, having a few good-sized spots of chestnut. In answer to your question, I may say I do not think this variation in colour is due to any hybridisation in a state of nature, because the flower is quite typical in everything saving colour. It is a very pretty variety, and should be looked after.—G.

***Odontoglossum ramosissimum*.**—"H. B." sends a spray of this species for a name, saying he has had it some years, but that it has never flowered before. It is an old and well-known

plant, and I have seen a variety having pale yellow flowers called *xanthinum*, but I do not think it so handsome as the present plant, which has white sepals and petals, prettily crisped and undulated. There is also a variety of this plant called *liliflorum*, which was introduced some years ago by the Messrs. Rollisson, of Tooting. It has always been very rare, and if any reader of THE GARDEN has it in bloom I should be glad of a flower. *O. ramosissimum*, some assert, requires to be kept at the warmest part of the cool house, but I have seen it thriving and blooming freely with *O. Halli* and *O. luteo-purpureum*.—W. H. G.

GARDEN FLORA.

PLATE 900.

NOTES ON NEMESIA.

(WITH A COLOURED PLATE OF NEMESIA STRUMOSA VARS. *)

THE pretty varieties of *Nemesia strumosa* which form the subject of our coloured plate this week were first brought before the public at the Royal Horticultural Society's show on July 26, 1892, when Messrs. Sutton and Sons made a very pretty display of their blooms. Messrs. Sutton received the seed from a client in the south of Africa, and after growing and selecting it in their own grounds they are now for the first time offering seed. It is a half-hardy annual, and may be sown in heat in March and transplanted in May, or sown in the open after the middle of May. In fact it may be treated as any other half-hardy annual. It attains the height of 12 inches or 15 inches, and produces five or six stems, each of which bears a head of flowers, but very little foliage. It blooms very freely from midsummer to Michaelmas. In fact, Messrs. Sutton sent us some flowers as late as October 15 last year which were as beautiful then as they had been in June. The colours range from white and pale yellow to rich deep orange, and from all shades between pink to deep crimson. The seed is very light and germinates freely. The flower is very attractive in a bed. At the Reading Nurseries it caught the eye of everybody as they entered the gate from the opposite side of the grounds. It is extremely valuable for cutting. Two or three spikes in a specimen vase give a pretty effect.

Hellebores at Long Ditton.—Few flowers comparatively are open at present, but a few sunny days will bring them on apace. At this dull season the Hellebores are welcome, and in the nursery of Messrs. Barr and Son, Long Ditton, many kinds are in bloom. Amongst them are several very beautiful seedlings raised by Mr. Archer Hind, which are an advance on existing types. One form was of great beauty, the flower large, robust and white, freely spotted with rose at the base. It is curious that, in spite of their beauty, the Hellebores, except the Christmas Rose and its varieties, are not more largely planted in gardens. They last until the Daffodils are in full bloom, and provide plenty of flowers for cutting. At Long Ditton two large breadths of *H. punctatus* and a variety named *gut-tatus sub-punctatus* are in full beauty. If one only wanted two kinds, these would form a distinct and attractive selection. *H. punctatus* is well known, its flowers being of a deep rose-purple colour, thickly spotted with a darker shade and suffused with a plum-like bloom. The variety *sub-punctatus* is a very beautiful nodding flower, white with a suffusion of green on one or more of the segments and a

* Drawn for THE GARDEN in Messrs. Sutton's nursery at Reading by Gertrude Hamilton, August 2, 1892. Lithographed and printed by Guillaume Severeys.

faint spotting of rose at the base; the leaves are bright green—an exquisite contrast. These Hellebores will stand when in bloom 15° of frost without injury, the flowers appearing fresh and fair after the trying ordeal. One point of importance in their cultivation is to leave them alone, as the plants dislike frequent disturbance at the root.

THE WEEK'S WORK.

FRUIT HOUSES.

EARLIEST PEACHES AND NECTARINES.—As a rule Peaches and Nectarines forced moderately with a view to having them ripe in April or early in May set very freely and have made fairly good progress in spite of the dulness of the weather. Thinning out ought to have been gradual and rather severe. It is a great mistake to leave far more fruit on the trees during the stoning period than it is intended shall constitute a crop, this having a most weakening effect and likely to cause wholesale dropping. If the trees are not overcropped, kept uniformly moist at the roots, and not subjected to high night temperatures, there will be few or no fruit fail to stone properly. The temperature at night during the stoning period may safely range from 55° to 60°, advancing another 5° when the process is complete. In the daytime these figures may be improved to the extent of from 7° to 10°, always closing early enough on bright days to run up the heat to near about 80° for a time. The trees should be syringed freely every morning and again early in the afternoon or when the house is closed, or otherwise red spider may gain the ascendancy. Unless the borders are new and somewhat rich, liquid manure, moderately strong, should be given at each watering, enough being applied to thoroughly moisten the whole of the border. Be not over-hasty in tying in the young shoots. If this is done just before colouring commences, that will be quite soon enough, a little free growth being frequently desirable in the case of early-started, heavily-cropped trees, but it ought to be kept well thinned.

SUCCESSIONAL HOUSES.—In some of these the crops will be already set; in others the trees will be in full flower. At this comparatively late period very little trouble need be taken in fertilising the flowers, though if there has been any difficulty in effecting a good set in former years, it may be advisable to touch over the flowers either with a rabbit's tail fastened to a long stick or with a camel's-hair brush, the former being much the more rapidly used. It is the large-flowering varieties that are most deficient in pollen, and this failing may be rectified by means of pollen dust transferred on the tail or brush from the abundantly furnished small-flowering sorts. As a rule all that need be done is to smartly tap the branches every morning towards mid-day, this effectually distributing the pollen. Bees are of the greatest assistance, and should be encouraged in the houses. Commence thinning out in the case of trees having a great profusion of flower buds before many of the latter are opened, all those at the back of the wood on wall trees and the greater part of the under buds on the roof or front trellis trees being stripped off first. In most instances there need be no hesitation about also thinning out the better placed flowers, leaving them about 2 inches apart, and the rest will be all the stronger, and most probably the fruit will be finer accordingly. Failing this timely thinning, proceed with it directly it is seen the fruit is well set and complete before the stoning period arrives. If fine fruit is desired, there must be no delay in thinning, one Peach to every 9 inches square of tree surface being ample, and Nectarines ought not to be left much more closely. Also proceed with disbudding and stopping in a piecemeal manner, only enough shoots being allowed to grow to their full length to take the place of present bearing wood, a few more being allowed to extend thinly where there is room for them. There ought always to be a shoot or five or six leaves at the extremities of

fruiting shoots, or, at any rate, beyond the fruit, or the latter may fail to swell to its full size. Where there is a shoot at the same joint as a fruit, it should be reserved, and if not wanted for laying in, stop at the fourth or fifth leaf, and it will then assist to swell the fruit. Keep the border constantly moist, avoiding saturation, however, and well established trees should have liquid manure applied to the borders freely. From 50° to 55° by night will be quite heat enough in most cases with the usual advance in the daytime, closing early on bright days so as to run up the heat to 70° or 75°. Cease syringing overhead when the trees are in flower, but recommence directly the crops are set.

LATE HOUSES.—Trees in unheated houses are rather too forward. The trees which are to supply fruit as late as possible ought to be retarded as much as the weather will allow. Unless the nights are very frosty both front and top air should be left on to its full extent. In unheated houses there is always a danger of severe spring frosts injuring the fruit blossom on the upper side of the trees especially, and there should, therefore, be no early removal of the flowers or buds on the under sides, as these may yet be required to furnish the crop. If a blind could be run over the roof, or, failing this, mats be used instead, the most severe March frosts might be defied, and a portable petroleum-heated stove would save the flowers in a small house. Trees break most strongly, the flowers also being large and perfect, when those in partially exhausted borders get the benefit of a thorough soaking of farmyard liquid manure or manure of some kind, such, for instance, as guano used at the rate of 1 ounce to the gallon of soft water just prior to bud-movement. If it has not been given then, apply it now, or directly the border is approaching dryness.

ORCHARD HOUSES.—If these are not heated there is some difficulty to contend with as in the case of unheated Peach houses, a simple covering of glass not being sufficient to save any kind of fruit blossom when spring frosts are extra severe. Where Peaches, Nectarines, Pears, Plums, and Cherries are all grown in the same house, whether in pots or planted out, it is advisable to keep them as cool as possible till the buds burst, and then if a little fire heat can be turned on, this will save the flowers from frosts and favour a sure set. When the nights are mild leave a little air on, ventilating more freely in the daytime, and if the pollen does not dry sufficiently by 11 o'clock, fire heat should be applied if possible. Peaches and Nectarines will set readily enough if the trees are smartly jarred at about mid-day, but in the case of the other fruits named it may, perhaps, be necessary to distribute the pollen by means of the rabbit's tail or camel's-hair brush. Especially ought the Pears to receive this attention. Should the trees in unheated houses unfortunately become frozen, they ought to be freely syringed with cold water before the sun reaches them, and be further shaded from the latter for a time.

INSECT PESTS.—Black fly is about the worst enemy to the fruit grower that can be named. Syringing the trees with hot water and petroleum during the winter is the best preventive, but it must not be tried, nor any other strong insecticide, after the trees have flowered, or the fruit will be injured. Nor is fumigating with tobacco paper of much avail, this not affecting the insects curled up in the leaves. The best remedy is tobacco powder. After opening out the curled-up leaves as much as possible, put the powder well into them, syringing it off the next morning. This treatment, if persevered with, will be effective; but if neglected, the aphids will quite ruin the trees for the season. Fumigation with tobacco paper will keep down the ordinary green fly, and this should be done before the flower buds expand and again after the fruit is set. Red spider is best kept under by a free use of soft water forcibly applied with a syringe and accompanied by liberal treatment at the roots. Anything strong enough to destroy brown scale will also injure the fruit, and hand-picking is the best remedy, unless very

numerous, in which case a stiff brush and soapy water should be used for clearing the wood of this nasty pest. **PRACTICAL.**

ORCHIDS.

THIS so far has been one of the most favourable springs we have had for many years for orchidaceous plants. Although the nights are yet cold the east winds are not so trying as they have been in past years. It is delightful to see a general growth taking place as it were all along the stages, and the richer green colour taken on by the leaves. The object of the cultivator must be to assist this growth, and he must display constant watchfulness, whatever the state of the weather. To maintain a steady healthy growth there ought to be a moist atmosphere, but this may be overdone if a continual saturation is maintained night and day. It is a good plan to have a hygrometer in each of the houses; they are not expensive; and the dry bulb of course answers all the purposes of a thermometer. With this it is easy to tell what the state of the atmosphere is, and it would be well to allow the moisture in the atmosphere to fall a few degrees lower by the wet bulb at midday. This may be obtained by damping down the house at 10 a.m. on fine days, and not again until 3 p.m.; this depends a good deal of course upon the weather. If it happened to be dull and cold, twice a day would be often enough to damp down, viz., in the morning and at night. In bright sunshine the drying effects are sufficiently modified by the two extra dampings. Watering the plants need not be attended to with such extreme caution as heretofore. Plants in growth can take a good deal more water even if roots are not being very freely produced, but Cattleyas, Lælias, and most of the occupants of the intermediate house should not be watered until they really need it. We grow about two scores of plants of *Miltonia vexillaria*, and they are never allowed to become very dry at the roots; they are treated more like *Odontoglossum crispum*, being watered sufficiently to keep the *Sphagnum Moss* in a healthy growing condition on the surface. A group of plants of *Cypripedium caudatum* is treated much in the same way as regards watering. The Cattleyas and Lælias are allowed to become fairly dry at the roots, and are then well watered. *Cymbidiums* take a great deal of water and weak liquid manure occasionally. The most vigorous of all of them is *C. Lowianum*, which grows with the greatest vigour in the Cattleya house well up to the light; on the other hand, I find that the more elegant and much more beautiful *C. eburneum* does better on the shady side of the house. They are now both in flower and growing well. A species of scale generally attacks *C. Lowianum*, and must be thoroughly removed before the blooms begin to open, for if they get into the flowers they sadly disfigure them. In the warmest house there is much to interest the orchidist at this season. A rather good display of bloom may be expected during the next few months. The Moth Orchids are, of course, unsurpassed for elegance and beauty, and are now in good bloom; they must on no account suffer from want of water at this season, as not having pseudobulbs to draw upon, the roots should have all the moisture they can take up. The house is perfumed with plants of *Dendrochilum glumaceum*, a free-growing plant whose graceful spikes have a charming effect. I generally repot these plants before they start to grow. This year I divided a large specimen, and the different pieces are growing quite as freely as established plants. Plants of *Oncidium ampliatum majus* are throwing up their flower-spikes freely, for which slugs and other depredators have a special fondness, but with much watchfulness we have saved them all this year. They also can now take a free supply of water at the roots.

We have, during the last week or two, been doing a good deal of work in the warmest house, surface dressing and repotting. All the *Angræcums* have been seen to, some of them being repotted and others merely surface-dressed. *Angræcum sesquipedale*, of which there are several fine

plants of the late-flowering variety, was repotted last year, and this year the plants have merely been surface-dressed by removing the decayed Sphagnum and replacing it with some freshly gathered. I find the plants of this species succeed best in flower-pots two-thirds filled with loose, clean drainage, and over the drainage a layer of clean Sphagnum, the flower-pots being filled up with chopped-up Sphagnum, plentifully intermixed with crocks and charcoal. The roots of these plants will not live in a solid mass of rotten Sphagnum, the live, healthy roots being found on the surface or clinging around the flower-pots. *A. eburneum* is a noble growing plant, requiring plenty of pot room, and should be treated the same as the other. There are two other varieties of *A. eburneum*, viz., *virens* and *superbum*. The smaller growing varieties are, in their way, exquisitely beautiful, and the numerous introductions during the last few years have well furnished our hot-houses with these interesting plants. The smallest of them are exquisitely beautiful. *A. hyaloides*, for instance, has stems scarcely exceeding an inch in height, and the flowers are very freely produced. The charming *A. citratum* is a large plant in comparison to the above, but it also flowers freely, and should be in every collection of Orchids. A few of the best species besides the above to cultivate are *A. modestum*, *A. Ellisi*, *A. Scottianum*, *A. Leonis*, and *A. Kotschy*. Some of them succeed better in teak baskets or small pans suspended from the roof glass, and the drooping spikes of some are more effective in this way. Plants of *Vanda teres* have also been placed in this house; they have been surface-dressed, and are now encouraged to grow. If they are kept in the Cattleya house the flowers do not appear until July, and they are wanted in June. *Vanda cœrulea* is now showing signs of growth. Ours were surface-dressed some time ago, but they may yet either be repotted or surface-dressed if this is needed. We have placed the *Thunias* in the warmest house in a light position; they do better here than in the Cattleya house. As roots are being formed they must not suffer from lack of water, for on the steady, good growth of the plants will depend the production of a good bloom.

J. DOUGLAS.

THE KITCHEN GARDEN.

SPRING-SOWN ONIONS.—Very heavy rains, and these almost of daily occurrence, have brought the soil into a very wet state. Any attempt to get in the seed whilst the soil is in a wet and sticky state cannot be too strongly condemned, as, instead of helping on the crop, it places it in jeopardy, and it is better to wait for a few days or even a week or more. The ground having been already dug and manured, a dressing of burned refuse or wood ashes spread over the surface, and also a sprinkling of soot, should be worked in with a rake, a little salt being also a good preventive of the Onion grub. The above having been attended to, the whole surface must now be equally trodden over, as a firm root run is one of the most cardinal points in successful Onion culture. The drills should be drawn 12 inches apart and also shallow, the seeds being sown thinly. When sown thinly it is rarely the Onions require thinning, except perhaps in one or two places. The crop of unthinned Onions is much heavier in bulk, if not so large individually. Medium-sized Onions also keep better than larger ones. After sowing fill in the drills, equally treading the surface of the whole bed. A wooden rake should now be drawn over the whole bed, taking care that it is drawn forward and not pushed backwards. If Onions are likely to be scarce early in the summer do not neglect making a sowing of the invaluable Queen, this coming to a useful size quickly. A row or two on the outside of the bed will be found more convenient than sowing perhaps in the middle of the main crop plot.

LEeks.—These may well be sown at the same time as the Onions. Of course very large Leeks are not secured from open-air sowing, as if these were required they would already have been raised

in heat. Those sown now form the ordinary crop as grown in gardens for winter and spring use. Not that much seed need be sown, as on account of the seedlings being transplanted when of a suitable size almost every one may be used, that is, if the seed was sown thinly in drills so that there is space for their development. I generally sow a row or two on the outside of the Onion plot, treating this crop just the same as regards sowing. Sowing thickly in small beds is not a good course to pursue. It being very necessary that strong plants be obtained for planting, do not attempt to transplant while in a small state.

TRANSPLANTING AUTUMN-SOWN ONIONS.—There is no need to be in too great a hurry to transplant these, that is if they are small, as it is much better to wait a week or two until they become sufficiently strong enough to bear transplanting. Where a fair-sized plot was sown a sufficient number may be left to grow unmolested, the thinnings being carefully raised and planted out in good ground. As a rule this crop is sown in rather cramped quarters which makes their removal a necessity. The site for their reception must be in good heart, and the Onions set out in rows 15 inches apart, allowing 4 inches or 5 inches in the rows. This will allow of every alternate one being drawn for use during the summer. Where Strawberry plants were set out late, and consequently will not be of a fruitful size, the spaces between the rows may be used for transplanting this crop.

MAIN-CROP TOMATOES.—By the time the plants are ready for planting in their respective positions from seed sown now, so also should the places be ready for their reception. The plants must receive rational treatment from the first and not be drawn or attenuated in the least. What is wanted is sturdy plants grown fully exposed to the light from their earliest existence, the temperature they are growing in being tempered with a judicious amount of ventilation. It is those poor puny plants drawn up in a vitiated atmosphere that are liable to the attacks of disease. Sow the seeds very thinly in 6-inch pots or pans, using light soil. Either place on a gentle hot-bed or in any fairly warm structure, and directly the seedlings appear raise the pots close to the glass. As soon as the seedlings are large enough pot off into 3-inch pots, using soil that has been previously warmed, as if cold soil is used the little plants are very likely to receive a check. Grow on near the glass in a temperature of 60° during the night, allowing a rise by day from sun heat. It being very essential that the plants be kept steadily growing, do not allow them to become root-bound before repotting into 6-inch pots. By treating the young plants rationally there need not be any difficulty in getting the earliest formed trusses to set good bunches of fruit. Allow ample room between the plants, and keep them growing in an intermediate temperature and with a free amount of ventilation, but avoid cold cutting draughts.

EARLY POTATOES.—Where Potatoes are desired as early as means will allow, the sets must be planted where they may be provided with a rough shelter. For this purpose a portion of a sloping sunny border should be planted, and provision made for sheltering by placing boards on edge along the sides and ends, with pieces of wood stretched across, so as to support mats or dressed canvas to ward off frost. The soil being in a pulverised state and also fertile, cut out the drills 20 inches or 2 feet apart, the sets being arranged 8 inches or so apart. The sets having been already sprouted and sturdy, lay these in the drills carefully, drawing quite 5 inches or 6 inches of soil over them.

HERBS.—The time to overhaul the herb border is just as the various kinds are starting into growth. Not that this need be of annual occurrence, but to prevent the plants wearing out it is necessary to take them up and replant occasionally, adding either more fertile soil or providing a fresh site. Keep each in separate beds and also have them well exposed to the sun. Those of a herbaceous character, such as Mint (this rarely requires taking up), Tarragon, Balm, pot Marjoram, and such-like,

should be divided and replanted. The common and Lemon Thyme may also be served likewise, but in this case plant them well down so that they will strike fresh root. All those that are not taken up should be surface dressed. Thyme may be raised from seed sown in boxes and planted out when large enough. All kinds may be sown in the open early in April. It is very necessary that a sunny site be selected for the seed beds. Sweet Marjoram should be raised from seed in a box, afterwards planting out. Sage, or even Lavender, strikes root readily if portions of branches about 6 inches in length are pulled off the old plants and inserted firmly in the open. Sweet Basil, where a supply has to be kept up, should be sown on the surface of a shallow hotbed, where the plants may be hardened off and allowed to remain, or be planted out carefully when all danger of frost is past. The seedlings may also be raised in a box, and afterwards pricked out on a shallow hot-bed. A supply early in the season may also be had by sowing in pots or boxes in a vinery or Peach house being started, or even a greenhouse, the tops being gathered as required. Basil requires to be treated as a tender annual.

A. YOUNG.

PLANT HOUSES.

FORCED SHRUBS.—Some of these will now have gone out of flower, but nevertheless do not despise the plants or treat them badly, for with good care they will each and all do a good turn again in one way or another. *Azalea mollis* and *A. pontica* also are valuable for forcing; this is well known; but the fact that the plants may be retained in pots from year to year does not appear to be comprehended to the same degree. They will not, except in a few cases, be of any great service to force next spring, but in two years they will yield an abundant crop of flower again. We are now cutting and have cut for some time past a lot of bloom from plants two and three years potted. They have flowered in many cases as freely as newly-potted ones with one distinct advantage that the flowers have not that propensity for dropping before expanding that is sometimes the case with those freshly potted. When the plants are well established the flowers are of greater substance and last longer; at the same time the wood is longer-jointed, which is another advantage, as longer stems are thereby secured. As soon as all the flower is cut, the plants are pruned a bit into shape and still kept in a growing atmosphere, getting them into a cool house in a few weeks, and thence out of doors. Dwarf Charles X. Lilacs when cut are close pruned, but these will be put outside sooner than the *Azaleas*. Guelder Roses should be treated the same as the Lilacs. *Deutzia gracilis* when cut should be grown on as in the case of Indian *Azaleas*; thus treated this useful shrub will flower every year. *Spiraea confusa* should be treated the same as the foregoing *Deutzia*, save that it will do quite as well in a little less warmth.

The plants just alluded to, if used in conservatory decoration, should be brought back again into warmth as soon as out of flower, the knife being used where essential to keep them within compass and also compact. In a few weeks sufficient growth will have been made for them to be shifted into cooler houses before being finally stood out of doors early in May. Whilst advising pot culture for *Azalea mollis*, I am alive to the fact that they can be successfully treated by the planting-out process, making better growth without doubt; but then those of us who are not fortunate enough to possess suitable soil will do much better by adhering to the pot system. After planting out, when again relifted, they will take much larger pots; this should be considered. Pot *Rhododendrons* (hardy kinds) can now be brought on into flower much more successfully than earlier in the season. As the buds swell, they should be freely syringed, giving at the same time a liberal supply at the roots. *Hydrangea paniculata* (after hard pruning) may now be started in batches in a moderate heat, keeping the plants as near the glass as possible.

SPRING BULBOUS PLANTS.—In the case of Hyacinths, Tulips, and Narcissus, what has now to be guarded against is that of having a glut of flower towards the end of the month. This is not desirable unless in special cases. The latest kinds should be kept as cool as possible under a frame against a north wall if need be so as to prolong the season. By doing this and bringing on the earliest ones there will be a better succession of flower. Daffodils of various sorts will now flower kindly in cool houses. As decorative plants they are now simply invaluable in gardens. Lilies of the Valley will not any longer require bottom-heat to force them into flower. Where now dispensed with the growth will be all the sturdier, lasting in good condition longer, the increased amount of sunshine affecting them much less than if drawn up in heat and moisture. *Spirea japonica* answers to the same kind of treatment with better results. For the present in both cases it is better to keep the pots mounded over with cocoa fibre to give moisture (not heat) to the crowns. In the case of both, the leaf-growth does not then get such a start of the flowers. Solomon's Seal brought on steadily will afford a pleasing change to other things. Long before the flowers open the foliage is very ornamental on the plant and useful for cutting. Scillas and Crocuses will in cool greenhouses make a good display, but as soon as they fade I would advise planting out in preference to retaining them in pots. *Dielytra spectabilis* should, to see its beauty, be forced gently; in too much heat it seems in a measure to lose its character. *Clivias* or *Imantophyllums* in many cases will now be in flower, or advancing. The earliest plants should have a trifle more warmth given them; this will assist the spikes; but, on the contrary, it is not advisable to retard any in quite a cold house after they have once made a start. We have some now (young plants) which are in a vinery just breaking into growth, where they seem quite at home. As soon as the *Amaryllis* show for flower and root action becomes a little more active, they will take more water, but never to excess. A temperature now of from 50° to 55°, or even 60° as a night temperature for the forwardest, will suit them well. Young ones, not yet having had a rest from the seedling stage, will take 5° more with safety. For want of a better place ours now showing flower are upon a vinery shelf, where the night temperature is about 58°. When too much heat and moisture are given them, both the spikes and the foliage draw up too slender with less substance also in the flowers. *Lilium Harrisii* will want looking after closely for green-fly in the points. A dusting of tobacco powder, if taken in time, will save fumigation. *Lilium candidum* can now be brought into heat if desired.

JAS. HUDSON.

Hardy flowers at Christchurch.—Many interesting hardy plants are in bloom in the nursery of Mr. M. Prichard, Christchurch, near Bournemouth. Three charming early spring flowers now fully expanded are *Anemone blanda*, *Galanthus Elwesi* and the Winter Aconite, which require to be grown in masses to get much effect. *Galanthus Fosteri* has just gone out of bloom, as this is a week or two earlier than *Elwes'* Snowdrop. The way the last-mentioned reproduces itself from seed suggests that this is the best method of increasing the stock. *Anemone blanda* varies in colour, but is none the less interesting on that account; whilst *A. palmata* gives colour to the nursery, with its bright lustrous golden flowers. A notable plant is *Erythronium Hartwegi*, an early-flowering variety of *E. grandiflorum*. It has fine bright green leafage, heavily mottled with chocolate, and the flowers are of a rosy fawn colour, rising to a height of about 9 inches. The plant is quite hardy, preferring a deep, moist and sandy peat soil. Quite a number of Saxifrages are in full beauty, chief amongst them being *S. Boydi* alba, *S. oppositifolia* major, *S. Rocheliana* and the remarkably free *S. luteo-purpurea*. *Draba aizoon* will soon burst into blossom, the rosettes being full of buds. This is a charming plant for old walls and limestone crevices on the rockery. In the

bulb beds, *Chionodoxas*, *Scillas* and *Anemone fulgens* are in full bloom, also *Puschkinia libanotica compacta*, which has pale blue Scilla-like flowers with darker veins. Under a south wall *Cyclamen Atkinsi* and its white form, *Iris reticulata*, *Narcissus Bulbocodium citrinus*, besides other things, are in bloom, and most welcome in the late days of February. Lenten Roses, as the Hellebores are familiarly called, are in rich contrast to the evergreen *H. foetidus*, very striking in large clumps. It is to be hoped that after such a rainy and comparatively mild February severe frosts will not occur. Last year, however, on one occasion no less than 20° were registered one day in March. *Romneya Coulteri* has been killed everywhere at Christchurch, except on a south wall. A severe frost in January, the thermometer standing at 25°, proved too much for this charming flower.

FLOWER GARDEN.

EARLY SPRING FLOWERS.

TO THE EDITOR OF THE GARDEN.

SIR,—Perhaps some of my old gardening friends may say, what is there to tell about early spring flowers? Why I write is this: Knowing many gardens and owners' of gardens, I am often surprised to find how few species and varieties of early blooming flowers are grown, and how often it is the old story—Snowdrops, Crocuses, winter Aconites, a few Scillas, Colchicums, and Primroses. I am frequently asked by friends, amateurs, What is the best time to visit Oakwood garden? The answer usually is that it depends upon taste. Individually I prefer the earliest spring flower season, about the middle of February. There is an especial charm about the first flowers coming after the long wintry weather, sometimes in it, with their bright colours. How beautiful is a large bank of Hepaticas with all the shades of colour, *H. angulosa* blooming first, then the double pink and blue and all the different tints of single white, pink, blue, and purple. I was told by the late Mr. Frank Miles of a Dutch grower who had raised Hepaticas of very many colours, and was not disappointed with the collection. Moss grew up among the plants and added to the beauty of the bank. Miss North was so taken with the effect that she transplanted Moss to obtain it, but, alas! as the Moss grew stronger it became injurious to the plants, and she had to grub it up. In old gardens are found big plants of Hepaticas, but I do not think that they are now planted nearly enough. *Leucojum vernum* is becoming more common, but is not in general use; it makes a good companion to Snowdrops. An effective mode of growing this is in a bed with *Sedum pulchellum* as a carpet, where it sows itself and spreads. *Leucojum vernum carpaticum* with its stronger growth and two flowers to the stem is a great improvement on the type. The newer varieties of Snowdrops are getting more into cultivation. *Galanthus Elwesi* with its globular form has very many admirers; others prefer the long-petalled graceful variety *G. Imperati*. One of the finest forms in bloom at Oakwood is *G. Melvillei*, which I owe to the kindness of the raiser. Good clumps of the different varieties of *Saxifraga Burseriana* on a bank, bloom, I think, better than when grown under glass; but when out, deserve a bell-glass to preserve the blossoms in rough weather. In warm, sheltered corners the many species of winter and early spring-flowering Crocuses hold their blooms well. *Anemone blanda*, given me by Mr. Ingram, is a gem, and the so-called white form, which with me usually comes of a pale blue, is

very pretty. *Daphne Blagayana* resists frost well and is as sweet as the greenhouse *Daphne indica*.

Many of the Lent Hellebores are now very beautiful, and fine varieties of them may be raised from seed. *Petasites albus*, where there is room for it, is not to be despised. All the Scillas and Muscaris are good, but one of the finest early-flowering of these latter came from M. van Tubergen, junr., under the name of *Hyacinthus azureus*; it is a lovely soft pale blue. There are now a great number of early-flowering common Primroses, with beautiful shades of colour, enough to make a spring nosegay by themselves. Early-flowering shrubs, such as *Chimonanthus fragrans* and *Lonicera fragrantissima*, are pretty generally known. I could go on with other flowers, but space forbids.

I think that the early spring flowers of the future will undoubtedly be found among the Irises. *Iris Histrio*, now in bloom at Oakwood, has a richness of colour which few Orchids can surpass. *Iris Bakeriana*, *I. Danfordiae* and *I. histrioides* are all most beautiful early flowers. When they become as common and inexpensive as *Iris reticulata*, a large spring bed of Irises will be gorgeous. It is to be hoped that nurserymen will turn their attention to importing or growing the rarer Irises from seed on a very large scale, so that they may be generally grown.

GEORGE F. WILSON.

Saxifraga luteo-purpurea.—Despite the two-fold fact that we are still within the limits of winter, and that my plants of the above are in a very shady corner where sun in winter-time never reaches them, they have for some days past been flowering freely. As well as being one of the earliest, if not the earliest, when exposed to all weathers, *S. luteo-purpurea* is also one of the easiest to manage. Very pleasing are its primrose-coloured blossoms, so freely and profusely borne on short stems above the densely cushion-like habit of growth, and if sheltered while in bloom from rough winds and pelting rains, the flowers continue a long time in perfection. My plants are growing in a loam of quite ordinary character, to which sand has been freely added, the pots being abundantly drained. Its perfect hardiness and very free and quick growth constitute it a good kind for planting freely on the rockery; but in doing so, it will be best to avoid a spot likely to catch the broiling sun of summer, as many members of this section of Saxifrages prefer a position partially shaded, and in such, with plenty of moisture, many kinds grow quite freely—almost luxuriantly.—E. J.

Primula obconica and skin disease.—I gave in THE GARDEN a year or two ago my experience of the poisonous nature of this plant and from which I had suffered to an almost incredible extent. At that time there were many who did not believe in this plant being poisonous, because, happily, they were not sufferers. In my own case, however, I had conclusively traced the poisoning to this particular species of *Primula*. But perhaps the greatest proof of all is in the fact that after years of suffering, the irritation quickly subsided upon my avoiding the plant altogether. It is now nearly three years since I touched the plant in question, and I have not had the slightest symptom of irritation since. In my former note I mentioned that I had in my possession a recipe for ointment which allayed the irritation, and which anyone might have on application. I adopted this course to trace if possible how many were suffering from it, and I have received numerous applications from many parts of the United Kingdom from ladies and gentlemen and gardeners, many of whom, like myself, had spent a deal of money to no purpose—indeed it seemed quite a puzzle to all whom I consulted concerning it; consequently I was treated for various skin diseases, disordered

blood, and so forth. But the fact that the irritation subsided when I kept aloof from the plant proves, I think, that the disease was quite superficial. In the hope that it may be of use to some of your readers, I now enclose recipe for ointment, but I wish distinctly to say that it does not cure the disease, which is contracted each time the plant is touched, though it certainly allays the irritation, and those who have to grow the plant and suffer from it would do well to glove the hands. The only cure is to let the plant alone. Recipe for ointment is as follows: 15 minims liquid carbolic acid, added to one ounce of oxide zinc ointment, applying same freely to affected parts. It had better be stated perhaps that the above was prescribed for me at one of the London hospitals for diseases of the skin, and is the only thing that gave me even temporary relief; it is also excellent for any skin irritation. Any chemist will provide it for a few pence.—E. J.

Hyacinthus candicans.—This deserves much more notice than it receives at the hands of gardeners in general. Unfortunately, in some soils it does not succeed more than two years at the most if left in the ground during the winter, as the quantity of moisture retained in heavy soil rots the bulbs. Under these circumstances some preparation is necessary to ensure success. Remove the whole of the soil for at least 18 inches deep and 1 foot wide, replacing it with decayed vegetable refuse, old potting soil and leaf-mould. It is a good plan also to pot the bulbs singly into 5-inch pots early in the year, keeping them in a cold frame until the middle of April, when they may be safely put out into their flowering quarters.—E. M.

Crocuses in bloom.—When at Long Ditton recently we made note of a few interesting Crocuses in bloom in the representative collection grown by Messrs. Barr and Son. *C. chrysanthus* and its varieties were in flower, the type uniform deep orange, but in the variety *albidus* the segments are pure white, the stigmata intense orange, a rich contrast; *pallidus* is pale yellow, and superbly rich yellow; thus the species varies greatly in colouring. It is found plentifully in Greece and Western Bithynia and at various altitudes, sometimes almost on the sea level, and also at an elevation of between 3000 feet and 4000 feet. *C. suaveolens* and *C. Imperati*, both fine Crocuses, are near relatives, and amongst the most charming of spring flowers. *C. biflorus* is conspicuous, and we made note of *estriatus*, light lavender, the segments creamy colour on the outside; *Weldeni albus*, pure white, rich orange stigmata, very pretty, and *Pestalozzeæ*, white, the flower very small. *C. Tommasianus* is a beautiful species, the segments about $1\frac{1}{2}$ inches in length, and described by Maw as "pale sapphire-lavender." One gets in even a small collection of spring-flowering Crocuses great variety in the colouring of the segments, and their variability constitutes a great charm. The shades of colour are soft and refined, especially those of lilac and lavender. It is a pity that such bulbs are seen in comparatively few gardens, as they bloom early, and on a bright sunny February day make patches of welcome colour.

Market Asters.—Very rarely can we see such great breadths of Asters as are found in some of the market gardens, where perhaps 50,000 are annually raised from seed sown in shallow boxes and germinated on manure beds. From these boxes the plants after having been hardened off are dibbled out into the open ground somewhat closely together, and in time they produce most beautiful masses of flowers. It is very remarkable to find how very true these dwarf Asters come to colour and height, especially when the comparatively low price charged for the seed is considered. Very large numbers of small growers also raise a few thousands of these Asters, lifting and "balling" them for the costermongers' barrows, or getting about three plants into a $4\frac{1}{2}$ -inch pot, and which are sold for about 3d. The profits are not large, but they are as good at least as any other market subject will produce. The great thing is found in strain, which now is apparently as dwarf, compact, pure coloured, and

double flowered as it is possible to look for. Few plants lifted and blocked into pots when in flower stand the rough sort of usage they get better than Asters, and the purchaser of a few pots at least gets plants that will endure for a few weeks, and that is very much more than can be said for myriads of plants that are forced on in heat and fed with stimulants, then sold to the public only to flag and die in a few days. When at Reading last autumn somewhat late I saw huge breadths of these dwarf Asters in Messrs. Sutton and Sons' trial grounds, and I could not but realise how well, apart from their value for lifting into pots, they were suited to give rich masses of colour in succession to other plants that had either flowered early or failed.—A. D.

A LADY'S NOTES ON SOME GERMAN GARDENS.

In the course of a few excursions in the Franco-German Switzerland I frequently noticed what charming gardens the surroundings of old castles and fortresses produce. They are scarcely intended for gardens properly so-called, but are therefore perhaps all the more interesting from the impromptu (one may almost say) effects unintentionally brought forth. In the valley of the Pegnitz, a few miles from Rupprechtstegen, is an old castle and fortress commanding an exquisite view on all sides. The steep banks sloping from the ancient Lichen-covered walls have here and there some simple dwelling houses more suited to modern homely requirements than the massive, dimly-lighted remains of the ruins, and each has fitted itself out with some pleasant garden "bits." More Gooseberry bushes were to be seen here than are usual in these regions, and the castle slopes, though high and steep, seemed to suit the "bouquets" of fruit trees laden with Apples and Plums plentifully interspersed with the Birches, Elders, and mountain Ashes self-sown and always gracefully perched on the rocky mounds which accumulate in such places. Bushes of *Spiræas* seemed favourites with the dwellers hereabouts, and bright Monthly Roses mixed among them. It was not that any special or rare flowers attracted one in these pretty garden pictures. I never saw anything more uncommon than *Hedera Regneriana*, but the clumps of favourite flowers coming up among the fruit trees and bushes had a happy, home-like effect.

In the natural rock gardens which abound in the Pegnitz valley it was noticeable how good an effect the frequently interspersed small spaces of mossy turf or short Grass gave, occurring between the bush-clothed rocks, some here and there with a few spikes of bright *Dianthus* peeping up through the sods. I thought our made rock gardens would be the better for having spaces of turf placed occasionally among the masses of flowers, and that they would show up the bloom and foliage of the latter, perhaps resting on their margins.

An old "robber" castle had been partially fitted up as a summer home for its distant owner. One entered by solid vaulted halls, and ascending to the first floor, suddenly the parlour opened upon the most brilliant little garden, which took one by surprise, being so high up, the castle happening to be built on a steep rock. It looked down upon a very steep ravine full of Maples. A choice selection of the best plants, such as *Galtonias*, *Lavateras*, *Salpiglossis*, *Fuchsias*, *Phloxes* and *Tea Roses*, seemed on a blaze in the hot Bavarian sunshine, and scarcely anything could have made one feel the long stretch of "centuries across which one had to salute" the old robber chiefs of the

type of Götze von Berlichingen, who formerly inhabited these grey precincts, than the reflection that all these bright flowers came from lands they had never heard of or could have imagined as existing, but with which we are now within a few weeks of easy communication.

The birds in Germany seem to have acquired a more provident turn of mind unknown to ours. The "birds' Pear trees," as they call the Mountain Ash, there remain with their wonderful loads of brilliant fruit until wintry weather comes. Here they are often stripped soon after ripening. Near Hall, in Swabia, a very pretty avenue was formed in a broad cutting through the large Spruce Fir forest, of alternate Mountain Ashes and the whitest variety of the Abele Poplar, producing a charming effect against the dark velvety background of the Firs. The Carnations in Bavaria struck me as the smallest I had ever seen, though intensely vivid in colour, judging by the basketfuls brought in by the peasants to offer the visitors at Bayreuth. On the side of the high road in an out-of-the-way part on the confines of Bavaria and Wurtemberg I noted a long line of blue *Succory* mixed with pink *Rest Harrow* in large masses—a pretty specimen of a natural shot ribbon border. Every here and there among the Fir-clad hills in this region one notices clearings of several acres on which are planted Apples, Pears and Walnuts, the Spruce forests forming an excellent shelter, and the effect of this sensible arrangement is naturally most pleasing. M. A. R.

Liphook.

Hepaticas.—I lately saw some remarkably fine clumps of *Hepaticas* growing in Mr. Barclay's charming hillside garden at Reigate. The soil is of a dark semi-peaty nature, fairly deep, and admirably suited to hardy plants. The clumps of *Hepaticas* growing about in the borders were from 10 inches to 12 inches across, the double red especially giving almost remarkable clusters of flowers. Besides this well-known old form, the single blue, single white, and lobe-leaved, large blue *angulosa* are plentiful and very fine. Of course, these clumps had been growing undisturbed for several years. The *Hepatica* is very impatient of disturbance. It takes some four or five years ordinarily to get the plants fully established, but once they get hold and spread then they will stand for many years. I have always found it difficult to induce *Hepaticas* to thrive on a stiff retentive soil. Without doubt, the very fine roots that are thrown out so abundantly need a considerable proportion of sand in the soil to enable them to run freely. Still further, stagnant moisture is to the roots and crowns very harmful. It may be that at Reigate, where the garden to which I have referred is situated on a sharp slope, the formation of the ground, coupled with its natural porosity, helps to keep the *Hepatica* clumps free from surface moisture.—A. D.

Narcissus minimus is very charming, flowering at the foot of an old wall or nestling against a Lichen-covered stone in the rockery. It has been in full bloom for some days around London, and is worth cultivating not only for its earliness, but for the exquisite shape of the little flowers, like those of the common Lent Lily in miniature. A good break of it is effective, as the colour is a decided yellow. A little litter thrown over the bulbs in very rough weather, or, if the clumps are not too large, a hand-light used for a covering would give them needful protection from weather trials. A light soil and partial shelter are necessary.

Chionodoxa gigantea.—This *Chionodoxa* has now established its claim to distinctness. On its first introduction it was considered too near to *C. Lucilæ*, but good bulbs produce flowers of large size, some we measured a few days ago being just upon 2 inches across, rich blue in colour, and with

very little white, differing conspicuously in this respect from the familiar Glory of the Snow. It is not so free as *C. Lucilia*, but the larger flowers atone in a measure for their lesser quantity. It is a bulb that is suitable for pot culture, and we remember seeing in Mr. Ware's nursery at Tottenham several fine pots of it, the flowers appearing to advantage under these conditions. In even a large bed there is little deviation from the standard of size and colour and the plants show no tendency to run back.

Border Carnations.—Mr. E. Burrell, in his "Flower Garden Notes" at p. 125, says there is not a single miss in the beds of border Carnations, a statement I can also verify. On writing on border Carnations last autumn, Mr. Douglas stated that it is much better to plant them out in their final position in the autumn, even if late, and with these remarks I quite agree. I know some people appear to think that the layers are best left undisturbed until the spring before finally separating them from the stools, but such is not the best advice. I have tried both methods, and have proved that autumn planting is the best. To test it further, I left a few to plant out this coming spring, but those which were planted in the autumn are now in fine condition and well rooted. I should not have troubled with this note, only that on account of the layering being done late it was quite the latter part of October and the second week in November before they were all planted. Even at this time the roots were only just on the move, but the plants, on being severed and planted, started away at once and became established before the severe weather set in on Christmas Eve. It is not good policy, I know, to be so late in planting, but it has turned out successfully, and that is everything.—A. YOUNG.

HARDY FLOWERS AT HITHERBURY.

LOOKING over the extensive collection of hardy plants in the garden of Mr. Henry Selfe-Leonard, Hitherbury, Guildford, the other day (February 14), a few choice things were to be seen in flower and others showing for bloom. They are grown in unheated houses, and all the alpine species are placed so near the glass roofs of the houses, that they retain their dwarf habit, and lack nothing in profusion of bloom. The distinct and rather pretty dwarf *Viola alpina* was well in flower and bud, and had been blooming all the winter; the plant is not more than 3 inches or 4 inches high, and the flowers vary in colour, purple and lilac-purple, with streaks of deep purple. This was introduced about 1823 from Austria. The Bastard Box (*Polygala Chamæbuxus*) was flowering freely, and had been doing so through the winter; besides the pretty purplish-tipped flowers, which are fragrant, the plant itself is attractive as a dwarf shrub. It is an alpine plant, and was cultivated at Oxford in 1658. There are varietal forms of it in cultivation. The Carolina Galax (*Galax apophylla*) is a pretty North American alpine when in flower, but it is conspicuous at present in the alpine house from its quite crimson leaves. The creeping roots are of a deep red colour, which is continued up into the leaves. It was first named by Linnaeus, but has numerous synonyms, amongst others *Blandfordia cordata*. It was found in 1786 by a Mr. Fraser, of Sloane Square, when travelling in the State of Georgia, and as no botanist seemed to know it, he named it in honour of the then Marquis of Blandford. The plant produces spikes of small white flowers in July. *Saxifraga Stracheyi*, a very showy species, was in flower; it is a native of the Western Himalayas, and bears pale pink flowers. There is a garden variety with white petals. What a difference between this species and the several alpine forms also in bloom!—amongst them *S. oppositifolia superba*, with bright rosy purple flowers; *S. Burseriana major*, a densely tufted plant which is now very charming, the flowers white; *S. Frederici Augusti*, with nearly open yellow flowers; *S. Boydi*, also with yellow flowers, would soon be open, and *S. Boydi alba*, which is rather earlier.

Anemone (Hepatica) angulosa is at this season very lovely out of doors; its sky-blue flowers are quite charming. *Hyacinthus azureus* was in full bloom in the house, and will soon be in flower in the open garden. *Iris unguicularis (stylosa)* had been in bloom all the winter in a heated house; its solitary bright lilac-blue flowers are beautiful under glass. Mr. Leonard says it does not flower out of doors.

The plants in these unheated alpine houses are mostly planted out, and well placed amongst suitable pieces of stone, forming a miniature rock garden under glass. It has been found that some plants succeed better where lime or chalk is in the soil; others struggle for existence or die outright in it. A part of the border has been made up of soil containing no lime, but mixed with about two parts of slate broken up to one of the soil; in this has been planted *Ranunculus glacialis*, a difficult plant to manage; with it are planted *Geum rheticum* (reptans), also a difficult plant to grow, and *Primula Fœrkiana*, a hybrid of which *P. minima* and *P. glutinosa* are supposed to be the parents. Mr. Leonard will doubtless some day give the result of some of his experiments with soil in the pages of THE GARDEN. J. DOUGLAS.

ORCHARD AND FRUIT GARDEN.

CHANGING THE CHARACTER OF VINES.

WHEN market growers wish to change the character of their Vines, they sometimes, but not always, resort to the somewhat thorough plan of wholly clearing out the old and replanting with new; but in the case of private gardeners, this rather radical proceeding is neither possible nor always desirable. Clearing a house of Vines in order to start afresh means the loss of one or more seasons, as far as a crop of Grapes is concerned, and that would not be tolerated by most employers. Then, again, it is not always desirable to change the character of the whole of the Vines in a house, and the case is best met, therefore, by grafting or inarching varieties most preferred or needed on to others that are no longer required. In this manner the character of the whole or a portion of a house of Vines may be fairly expeditiously changed without the loss of a portion of a crop even. Nor is this the only advantage attending the practice I am about to describe. Some few varieties are actually improved in habit, if the quality of their fruit is not changed for the better, by being grafted on to others. For instance, Gros Guillaume on the Black Hamburgh stock rarely fails to produce bunches in abundance, the restraining influence of the same stock on Gros Maroc being also most noticeable. The last-named, if planted on its own roots, at first refuses to grow away satisfactorily, and later on the opposite prevails—a rank habit of growth, militating against productiveness. Madresfield Court is scarcely vigorous enough for a stock, but that estimable variety succeeds well grafted on most other varieties. It is scarcely advisable to graft late black varieties on other equally late forms, the Black Hamburgh being, perhaps, the best stock for any of these, though, if it is desirable in any instance to get rid of Alnwick Seedling or any other comparatively worthless variety, there is nothing to prevent these being turned into stocks. Nor need there be any hesitation about grafting black varieties on to white ones. The Muscat of Alexandria is really an excellent stock for any other variety of Grape, though too good to be changed in character if it is possible to grow it well under present circumstances. I have seen excellent Gros Maroc cut from rods inarched on to

Foster's Seedling, Gros Colman also doing fairly well on the same stock, but succeeding still better on the Muscat of Alexandria, though not under Muscat treatment. Should it be desired to improve the vigour of any variety without impairing its productiveness, then I would advise that this be grafted on to the Golden Queen. The latter is of robust habit and very productive, added to which it is not naturally late in starting into growth.

Owing to the great rush of sap that takes place when bud movement commences, Vines cannot safely be cut down and regrafted like ordinary fruit trees, and seeing that it is the aim of most cultivators to avoid the loss of a crop, this is no great disadvantage. At the same time this peculiar habit must not be lost sight of, nor the fact that there is a first and also a second upward rush of sap. If the first is anticipated, the scion may either perish from want of sustenance, or in the case of scions with their lower ends inserted in bottles of water heal over prematurely, a union failing to take place accordingly. The first rush of crude sap is not in any case favourable to grafting, being liable to literally swamp the scions. If the grafting is done after top-growth has well advanced, or, say, just when the first leaves are changing to a darker green colour, this will be when wounds will either heal or unite most surely. This would be very slightly in advance of the second rush of sap, and which the scion ought always to receive the full benefit of. Miss this second great flow of sap and the chances are the barks will fail to unite properly, and no strong growth be made by the scion during the first season at any rate.

There are four methods of attaching scions to stocks open to those who wish to experiment in that direction, viz., whip-grafting, bottle-grafting, inarching with ripened canes, and inarching with green wood. Of these the simplest and, I consider, the surest is the second process, the merest tyro being able to accomplish it successfully. What is wanted are fairly long grafts, or not less than 12 inches in length, the best being those obtained when shortening leading or young well-ripened canes, though prunings from ordinary laterals will do. These for a time ought to be kept half plunged in an outside border. When introduced into heat, one end should be kept in moist soil or water a few days prior to grafting in order that the buds be just on the move. These when the stocks are fit may be attached to either old wood, including the lower part of the stem, or, better still, to a well-placed and duly shortened side cane. Fit the scion to where it is intended to affix it, and then take corresponding slices out of both stock and graft, also tonguing both, that on the scion sliding into that on the stock. This slicing should be done in no half-hearted manner, as the inner barks must be reached in both cases, and the wounds may well be fully 4 inches long, and, as before stated, must correspond in size in order that the union of barks may be perfect. Small strong string ought to be used when binding the scion to the stock, and if grafting wax is available, cover the wounds with this so as to effectually exclude the air. Failing grafting wax, bandage over with Moss, and do not moisten this subsequently more than can be avoided, or otherwise roots will be emitted into it to the injury of the union. About 6 inches of the scion should be left below the point of union with the stock, and this being inserted in a bottle slung up for the purpose and kept constantly filled with soft water, there will be no likelihood of the scion perishing from want of moisture before the union has taken place. In the

course of a few weeks the bottles become crowded with roots and may be left to assist in the formation of a strong rod, being eventually removed in the autumn when the lower part of the scion is cut cleanly away from the stock. Supposing the Vine supporting the graft is in good health and fair play is given the latter, that is to say the leader from it is not smothered up by foliage, a fine fruiting rod should result the same season.

Inarching ripened canes is not often practised, but is worthy of more general adoption all the same. Whether this may rightly be termed a modification of bottle-grafting or *vice versa* I am not in a position to state, nor does it much matter. The mode of procedure is very much the same, points most to be observed being the advanced growth of the stock and having the scion or Vine to be inarched on to it just on the move. In addition to keeping the inarched portion fresh and growing till the union has taken place, the roots in the pot, if this is kept on the dry side at first and afterwards well supplied with water, also assist in the formation of an extra strong rod. One of the most profitable Vines of Gros Maroc I ever saw, this also annually producing extra fine show bunches, was inarched on to a Black Hamburgh stock from a strong pot Vine. It was not separated from its own roots, and the pot standing on the border rooted out strongly. Eventually the pot was broken, and the coiled-up roots are still to be seen, though partly soiled over. Under my own charge a strong rod of Gros Maroc, inarched from a ripened cane, is also still connected with its own roots in a pot. Instead, however, of the Hamburgh stock deriving any assistance from the roots in the pot it suffers from the connection, for the simple reason that from a few inches out of the soil in the pot another cane has been taken up the roof, and this for three successive seasons has produced crops solely—for the soil in the pot has frequently gone months without being watered—with the aid of sap sent down from the permanent Vine. This is another instance of abnormal sap movement that frequently takes place if not often observed.

Inarching young growing wood from a pot Vine to other wood of a similar age on a permanent Vine is a far more common method, and that longest known to me, of establishing a fresh variety on a stock. In this case it is possible to raise a Vine of a new or desirable variety from an eye and to strongly establish it on an old Vine the same season, bunches—as in the other methods detailed—being had the following year. The better plan in most cases would be to start a fairly strong pot Vine at the same time as the permanent Vines, one or more of which are to serve as stocks, are also started into active growth. One or, if need be, two young growths can be reserved on each pot plant, and when these as well as the selected shoots that are to receive them are moderately firm, though in active growth, the time has arrived for inarching. The stoutest part of the scion, or that as near to the pot as possible, should be fitted to the selected firm growth on the permanent Vine, the two being as nearly of one size as possible, and from each a fairly deep slice of bark should be taken, just avoiding cutting into the woody part, or a break may occur. Fit the wounds very neatly together and bandage lightly and closely with a strip of raffia. There will only be a slight check to the growth of the scion, union also taking place quickly. The young shoot to which the scion is affixed should be stopped at the third or fourth joint beyond the union, and when it is

seen the raffia is cutting into the fast-swelling wood, remove and lightly bandage afresh, the latter precaution to be also observed in the other cases, as the wood, if the union is perfect, thickens rapidly.

Whip-grafting I have not attempted often, but have been fairly successful each time this method of establishing a fresh variety on an old Vine was tried. These grafts may be inserted in old rods, or, and preferably, into much younger wood. In either case it is of the greatest importance that the first rush of sap in the stock is well over, while the buds on the wood furnishing the graft should only be just on the move—a graft to consist of a 2-inch length of young cane with a single bud half an inch from the upper end. At the back of the bud take off a slice tapering down to a very thin end, and tongue this one-fourth of the way down. From the stock cut a corresponding slice, the inner bark being well reached, and after a small downward nick has been made to receive the tongue in the graft, fit them closely together, bandaging tightly with small string and then well coating over with grafting-wax. There must in all cases be one or more young shoots reserved on the wood on which the graft or bud is inserted and beyond the latter, or otherwise there will be nothing to attract the sap up to the latter, and it will perish accordingly. These shoots should be kept stopped, and if the growth from the bud be taken good care of, it will develop into a fine cane the same season.

W. I.

Imported Peaches.—I am aware that the Cape Peaches are very much inferior to home-grown fruit, but what assurance have we that this will always be the case? If I am rightly informed, a great portion of the Cape Peach orchards are composed of trees raised from stones. Until quite lately there was no thought of exporting their produce to Europe, but now that quick transit and a perfected system of storage have enabled the Cape growers to place their fruit in a fresh condition in our markets, we may be sure that they will avail themselves to the fullest possible extent of a new source of revenue. It is evident that they will study the requirements of our markets, and ere long there will probably be a great improvement in the quality of the fruit sent us. I remember when Pine-apples from St. Michael's first appeared in Covent Garden it was said that, good though they were, home-grown fruit would always command a remunerative price. But Pine growing for profit in this country got its death blow. I much fear that in the course of time it will, in the words of a Covent Garden salesman, "be all up with Peach forcing in this country." Of late, almost every year adds to the localities from whence we draw our supplies of fruit and vegetables—Tomatoes from the Canary Isles, Peaches and Grapes from the Cape, Oranges from Florida, and Apples from the Antipodes. These sources of supply were not dreamt of a few years ago, and it seems probable that, as regards the importation of fruits, it is yet in its infancy. Fruit forcing in this country is now a precarious industry, for steam transit and ice chambers have rendered the importation of soft fruits practicable from all parts of the world.—J. C. B.

A useful Cherry—May Duke.—There is room for more of these. Coming in early as this Cherry does from a south, east, or western aspect, we have abundance of luscious fruit when more variety in our home supply is wanting. To have them to perfection these Cherries should hang till quite ripe, as a great change in size, colour, and sweetness takes place in the last day or two. It may be necessary to protect the fruit with netting. All that is necessary in training is to nail extended growth to the wall, cutting all foreright shoots. This Cherry is not particular as to soil;

our trees are planted in a gravelly soil, but they are well mulched with manure, which is of great assistance when the fruit is swelling. No doubt May Duke does well as a bush, but the buds and fruit must be protected.—E. W. B.

LIQUID STIMULANTS FOR FRUIT TREES DURING WINTER.

To many this may seem a useless proceeding, but from experience I know it is far from being so. Giving many kinds of fruit trees copious supplies of liquid manure during February and March is time well spent, and a capital way of renovating old trees. Trees fourteen years planted made more growth last year and of a superior quality to any they had made in any two seasons before since they were planted, owing to their having received abundance of liquid stimulants last February. I allude to varieties like Blenheim Orange, Beauty of Hants, New Hawthornden, Yorkshire Greening, Ribston Pippin, Golden Pippin and Devonshire Quarrenden—varieties that do not succeed in this soil. The application of liquid manure in quantity to their roots during a dry period seemed to give the trees renewed vigour. Certainly the crop of fruit on those named was fourfold in excess of that of any previous year. The foliage, too, had a healthier tone about it than at any time before. This, in my opinion, is a far better plan than digging in manure about the roots of trees that are not quite so robust as one would like to see them, because the roots 1 foot or so deep cannot possibly reap any advantage from surface-dressings of solid manure. Even if they could, I am not an advocate of burying manure so deeply, especially in heavy soil. Such a plan is more likely to cause canker in the young shoots than otherwise. Roots of established trees cannot be regarded as being too deep at 1 foot, and even more; therefore, to feed these with liquid stimulants is preferable to any other form, and if solid manure, either animal or artificial, has to be added during the winter, why should not stimulants in the shape of liquid manure be applied during the winter also?

I am a strong advocate for keeping the roots as near to the surface as possible, with a view to their receiving all the available aid from sunshine; but in the case of trees from ten to thirty years old, it is not possible to have them all in that condition. There is far too much liquid from manure heaps and manure-water tanks wasted every year through thinking that because it is winter the trees cannot absorb it. This is a mistake, but one that is easily remedied. It would be useless to apply liquid food when the soil is in a soddened state. Nothing less than a week of dry weather should elapse before applying it.

In renovating orchard trees of large size either with solid manure or liquid stimulants too much attention is paid to the soil in the immediate vicinity of the stem. Many persons think they are doing all that is necessary by pouring the stimulant on to the stems. The fibrous roots, which are really the feeders of the tree, are much further away than that. In the case of large trees the best roots are at least 15 feet away from the stem, and so on in proportion to the age of the trees. Take, for instance, a fifteen-year-old Apple or Plum tree growing on Grass; 80 gallons of liquid, where plentiful, would not be too much for such a tree at one watering. Wall fruit trees growing in borders that are cultivated to within, say, 4 feet of the wall are not in need of stimulating food to the

extent of those growing on Grass, because manure no doubt is added for the vegetable crops in front, whereas Grass, instead of adding nutriment to the soil, absorbs much of the food from it near to the surface. Gooseberry, Red and Black Currant trees growing in borders set apart for them will be all the better for a copious supply of liquid food, provided of course the trees are not in the habit of making gross growth. Damsons of the standard type of tree growing on Grass are much benefited by even frequent doses of liquid food during the winter. The mass of fibrous roots which these trees make needs support. Well-established trees go on bearing crop after crop of fruit without the least assistance in the way of food, but all the difference both in the size of the fruit and the colour of the leaves is apparent in trees that do obtain artificial support either in a solid way or by the aid of liquid manure poured on to the soil during the winter. There are instances where Vines would receive considerable aid from liquid manure during the winter. At any time during the winter after the leaves have fallen, all inside Vine borders should be examined, and the soil underneath the paths and elsewhere, not actually in the border, be thoroughly soaked with liquid manure from the farmyard tank. Thus treated the Vines will be much improved and the following season's growth considerably better.

E. M.

PROTECTING PEACHES WHILST IN BLOOM.

Most gardeners are aware of the advantages resulting from protecting Peach and Nectarine trees whilst in bloom, but the mode of doing this has to be gauged according to the ways and means at command. The worst form of protection is that where it has to be kept over the trees permanently the whole time they are in bloom, and very often much beyond this period if the weather should be cold and unseasonable. By far the least objectionable of fixed coverings is fish netting; light and air can penetrate through this, but not so those close-woven fabrics which are often used for the purpose. When these are fixed over the trees they are kept in a state of semi-darkness, and the flowers as they open, on account of the subdued light, are greatly weakened, and the fructifying organs correspondingly so. Under such treatment only weak flowers can be expected, and although a fair proportion of them may set, yet on account of the imperfect state of the fertilising, the small fruits fail to swell. Not only does this close covering conduce to the above evil, but it also tends to what gardeners term blister. This cannot be termed a disease, but it is brought about by cold winds acting upon the young and tender foliage, and is accelerated more or less by sudden exposure after a lengthened period of close covering. Some people look upon blister as a natural outcome of a cold and untoward spring, but I have proved that it can be almost entirely prevented. With the roots working in suitable soil and not too far from the surface, they are more under the influence of solar warmth, and the root-action is correspondingly strengthened. Many gardeners have to resort to the most primitive methods of covering; therefore it cannot be expected that the trees will escape all the ills that are likely to befall them during an untoward spring. With me blister is quite unknown. Keeping the roots working in an active state is one of the greatest secrets of open-air Peach culture, and with this assured, blister and non-setting will not be heard of.

The whole length of our Peach wall—100 yards—is surmounted with a glass coping, or rather a framework, into which are fixed squares of rolled plate glass just previous to the trees coming into bloom. Some people, I know, look upon this as an expensive luxury, but it has paid for itself over and over again from surplus fruits sold. Along the front are stretched, or rather hung, lengths of a

warm, net-like covering. The strands are not close together, but sufficiently far enough apart to allow of a fair amount of light reaching the trees if the weather was so cold that they could not be drawn up. It is fixed to the outer edge of the coping, along which runs a strong wire, and on to which the covering is hung. When let down it is tied in close to the wall at the bottom. It is astonishing the amount of cold it keeps out, and it has turned several degrees of frost whilst the trees were in bloom. The coping keeps the flowers dry, and with this assured, it takes a severe frost to cause the least injury. At the time the trees are in bloom, and if the day has been such that they could be uncovered, the blinds are pulled down about 5 p.m., and unless the night should be mild enough to allow of their being pulled up early in the morning, I wait until about 9 a.m. before pulling the blinds up. During cold days the covering should be kept down.

To prevent blister, the same course of procedure is adopted if the weather is likely to be unfavourable, like last season, for instance. Trees which have been completely covered and which, after the petals are shed, are exposed are sure to suffer from blister. If it could be managed, the uncovering should be gradual, and if a cold spell is likely to intervene, the trees should be covered again for the time being.

Y. A. H.

SHORT NOTES.—FRUIT.

Apple the Sandringham.—Although this is looked upon as being a good Apple for the month of January, it will keep well until the end of February. It is of handsome shape. Although it does not carry a lot of colour, it is a sort likely to be largely grown.

Apple Round Winter Nonsuch.—For fruiting in a young state, as well as being a good winter Apple, this is deserving of notice. With me where all other sorts colour so well this Apple remains quite green until gathered, changing then gradually to a pale yellow.—E. M.

Apple Gloria Mundi.—This Apple, which, according to Dr. Hogg in his "Fruit Manual," has no less than six names besides its original, is supposed not to keep longer than Christmas, but with me it keeps quite fresh until the middle of February. I cannot recommend it for a strong soil, it being too liable to canker. E. M.

Apple Waltham Abbey Seedling. It is generally considered that this Apple is not good long after Christmas, but this year I have been able to keep it fresh and plump until the end of February. It is a grand Apple in every respect, but when growing in strong soil it does not bear freely until the trees are old.—M.

Apple King of the Pippins.—Where the fruits of this variety were free from blemish of any kind in the skin at the time of gathering, they have kept really well this season; some with me were quite fresh as late as the middle of February. This is a really first-class Apple for a cottager, especially where the soil is light.—E.

Apple Alfriston. One of the best of late Apples is the above; its keeping qualities are well known to those who have had any experience of it, and those who have not should lose no time in securing a tree. The fruit with ordinary care keeps quite plump until March is well in. The habit of growth is upright; therefore, if any other kinds of fruit trees are wished to be grown underneath, this sort is a capital one to plant.

The weather and the work.—So far as we have gone, the winter on the whole has been favourable. Outdoor work, such as trenching, pruning, digging, &c., were finished by the end of the year. The autumn was mild and well suited for refilling beds with spring blooming plants (generally more appreciated than summer bedders), although last year some of the latter kept in bloom till late in November. A severe frost, varying in intensity from 5° to 25°, set in a week before Christmas and lasted till January 8, when we had a snowstorm of two days' standing. The severity of the frost made sad havoc in the kitchen garden. Tender Broccoli, such as Snow's Winter White,

Penzance, &c., were entirely destroyed, and Cooling's (an excellent variety) suffered terribly. Veitch's Model and Maincrop were the least injured. Spinach, Parsley, and spring Cabbage also suffered. The weather is now, and has been for several weeks unusually mild for the second month of the year. Although a good deal of rain has fallen during the month, we have had drying winds and occasional sunshine to enable us between showers to sow Broad Beans, Peas, Spinach, &c. Fruit trees and bushes are fairly well set with bloom buds. Roses, Ribes, and Lilacs are nearly in full leaf. I hope that they may not, as in many previous years, receive a sudden check.—P. DAVIDSON, *Iwerne Minster Gardens, Blandford, February 18.*

FERNS.

TREE FERNS FOR COOL HOUSES OR FERNERIES.

DICKSONIA ANTARCTICA.—As far as general utility and hardiness are concerned, there is probably no Tree Fern to equal or surpass *Dicksonia antarctica*. It is useful from quite the small plant when only emerging out of the seedling stage up to the grand specimens of imported growth with their noble-looking stems. They are particularly useful whilst in about 6-inch pots; when well established therein they can be used for decoration with good effect, making first-rate vase plants. Plenty of water, of course, must be given them; this is only a natural sequence when dealing with this and other Tree Ferns in a thriving state. The style of growth of this Fern whilst still in its earlier stages of development is very pleasing. It is then of a more spreading character than later on, for as it attains height and vigour a more erect growth is assumed. When young plants begin to show signs of forming a stem their growth in this direction can be considerably hastened by working a ring of Sphagnum Moss around the stem at the base. This process can and should afterwards be followed up as the roots take hold of it, adding at the base so as to increase the diameter, and also upwards amongst the stems of the fronds to add to the height. By this means I have been enabled to increase the height considerably, as much as 1 foot in three years when once a good start was made. Unless this system of increasing the height of the stems is understood, it may not appear to be altogether logical. That it is so in fact I have myself proved conclusively. To facilitate the process, the old fronds as they fade and are cut off should be left about a couple or 3 inches longer than is usually done; this affords a means of support to the Moss, which can also be worked up amongst the fresh green fronds as well. Then by keeping it all moist, not only by the syringe, but also with the watering pot (with a rose on), pouring it over the crown, fresh roots will soon push out and take entire hold of the Moss. This process of mossing up is entirely different from that of mossing up an old stem, an imported one, for instance: it is not often in this latter case that sufficient roots will push forth to hold up the Moss. In the former the roots in process of time envelop all the Moss, making a stout and massive looking stem. I was once somewhat perplexed when dealing with two fine stems of this Fern. I could not understand why they did not thrive better than they did soon after taking charge of them. Being some 9 feet or so in height they could not be kept quite so moist as I desired. Upon a close examination I found, to my surprise, that the two stems were dead ones, holes having been made in the crowns

and two young plants turned out therein. This was a way of making up to say the least that was not commendable, nor was it any credit to those who had done it.

In Williams's book on Ferns is given a plate of *Dicksonia antarctica* covered with snow in one of its native habitats. At Kew Gardens there are noble specimens of it in the temperate or Australian house, whilst at the Crystal Palace there is to be seen such a group of it as cannot be matched in my opinion anywhere else in the country. Most of these latter are plants that have to a great extent made their stem growth in this country. Standing as they do over the Lily tank they receive assistance from the moisture arising therefrom. Those at Kew, if my memory serves me rightly, are planted out and grow with amazing vigour, the fronds being unusually long. This, and other Tree Ferns also, are frequently given far more shade than they require. In small houses where quite close to the glass some little shading may be necessary, but it is in all respects a great mistake to shade them at all in larger houses. At the Crystal Palace there is no shade given them; they are a long way from the glass it is true; thus to some extent any possible danger from burning would be averted. At Kew they are closer to the glass, but not shaded I think, yet thriving so well. At Messrs. Veitch and Sons, Chelsea, no shade is given them, although closer even to the glass, the roof being of a ridge and furrow construction, yet in the best of health. At Gunnersbury Park there are two noble plants, supposed to be the two finest stems in the country, the house a lofty one, but the plants are even then sunk into the ground to prevent them touching the glass; no shading here again is ever given them. These instances are ample to prove that shading is not necessary save in small houses. With too much or constant shade, the fronds are not nearly so enduring, being at the same time liable to what I take to be a disease concurrent with shade and too much moisture. The fronds assume a brownish appearance somewhat similar to what one might attribute to red spider, but with no evidence of insects at all. This will extend from the tips of the pinnae and in due course make the fronds quite unsightly. In one house where several plants of Tree Ferns were grown, this failing used to occur every summer season, the house being heavily shaded and kept very moist. The shading was at last dispensed with entirely, and the growth afterwards was as healthy as possible, this being, I think, quite a conclusive proof of the source of the complaint.

In the way of insect pests the black thrips is about the most troublesome, attacking the lower fronds mainly, and if it is not detected, it will soon disfigure them. Where the syringe does not frequently reach the fronds on the lower sides there will be a congenial breeding-place for this insect. Brown scale is, next to thrips, the most troublesome, and if not stopped in time will quite spoil the fronds. Both insects may, however, be kept under by ordinary methods, the former by the syringe and fumigation, the latter by hand-picking and light cleaning with a soft brush and a weak insecticide. When plants are very much pot-bound and no further shift is desirable, a narrow margin of fibrous peat and Moss may be built up around the rims of the pots. The roots will soon lay hold of this, and provision will be made for more effectual watering. This is quite necessary in the case of plants with large heads, for even where a fair amount of room was originally allowed for watering, I have noted that in due course the roots and soil would be almost

level with the tops of the pots. Weak farmyard manure water, or that made with guano and a little soot, will greatly help such plants. When in this condition, it is hardly possible to give them too much water, two or three times a day being none too often to water them in hot weather. I once had a plant in a No. 1 pot which in course of time cracked the pot by reason of the mass of roots, the growth always being extremely vigorous. When the young fronds appear, and that in quantity together, which is the usual way in the case of healthy plants; it is an indication that even closer attention

plant upwards this *Cyathea* is extremely handsome, and worthy of every attention. Compared with the foregoing it is also much scarcer, but it should not be. In my opinion it should have a more peaty soil than the *Dicksonia*, only a little turfy loam being used, whilst the other may have half and half. Although it is a strong grower when in a healthy state, it does not make such a quantity of roots as in the other case; this can be readily attributed to the comparatively lesser number of fronds usually borne by a plant of relative size. I should add as regards the soil that I would use a



The Tasmanian Tree Fern (*Dicksonia antarctica*).

must be given them for watering. With a ring of from twenty to thirty young fronds growing quickly, the resources of any one plant must be severely taxed, and a check at such times means the crippling of the fronds, the points not developing in such a satisfactory manner. Next to *Dicksonia antarctica*, I consider

CYATHEA DEALBATA the most useful and serviceable of Tree Ferns. It may not be quite so hardy, but as regards its beauty it even surpasses, in my opinion, the first-named. It is well termed the Silver Tree Fern by reason of the glaucous, silvery shading of the lower sides of the fronds. The pale green of the upper sides of the same also makes it quite distinct. The stems are not usually so stout either, except when planted out. From a small

little *Sphagnum Moss* with it, chopped up fine. This will not only encourage fresh root action, but retain moisture as well. *Cyathea dealbata* is more sensitive even than *Dicksonia antarctica* to drought at the roots. If it remains dry for but a short time and the points of the pinnae commence to curl, it will be impossible to restore them to their normal condition. Should such a misfortune arise in either case shading for a time must be used, and that rather heavily, whilst the plant is thoroughly moistened all over and kept so for some considerable time. It is a rare thing for *Cyathea dealbata* to be troubled with insects; at least this has been my experience, and I have grown both from small plants to specimens for several years. Anything in the

way of potting may very well be attended to now, as the growth will soon commence. Where shifted into larger pots or tubs it is hardly ever possible to do much to the old ball when it is a mass of roots, but it will not hurt to cut away a portion at the base, so as to allow of sufficient depth in the new pot or tub, with a little room at least for a top-dressing. Firm potting is I consider quite essential, otherwise it will not be possible to retain the old ball in a moist condition. My practice has been to pot firmly, but not to give a large shift. When there is any suspicion of a newly-potted plant being too dry at the centre, a few holes 6 inches or more in depth should be made in the old ball, then when watered the desired effect will be obtained. I would only advise planting out in any case when there is an abundance of head room; it means more luxuriant growth, imparting more shade to things underneath if any be grown there. True, such a spot would be congenial to such as *Todeas* and *Hymenophyllums* where grown in quantity. Plants in an unhealthy state should be reduced so as to go into a pot of the same size or a smaller one according to the case. A GROWER.

NOTES OF THE WEEK.

Orchids at Dublin.—Mr. Goodbody sends us from Obelisk Park, Blackrock, Dublin, a good photograph of his charming Orchid house gay with *Dendrobiums*, *Cattleyas* and other Orchids in season, the whole making a remarkably fine display.

Narcissus Santa Maria.—This is a beautiful Daffodil, the finest introduced by Mr. Barr of late years. The flowers are of superb colour, deep self yellow both trumpet and outer segments, bold and of robust aspect, whilst the growth is remarkably free. We have seen it used lately with success as a pot plant, but it may also be made a good note of for the outdoor garden.

Iris reticulata was very charming a few days ago in the nursery of Mr. Morse at Epsom. The bulbs were in large clumps, and one saw dense masses of flowers rich in colour and as fragrant as Violets. At this season of the year when few things are in bloom *I. reticulata* has special interest. It grows almost anywhere and is perfectly hardy. We should like to see it more planted in gardens.

Easter Hellebores from Devon.—Every year seems to add new varieties to my hybridised Lenten Roses, and I have much pleasure in sending you a few specimens, which I hope may reach you in good condition.—T. H. ARCHER-HIND.

* * An exquisitely beautiful collection of large and spotted forms of this noble plant admirably grown. The flowers are larger than those grown around London.—ED.

Eranthis cilicica we noticed in bloom recently in the hardy plant house at Kew. It comes from the neighbourhood of Adalia, and bears a close resemblance to the well-known Winter Aconite (*E. hyemalis*). The flowers are similar both in colour and expression, but there are more lobes to the involucre and they are narrower. It is interesting, but not distinct enough to merit great attention.

Daffodils are opening fast. *Pallidus præcox* is in full bloom on the mound near the Cumberland Gate at Kew, its soft yellow flowers a welcome contrast to the more brilliant *Crocuses* planted in dense masses—a sheet of colour. A large bed filled with the variety *Golden Spur* will soon be covered with yellow flowers. Thus planted the effect is very rich. In the rock garden *N. minor* is in full bloom, also the little *N. minimus*.

The single white Camellia (*C. japonica alba*) is worth a note as seen in the nursery of Mr. Morse at Epsom. Large plants in full bloom there a few days ago were very beautiful, the

flowers of the purest white set off with the yellow bunch of stamens. It is a valuable and effective plant, and the flowers useful for cutting, being of such marked purity and size when fully expanded, whilst they are produced freely at a season of the year when white flowers are in request.

A charming edging of spring-flowering bulbs is composed of *Narcissus minimus*, *N. nanus*, the *Glory of the Snow* (*Chionodoxa Lucilia*) and *Snowdrops*. The combination is delightful, *N. nanus* flowering a little later than *N. minimus*. Those who wish to get pretty effects in the early spring by the use of inexpensive bulbs should take note of this arrangement. Individually, these flowers are interesting, but when thus associated they gain in interest.

Grafted Lilacs in France.—"J. C. B." makes a curious error about these, as until lately it was quite the exception to get any Lilacs but grafted ones in France. I bought a fine collection from a man with a good reputation as a Lilac grower, and they were all grafted on the wretched Privet, and those that are alive look much worse now than when I got them six years ago. I believe a large number of these Lilacs come from France to die and not to live, but soon I hope our own and other nurserymen will propagate the Lilac in the easy ways which "J. C. B." so properly recommends.—G. J. L.

Saxifraga Boydi is one of the most charming of Saxifrages in bloom now. It is a fine companion to *S. Burseriana*, also in full beauty; but whilst the flowers of this species are pure white, those of *S. Boydi* are of a delicate primrose colour, peculiarly soft and pleasing. The growth is compact and dwarf, and on every rockery it should have a place. Like *S. Burseriana*, it is very pretty in small pots in the greenhouse at this season of the year.

Lily of the Valley (Fortin's variety).—This very fine variety was commencing to bloom a few days ago in the nursery of Mr. Morse at Epsom. It is an exceptionally good form, and raised in France. The leafage is remarkably robust, the flower-spikes also strong, the bells large and of the purest white. There are many good varieties of the Lily of the Valley in cultivation, but this may be considered one of the best. When exhibited by Mr. Morse a few years ago at a meeting of the Royal Horticultural Society it was given an award of merit.

Lenten Roses of many kinds are in bloom at Kew. *Helleborus orientalis* is planted in the wilder spots with excellent effect, the greenish white flowers appearing in profusion, and visitors to the Royal Gardens will find several forms in perfection in the rock garden, as *H. orientalis*, *H. antiquorum*, *H. pallidus*, *H. colchicus* var. *punctatus*, *H. hybridus* and the ashy grey-coloured *H. purpurascens*. The Lenten Roses form a class of plants that connect winter with spring; they carry on the season of flowers until the Daffodils are in full bloom.

Evergreen trees in N. America.—Mr. O. C. Simonds, of Chicago, sends us some beautiful photographs of the effect of snow on Hemlocks and other Pines there in winter. They show some very graceful and natural planting, and how well the Americans photograph. They are of scenes in Graceland Cemetery in Chicago, of which cemetery Mr. Simonds is superintendent. It would be rather interesting to us to know the Evergreens that are quite hardy in that region where the winters are so severe. Although we can grow many evergreen trees in England, yet we often err in planting what are not really hardy, though some seem to thrive apace at first. In one of the photographs sent we notice the Austrian Pine seemingly happy.

Flowers at Chester.—*Andromeda japonica* in the open border is particularly fine here now. The dense racemes of pure white flowers, hanging from coral-like stalks, are arranged most gracefully, as you will observe, above tufts of healthy foliage. The general character of the plant is charming, and it is one of the most precious plants early in the season. *Epigæa repens*, with its delicate odour,

ought to command a wide circle of admirers. The little spray we send you was pulled from a plant unsheltered in the open air, and gives but a faint idea of the effect of a group of it. The spray of bloom of *Rhododendron omniflorum* sent is from plants protected in a cold frame. It is a charming addition to the floral resources of early March. Amongst the bits of bright beauty which offer themselves for attention on a March morning, *Bryanthus erectus* claims a place. The sprig sent was plucked from a plant standing in a cold frame, and is strikingly pretty when fresh and undamaged by postal transit.—DICKSONS.

Notes from Loxwood, Sussex.—The following plants are in bloom in my rock garden: *Saxifraga Burseriana*, *S. Rocheliana*, *S. luteo-purpurea*, *S. sancta*, *S. oppositifolia*, and the lovely *S. Boydi*. *Anemone blanda* has been beautiful for the last three weeks. Self-sown seedlings are springing up in many places. One cannot have too much of this lovely early *Anemone*. *Soldanella alpina* is in full bloom. It has never flowered here before, and the result has been obtained by elevating a small piece of glass over it through the winter. Hardy *Cyclamens* are very bright. How they revel in a mixture of sand, leaf-mould and mortar rubbish! *Iris reticulata* has been out the last ten days, a variety I have as *Nelsoni* being much more beautiful than the type. *Narcissus minimus* and *Muscari azureum* out together make a charming combination. With good patches of *Erica carnea* and *alba* and many coloured *Primroses*, the rockery is very bright, and *Chionodoxas*, *Puschkinias*, *Scillas*, &c., are opening very fast this mild weather. A few thousand *Crocuses* planted in Grass have been a sheet of gold for the last week.—M. C., Loxwood House, Billingham, Sussex.

Blue Primroses.—Mr. G. F. Wilson brings us from his garden at Oakwood a beautiful gathering of these from about thirty distinct seedlings from Scott Wilson. Among them are various shades of blue, lavender, and purple, and some of the varieties have a very distinct eye.

Royal Horticultural Society.—The society will hold its next display of fruits, flowers and vegetables in the Drill Hall, James Street, Victoria Street, Westminster, on Tuesday, March 14. At 3 o'clock the Rev. Prof. Henslow will lecture on "Some effects of growing plants under glass of various colours."

Galanthus Fosteri.—In looking over some plants of *Galanthus Fosteri* received from Herr Max Leichtlin two years ago, one flower attracted my attention as being larger than the others. On examination I found that it had four sepals and four petals. Will any reader tell me if this has been observed before?—W. M.

Purple in flowers.—We have had several communications from our friends on the great purple-purple question which we regret we cannot find space for. We hope our friends will write us on things more useful to the reader than questions as to the colours of flowers, which are not, we fear, understood by our readers generally.

Planting shrubs (East Devon).—Any time in the autumn would be suitable.

Names of plants.—*H. Vincent*.—*Restrepia elegans*.—*J. Thompson*. 1, *Lycaste plana*; 2, *Maxillaria leptosepala*; 3, *Cattleya Triana*.—*John Hemings*.—1, *Asplenium Bolangeri*; 2, *Aspidium trifoliatum*; 3, *Nipholobus pertusus*; 4, *Balanium Culeita*.—*H. Thomas*.—1, *Odontoglossum gloriosum*; 2, *Oncidium cucullatum*; 3, *Pilumnus laxa*; 4, *Phajus Wallichii*.—*S. N.* It appears to be *Dictyogramma japonica*; send again when fertile.—*W. Griffiths*.—*Cardiff*.—1, *Hymenophyllum tunbridge*; 2, *Asplenium tenellum*; 3, *Odontosoria tenuifolia*; 4, *Hypolepis distans*.—*G. Everett*.—1, *Peperomia marmorata*; 2, *Tillandsia Lindenii*; 3, *Eranthemum pulchellum*.—*C. Le Grand*.—*Atacra cristata*.—*E. W.*—1, *Saccelabium Harrisonianum*; 2, *Lycaste Measuresiana*; 3, *Odontoglossum gloriosum*; 4, *Cypripedium callosum*.—*B. Frampton*.—Flowers quite spoiled; impossible to do anything with them.—*Pat.*—*Seilla bifolia*.—*J. Bramley*. 1, *Asplenium viviparum*; 2, *Pteris cretica albo-lineata*; 3, not recognised; 4, *Francoa ramosa*.

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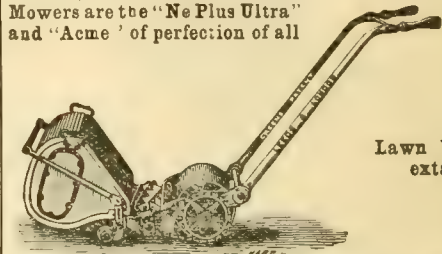
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No. 1113. SATURDAY, March 13, 1893. Vol. XLIII.

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ORCHARD AND FRUIT GARDEN.

MARKETING FRUIT.

WITHOUT committing myself to any positive assertion in the matter, I am yet under the impression that there is not quite so much fruit sold from private gardens as was the case, say, five years or rather more ago. Nor are the reasons for this by no means greatly-to-be-regretted decline of the, at one time, very prevalent practice of marketing anything and almost everything that could be sold from a garden very far to seek. Instead of market gardening as practised by private gardeners proving such a highly remunerative departure as employers fondly imagined it would be, the returns were, in very many instances, anything but satisfactory. As a matter of fact, if a strictly fair account had been kept, the balance would have shown a loss on working expenses, let alone the wear and tear incidental throughout. Undoubtedly, the competition by private gardeners did, and still does, operate injuriously against *bona fide* market growers, inasmuch as it serves to swell the bulk of produce consigned to the markets and keeps down prices considerably. All the same, market growers have such an advantage over private gardeners, that they can afford to laugh at their comparatively puny efforts to compete with them. Now-a-days market salesmen scarcely thank what we may term amateurs for sending dribbles of anything to them. They, and more especially some of the Central Avenue fruiterers, are always glad to know where they can send for extra fine samples of fruit just when they want them, in response to a telegram it may be, and they also fully appreciate regular supplies of first-class produce properly selected and packed. What they care very little about are fitful supplies, while their patience is not long proof against frequent badly packed consignments. Now in very many private gardens it is only the surplus produce that is marketed, and it need be hardly added that it is not always the best of everything that is sold, but rather the opposite is disposed of. Yet it is only the best that, as a rule, sells well now-a-days, inferior produce at times hardly paying for the trouble of packing and carriage.

Private gardeners have the advantage so far in not having to keep a regular profit and loss account, but in all other respects they are very much at a disadvantage. The majority have to do the best they can with antiquated houses, worn-out vines or trees, as the case may be, and a thousand and one difficulties the market grower knows next to nothing about. Some few are in a position to renew either their vines or trees and the borders supporting them whenever it is necessary that this should be done, and can have what they need in the shape of labour and manures, but the great majority are very badly situated in these respects, and yet are supposed to keep up a constant supply of fruit in season for home consumption, and, in addition, compete and make money in the open markets. The way

out of the difficulty that suggests itself is heavy cropping, and a very poor resource it proves. Recently a correspondent in THE GARDEN mentioned having received prices for Peaches that, without qualifying remarks, cannot be but misleading. Extra fine fruit, or such as realised those exceptionally or what might be termed old-time prices, cannot be grown as a rule very thickly on the trees, but must have the space recommended by the leading authorities, or something like a square foot of tree surface to each. Not only must either Peaches or Nectarines be extra fine, but the colour has also to be good for high prices to be obtained, and even then there is no certainty about it. All the heavily handicapped private grower can do is to crop moderately heavy, so as to have enough for home use as well as a few dozen for sale, and endeavour to colour these well. If one large fruit was considered equal to two or three smaller ones for home consumption, then lighter cropping might safely be resorted to, but, unfortunately, in many establishments so much fruit is ordered to be sent in every day, and large samples are, therefore, so to speak, wasteful. This is no imaginary statement of the difficulties under which private gardeners labour, nor is it confined to Peaches and Nectarines alone. It is much the same with Grapes, Figs, Pears, Strawberries, and most other fruit, and there is, therefore, not nearly enough encouragement given to the struggling gardener. Let those employers who would have fine fruit constantly before them see that less waste than formerly takes place outside the dining-room. Limit the demand to more reasonable compass, and it will then be more often the gardener's fault if over-cropping takes place, and he will also have fewer excuses to offer for lowness of prices received for surplus produce marketed. This season there is every prospect of a good bloom on the fruit trees generally, those under glass as well as the majority in the open being in a very promising condition. If only we can preserve a fourth of the bloom that opens, good crops will be had on most of the trees, and should thinning out be fortunately imperative, let there be no half measures, especially if marketing be the order of the day. What is most in demand is large showy fruit, and if this is presented in a perfectly sound or unbruised state it will usually fetch good prices. I. M. H.

Pear Louise Bonne of Jersey.—No Pear is more worthy of a place in the garden, either as a pyramid, espalier, or against the wall, than this variety. There are larger kinds, but none handsomer when well grown. I have a pyramid some 30 feet high which never fails to bear. Some seasons back the fruit from this tree was invariably small and spotted, so much so as scarcely to be recognised as the same variety grown against a wall, but with liberal applications of potash and stimulating manures I now secure a sample about double in size and free from spots; in fact, the crop is worth quite three times as much as formerly.—E. W. B.

Keeping Blenheim Orange Apple.—This is certainly one of the best of our English varieties. It succeeds well in most localities, and is generally a sure cropper. Its suitability for either dessert or cooking recommends it for every collection. I have only a small garden and can grow but few kinds, but I find this one of the best keepers, and if stored properly, it will retain its flavour and keep in good condition till March and even later. I store mine, taking care to gather them carefully, in an old summer-house, which stands on the side of a hill facing south-west; it is completely overgrown with Ivy and opens to the north. I place them in hampers holding about a bushel, and

stack them one over the other. The house is inclined to be damp, and to prevent it becoming too much so, I continuously keep the door open day and night, excepting when there are more than 5° or 6° of frost. I am quite convinced that all Apples will keep much better and their seasons of usefulness be greatly extended if kept in this way. I have no doubt where such a house is not obtainable, a good cellar would answer equally as well.—W. MACKAY, *Exeter.*

Peach trees in bloom at Bexley Heath.—A very fine sight may be seen in the nursery of Messrs. Burton and Son, the Peach and Nectarine growers at Bexley Heath, where the trees, as at present, are in full bloom. One house is 220 feet long, and the healthy trees, covered with flowers, are a splendid picture. July and August are, of course, the season of most interest to Peach and Nectarine growers to see this nursery, but a visit in late February is well repaid when the trees are in full bloom. By liberal cultivation excellent results are got, and the chief varieties grown are, of Peaches, Princess of Wales, Goshawk, Gladstone, Sea Eagle, Early Beatrice, Grosse Mignonne, Royal George, Alexandra Noblesse, and Hale's Early; whilst of Nectarines note may be made of Elruge, Lord Napier, Pine-apple, and Violette Hâtive.

PLANTING STRAWBERRIES IN SPRING.

IN many gardens where runners were not prepared for planting in August or September the planting will have been deferred till spring, but as at this date (March 7) the roots are active, no time should be lost in getting the plants into their permanent quarters, and unless some care is taken good results cannot be secured. In lifting the young plants as much soil should be obtained as possible, taking every care to preserve the roots intact. I have adopted the pot system with those kinds that do not winter well, and find it answer admirably, as the plants are readily transferred to their fruiting quarters and push away rapidly when planted out. The pot system may often be adopted by those who have a crop growing on land in the early autumn and cannot afford to destroy it; by getting late runners into 4½-inch pots they will not lose so much time as frequently occurs by planting or lifting out of rows. In many gardens there will be a scarcity of good runners unless plants are grown specially for that purpose, and when ground is scarce the layering of runners into 4½-inch pots will not take long. These should be plunged over the rims in beds, and at this date good plants can be had either for fruiting or the production of runners for stock. These plants will give a few very fine fruits this season, and a very heavy crop next year if planted in good land. After the second crop they should be destroyed, the ground trenched and planted with a different crop. By this mode of culture extra fine fruits are secured the first season, but, of course, not in great quantity. The flowers also, to get extra good fruits, will have to be thinned, and a good mulch, with plenty of moisture, will be required in a dry season. When planted out of rows from runners planted late last autumn, as previously noted, it is important to secure as many roots as possible if cropping is allowed the same season. Of course, where it can take place, entire removal of all flower-trusses from spring-planted runners would assist in the production of strong early runners and a very heavy crop of fruit the following season. In many cases where weak runners are secured late in the autumn, this last mode of culture would be advisable, as when planted late and not at all strong, there is often much loss of plants. Another equally useful plan may be adopted, that is, planting out doubly thick in the autumn, carefully lifting every other plant early in spring, fruiting those not lifted and using the newly-planted ones for the production of stock. In planting those potted up into 4½-inch pots in autumn, it is necessary to remove the drainage and to slightly break the ball of roots. When Strawberries occupied the same ground for years, it was important to pay every attention to manuring and deep cul-

tivation, but under what may be termed the yearly system, more choice of soils can be given the crop. Deep cultivation is equally necessary with ample room for the foliage to develop, and to prevent damp or decay in wet seasons. In planting on light soils, it is important to have the ground prepared a few weeks before to allow it to settle. In light soils it is also necessary to well tread, or even roll, before planting, as the ground should be in as solid a state as possible. In dry weather a mulch of spent Mushroom manure or litter will be of great assistance.

G. WYTHES.

PEACHES FOR PROFIT.

WHEN a man can grow Peaches on open walls good enough to compete with the best grown under glass, he may reasonably expect much higher prices than fall to the lot of the ordinary cultivator of this fruit. Possibly "Y. A. H." may be favoured by soil and climate. I should imagine this to be in some measure the case, as in the article which gave rise to this discussion he remarked that Peach culture would probably only be profitable where the soil is naturally favourable. This, however, would in no way detract from "Y. A. H.'s" skill as a Peach grower, as the really good gardener is the one who knows how to profit by favourable conditions, climatal or otherwise. I cannot, however, understand how anyone with "Y. A. H.'s" experience as a fruit grower can fail to perceive that the skill which produces such fine Peaches in this country in the open may be employed with equally good or even better results where the climate is so much more favourable. "Y. A. H." truly says that the value of a Peach is gauged by its lusciousness and outward appearance. What gives it these valuable characteristics? Is it not primarily sunshine, for without this in a more or less degree the best culture would be at fault? Putting on one side the Cape Peaches, which Mr. Webber says do not much affect the value of home-grown fruit, we have those from California to reckon with. I have been informed by a Californian grower that Peaches are produced in that land of brilliant sunshine with no more trouble and even more certainty than Damsons are with us. The Californians are but just realising how great are the potentialities of their climate for profitable fruit culture. They now know that, thanks to the ice chamber, their soft fruits can be placed on the markets of Northern Europe in a perfectly fresh condition.

Mr. Groom states that he saw plenty of these Peaches in the fruiterers' shops in his locality last season, and that they were of excellent appearance. What will they be when the Californian growers have had time to make themselves acquainted with the requirements of our markets? It may be taken as absolutely certain that they will plant the varieties which command the highest prices with us, and what is to hinder them doing as well as in our country, which is notoriously unfavourable for the Peach? I am sorry to take a pessimist view of anything relating to market culture, but one cannot or ought not to ignore facts. These to one who has been a witness of the effect which foreign imports have had on home-grown fruits during the past thirty years indicate still greater changes. I have no doubt that the near future will bring us a bulk of foreign Peaches that in quality may satisfy so good a judge as Mr. Webber.—J. C. B.

—Mr. Groom need not trouble himself or your readers about the competition in Californian Peaches. So far as they have reached us hitherto, they have met a very poor market, and, if anything, have been below the class of Cape fruit, being clingstones also. They certainly have never reached us in "pretty boxes and laced paper," so that I think he must have been misinformed as to the origin of those he saw. Last year in September and October, Peaches were sent from France packed as he states, but they met with no trade, being clingstones, and, although pretty, were of the very lowest quality. I recollect overhearing a conversation between an American and a man in my

employ, when the former, after being enlightened as to the growth and value of hothouse Peaches, replied, "I guess you do get a big price in this country. We grow them by the bushel; in fact we feed the pigs on them." The retort was, "No doubt, sir; but I guess that is all they are fit for."—J. WEBBER.

RETARDING PEACH BLOOM.

ON page 176 "Y. A. H." gives it as his opinion that the advantages gained by retarding the flowering period of Peaches and Nectarines in the open are more fanciful than real. I think differently, and, in fact, am one of those individuals who "now-a-days" advocate the untying of the shoots from the walls during the early part, with a view to retarding flowering. At the same time, I must disclaim any originality in the matter, and if "Y. A. H." would take the trouble to read what some of the old masters of the art of pruning, training and cultivation generally have to say, instead of confining his attention to contemporaneous literature, he might avoid mistakes. He says, "It has become the practice now-a-days for some people," &c.; whereas, instead of its being a new idea, it dates back to the beginning of the present century. Probably there never was and never will be a more expert grower of hardy fruits than Mr. McIntosh, of Claremont and elsewhere, and so well did he write and advise upon this important branch of horticulture, that modern authors have not hesitated to copy his works wholesale. This is what he says in his January calendar of operations anent retarding Peach and Nectarine bloom:—

If the trees have not been disengaged from the walls in December, they should now be done, that is, by unailing them and securing the larger branches only to the wall, to prevent accidents from snow or strong winds, or a few stout poles may be placed between the trees and walls, to which some laths or cords may be attached for the purpose of having some of the leading shoots of the trees affixed to them. This will prevent their being broken by accidents and admit of more readily getting at the branches when the pruning goes on; besides, if kept in this position till the end of February or later, it will greatly retard the buds from swelling, and consequently give them a chance of escaping from severe frosts in spring during the time they are in blossom.

This—written before "Y. A. H." had any idea of gardening and most probably before he was born—has been acted upon, and the plan recommended at different times by leading gardeners ever since—Mr. W. Coleman, if I remember rightly, being included in the list. "Now-a-days" should, therefore, not have been used, the proper wording being, "For many years past it has been the practice," &c.

As to the advantages or otherwise of the plan, all I need say is that if our Peach and Nectarine trees had last spring been in full flower one week earlier there would have been no fruit. Only the latest buds escaped destruction, and if these had been expanded or the fruit set the frosts would have blackened the lot. If we only derive benefit from the practice once in every six years we are still repaid in adopting and justified in recommending retarding every season. When the trees start into active growth very early the flowers might escape or be in advance of a late frost, but the fruit unless well protected would not, and it is very certain the latest trees to start make the healthiest progress as far as leafy growth is concerned, cold winds greatly injuring the tender leaves and shoots. Evidently "Y. A. H." does not admit that keeping the bearing wood well away from the walls retards the flowering period. If there is no warmth radiating from the bricks or shelter afforded, why trouble to plant against them? Why not do away with such expensive aids to fruit culture and plant Peaches and Nectarines in the open?—W. IGGULDEN.

Late-kept Gros Colman.—It is interesting to read the remarks of "W. I." on this subject. The paler bunches are always to be preferred for the table if sweetness and flavour are the test. Compared with Lady Downe's, I much prefer Gros

Colman for keeping either on the Vine or in the Grape room, as there is far less waste with the latter variety with also double the weight per Vine. Both keep equally well as regards the shrivelling of berries, but decay is more prevalent in Lady Downe's. The skin of this being hard, moisture settles at the point where the berries touch and then they decay.—STEPHEN CASTLE.

Apple Peasgood's Nonsuch.—It may interest some of your readers to note the crop which was gathered from a small bush of Peasgood's Nonsuch Apple last autumn. The bush has been planted here only three years. Last autumn it produced fifteen Apples. Two were deformed and imperfect. The remaining thirteen weighed on an average 15½ ozs. each. The largest weighed 19 ozs., and the smallest 12½ ozs. The fruit was not thinned, but was left exactly as the bush produced it.—H. MIDDLETON ROGERS, *Rust-hall Elms, Tunbridge Wells.*

Pear Glou Morceau.—As a wall Pear, and it is not particular as to aspect, this is one of the best late kinds, ripening about Christmas. The fruit is large, of first-class quality when well grown, and the tree with me has been a constant bearer. When black spots or cracks are prevalent on the fruit, they are generally a sign of want of potash in the soil. This may be remedied by the application of wood ashes or German potash salts. These Pears should hang on the tree quite late, even till the leaves are partly off.—E. W. BEAVEN, *Holmer, Hereford.*

CAPE FRUIT.

GRAPES.—At the meeting of the Royal Horticultural Society on the 14th inst. there was an interesting exhibit of the above, and various opinions were expressed as to their value for market. From close observation I should say there is a good opening for this fruit, as the Grapes are much superior to the ordinary Chasselas or Muscadine imported in barrels and sold in this country. The berries are larger and of much better flavour, being firmer and less damaged in transit than when large quantities are packed in barrels in sawdust. There is more finish, and with careful packing the bunches present a really nice appearance. I notice the stalk is much firmer than in those usually imported; this to some extent preserves the berry; the skin is also thicker. Such fruit carefully packed should in time find a ready sale, as there is not so much waste as in Grapes packed in barrels and the flavour is much better.

MELONS.—At the same meeting there was a novel exhibit in the way of ripe Melons, and here our Cape friends have a wide field open to them, as we cannot produce Melons in March, at least not worth eating. The Cape fruits, though over-ripe, were little inferior to many of our summer fruits. They were rather thicker in the skin. The fruits sent, on the whole, possessed several advantages—size, nice appearance and fair flavour, beautifully netted and of good shape. Like our fruits, the best-flavoured were those with decided colours, such as green. The pulp is coarser than in home-grown fruits, but it is not at all unpleasant to the palate. If these fruits can be sent in good condition, there will be a demand as the season advances.

PEARS were also staged at the same meeting, the variety being Williams' Bon Chrétien. Some of the fruits were past their best, but when it is remembered how difficult it is to catch a Williams' Pear, it will not be considered surprising that some of the fruits had suffered. The fruit presented a nice appearance, the skin being clear, and the flavour equal to that of a home-grown sample. There will be a large demand for this fruit if it can be imported equal to that tested, as Pears at this season will be a valuable addition to our somewhat limited dessert. Care will be required in selecting and gathering at the proper moment, so as to arrive in this country in a sound state.—G. W.

The English Flower Garden.—Design, Views and Plans. Third edition, revised, with many new Illustrations. London: J. Murray, and through all booksellers.

FLOWER GARDEN.

THE ROCK GARDEN AT BROADLANDS,
NEWTON ABBOT, DEVON.

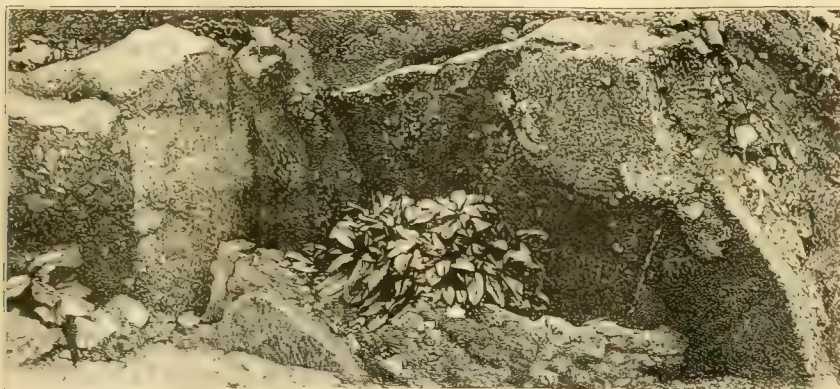
THE illustrations represent very small portions of a pretty rock garden in the grounds of Mr. J. Vicary, at Broadlands, Newton Abbot.

In this case the rock garden was not entirely

which are doing exceedingly well in the peaty bed provided for them. A projecting group of rocks in a more sunny situation has been set apart for the choicest kinds of Saxifrages. That the queen of Saxifrages (*S. longifolia*) occupies a prominent position goes without saying. It is represented by a fine specimen measuring nearly 1 foot across its rosette of silvery leaves. Other kinds here planted are *S. lantoscana* superba, *S. oppositifolia* and its

a recess adjoining this rock is represented. The lower part of this recess is somewhat shady, and has been prepared as a bog-bed for Cypripediums and other plants, with flat stepping stones arranged between to ensure easy access. The rocky wall in the background of this recess is somewhat dry and sunny, and therefore well adapted for the growth of the large specimen of *Sedum japonicum macrophyllum* (syn., *S. spectabile*) seen on the illustration.

VISITOR.



Part of rock garden at Broadlands, Newton Abbot.

new. The stones used were very large flat pieces of red sandstone, which had been piled up in such a way as to resemble horizontal strata, but they excluded the possibility of growing alpine plants other than the coarsest kinds. As the owner, however, is an enthusiastic lover of choice alpine plants, the greater portion of the old rockwork was promptly pulled down, and reconstructed on a different plan. In reality deep, but narrow, fissures had been constructed. The crevices underground were mostly made with thin pieces of limestone, and an abundant supply of limestone chippings was mixed with the soil used, with the exception of one or two portions of the rock garden set apart for "lime haters," and here the fissures underground were made with pieces of granite and sandstone. All visible stones, however, were of one kind only, viz., red sandstone. In planting, the system of grouping several plants of the same kind together has been followed. Some rocky projections emerging from the ground in a sunny situation are devoted chiefly to Edelweiss and several Drabas and Androsaces. The Edelweiss looks remarkably healthy and has flowered profusely. The next ledge is covered with *Androsace lanuginosa*, whose flowering shoots fall gracefully over the stone. *A. sarmentosa*, *A. Laggeri*, and *A. ciliata* are doing equally well, and a fine specimen of *Androsace foliosa* is shown on the smaller of the two engravings as growing luxuriantly at the foot of this rock. Drabas are represented by *D. brunifolia*, *D. aizoides*, and *D. cuspidata*. The background of this rocky group is formed by choice kinds of very dwarf shrubs, which, however, are planted in such a way as not to endanger the well-being of the choice alpine.

A recess is devoted to Gentians. *Gentiana verna* has done well, and the always pleasing *Gentiana acaulis* is forming a very large irregular patch close to the path. Less successful has been the lovely *Gentiana bavarica*, which was planted in peaty soil with an abundant admixture of Sphagnum Moss, but, being partly shaded by large trees, it died after a struggle of eighteen months. A shady recess beneath some trees has been adorned with choice hardy Ferns and varieties of Hepatica,

variety *pyrenaica* superba, *S. Burseriana*, *S. luteo-purpurea*, *S. caesia*, *S. sancta*, *S. juniperina*, *S. crustata*, *S. rosularis*, and many others. In a moist position at the foot of the rock *S. Hirculus grandiflora* is flourishing, the contrast of its large yellow flowers against the red colour of the sandstone being particularly pleasing. Close by in a moist place is a large bed of *Primula rosea*, which is a charming sight when in full bloom.

Some rocky ledges, specially constructed for plants generally averse to limestone, are decorated with *Androsace carnea*, *A. glacialis*, *Dianthus glacialis*, *Anemone sulphurea*, *Achillea nana*, *Ranunculus glacialis*, and *Potentilla nivea*. In an adjoining group, lime-loving plants again predominate. A large "stratified" rock forms the next feature. It is planted on the top with alpine *Rhododendrons*, and in the moist and shady fissures at the sides a group of various *Ramondias* is in a flourishing condition, while other ledges are adorned with spring and autumn-flowering *Cyclamens* in their shady parts and *Opuntias* and similar plants in the portions exposed to the sun. In the second (the larger) engraving

JAPAN PRIMULAS.

A LONG trade list of these beautiful Primroses serves to remind me of their exceeding value. On rockwork where there is a good depth of cool soil that is in no sense water-logged, these Japan Primulas give charming clumps of leafage and lovely clusters of flowers. I prefer for forming outdoor clumps to pot up into 4½-inch pots a few of the stoutest of the rhizomes, and after leaf-growth has been made in a cold frame to turn the clumps out carefully where to grow, and they will bloom long and profusely. The rich deep reddish tints now found in several varieties are most welcome in the spring, when whites, yellows and blues so strongly predominate amongst hardy flowers. Such clumps may be left to take care of themselves for two or three years, and if harm comes to them, the stock kept up by pot culture for ordinary house



View in the rock garden at Broadlands, Newton Abbot, Devon.
Engraved for THE GARDEN from a photograph sent by Messrs.
R. Veitch and Son, Exeter.

purposes should always enable these outdoor clumps to be replaced. Under ordinary care the roots or crowns increase rapidly. In no

case should they be allowed to remain in the same soil or pots two years in succession. If that be so, then the rhizomes become weak and will not produce flowers, whilst if broken up and replanted in fresh soil they need a year at least to become strong enough for flower-production. It is but too probable that these hardy Japan Primulas have suffered in reputation more from lack of care in cultivation and in breaking up the clumps, selecting and repotting the best crowns, than from any other cause. Whilst we see *Primula obconica* almost everywhere, and it is nearly always in bloom, yet is it but a somewhat monotonous plant, for all efforts to secure in it variation of colour in the flowers have practically failed. It is true a few larger flowered forms have developed and of slightly deeper mauve tints than are commonly found, but the average colour of the flowers remains. Now *Primula Sieboldi* gives us white, pink, red, mauve, blue, purple, and various other hues in flowers that are much finer than are the best of *obconica*, and these flowers are very charming in a cut state for ordinary purposes. Good masses composed of selected crowns from nine to ten in a 6-inch pot will bloom from the beginning of March till the middle of June if some be retarded and others given a little warmth. Outdoors they bloom from the middle of May for some six weeks, the deep colours giving in the sunlight glorious clumps of welcome hues. The Primulas like soil composed of one half good fresh turfy loam and the rest a combination of leaf soil, old hotbed manure, and sand. Potting may be done at any time after the foliage has died down until the crowns show signs of breaking up, but it is always better to get it over before Christmas. A. D.

Snowdrops in the Grass.—The opening days of February brought the Snowdrops into flower at an amazing rate, and it is hoped that the weather will remain favourable, so that we may enjoy their charms for a lengthened period. It is now some seven or eight years since I first commenced planting Snowdrops in the Grass, and since that time several thousands of bulbs have been planted, to appear each year in larger numbers. The situation has enabled the planting to be carried out on an extensive scale and also in varied forms to suit different positions. In all cases they are in the Grass, and thousands are pushing up in all directions—upon sloping banks, around the margins of trees, especially the Yew, and also in irregular masses. Anything approaching formality was not thought of in planting. What can be more cheering when all around is desolate than to have the whole place as it were brightened up by these heralds of spring? There is but little trouble in planting. All that is needed is an iron dibber to make holes, the bottom being filled in with coarse sand or fine soil as a base for the bulbs, the holes to be further filled up with soil after the bulbs are planted. Rolling back the turf and manuring as some advocate are quite unnecessary, as I know perfectly well by the kind of soil ours are planted in. The secret of success of the flowers appearing in greater numbers yearly is in leaving the Grass to grow up with the foliage and not cutting it upon any account until the leaves have withered up. That is how we treat ours, and their condition at the present time proves that it is right.—A. YOUNG, *Abberley Hall*.

Harrison's Musk.—The only difficulty in the culture of this useful plant is in keeping the stock in a healthy condition during the winter. Most of the *Mimulus* seed freely, yet I have never known this to mature seed, which is, perhaps, owing to its being of hybrid origin. The best way to keep the stock plants is to place them in a cool shady position in the autumn. This Musk will stand some frost, but it is better to have the plants where the temperature does not fall below freezing point. If

removed to a warmer position about this time the plants will start into growth, and cuttings may be taken. These will root freely on a hotbed or in a close, warm house. Once get a few healthy young plants, and there is little difficulty in getting up a good stock. If potted loosely in any ordinary compost the plants grow very rapidly. Grown fully exposed to the sun in an intermediate house, they soon make useful plants for the conservatory, while later on they may be used for window boxes. In any sheltered position Harrison's Musk will grow freely. Although not much used in private establishments, it is one of our most popular market plants and is grown in immense quantities. It is also one of the few plants which thrive well in London.—F. H.

SEASONABLE NOTES ON HARDY FLOWERS.

AURICULAS are now starting into vigorous growth, and, as a preventive, we have twice had them fumigated to destroy green-fly. Amateurs will find that this is the most troublesome pest that attacks the Auricula. The varieties with green leaves are the first to be attacked, and the aphids spread rapidly over them. The more farina or white dust there is upon the leaves, the less likely are they to be attacked by green-fly. Any offsets that are to be found upon the plants should be removed and be placed into $2\frac{1}{2}$ -inch pots for stock. Auriculas are slow of increase, and it is not possible that well-grown plants can be cheap, for an offset will take two years to grow into a flowering plant, and during that period a good deal of attention is necessary. Careful attention as regards watering and keeping the leaves free from insect pests is needed. The small seedling plants must be pricked out as they increase in size, and, if carefully managed, they will grow to a flowering size before the end of the season. A close atmosphere is very injurious. All the plants should be kept near the roof-glass, and ventilation should be abundant.

CARNATIONS AND PICOTEEES, both in frames and planted out in the open ground, require attention this month. The plants to be grown in flower-pots should now have plenty of air. The lights should be drawn off when the weather is favourable, and soil should be prepared ready to repot the plants into the flowering pots. Loam three parts, leaf mould one part, decayed manure one part, and some coarse white sand will grow them admirably. This ought to be prepared a month or so before using it, so that the constituent parts may be well incorporated. Early in March is a good time to repot the plants, and I need not observe that these also ought to be quite free from green-fly, for this troublesome parasite is quite as fond of the Carnation as it is of the Auricula. The end of March or the first week in April will be a good time to sow the seed to produce plants for flowering in July and August out of doors in 1894. It is a long time to look ahead, but this is a matter that takes time. The plants that are to flower for the first time this year are now in capital condition in the open borders. Stir the surface of the ground with a Dutch hoe, and it will add vigour to the plants if they receive a mulching of decayed manure. The manure from stables where peat litter has been used is excellent. I would not like to say it is the best, yet I do not know any better, although well decayed farmyard manure of any kind gives great vigour. It is necessary to now look out for the Carnation maggot, a very troublesome depredator which eats into the centres of the plants, and effectually prevents their flowering. Sparrows we always have with us, and they attack the plants at this season, bruising the leaves very much. I find white threads strained over the plants scare them off, but I learn this is not so effectual where other food is scarce. The short-tailed field mice attacked a bed of Carnations lately, and before they were observed had eaten half-a-dozen, in some instances down to the stumps, and they had carried the bruised and broken leaves into their holes. The Tree or perpetual flowering Carnations will be propagated until the end of the month, and if neces-

sary it may be continued into March. They strike very freely indeed from cuttings, and as soon as rooted they may be potted off and gradually be inured to a cooler atmosphere.

PINKS of the laced kinds out of doors require to be looked over at this season of the year. Some persons grow their plants in pots and coddle them up under glass through the winter, planting them out in the spring. Such never do so well as those planted in good soil and established in the open borders before the cold weather sets in with undue severity. It is quite right that a few plants of any scarce varieties should be wintered in frames to make good the losses that would probably occur in the beds through accidents in the winter. Stir the surface of the beds with a hoe in fine weather and surface-dress with an inch or so of fine rich soil. A good dressing for Pinks is a mixture of loam, leaf-mould, and decayed manure in equal portions. The beds in which all these favourite flowers are grown should be raised a little above the surface level of the garden to prevent wet from settling about the plants. The forcing Pinks now throwing up their flowers should be kept near the roof-glass and they should not be forced too much; a gentle heat, say 50° to 55° at night, is as much as they will stand, as the flowers are washy-looking and flimsy in texture when the plants are over-forced. The cuttings or slips must now be taken off and be propagated in a little bottom-heat; they strike root rather more freely than the Carnations do.

DAHLIAS will now require attention. We have been placing the tubers closely together in boxes and covering them over to the base of the stems with garden mould. They are placed in a vinery or Peach house, or wherever they can have a little heat. They soon start to grow in a temperature of about 55° , and when the shoots are about 2 inches or so in length, take them off and plant each one singly in a $2\frac{1}{2}$ -inch pot. In a little bottom-heat the cuttings speedily form roots, and a good stock of plants may be obtained by the time they have to be planted out in May or June. Injury from frosts is to be feared until quite the last week in May.

HOLLYHOCKS form an excellent background to the Dahlias when both are planted in wide herbaceous borders. They have a fine effect well placed in groups with a background of shrubs. Named varieties are easily managed but for the Hollyhock fungus, which destroys the leaves in some seasons. I like to grow seedlings best, because they grow with greater vigour and are more easily managed. I sowed some seed in heat the first week in February, and the plants were up in four or five days. They were pricked out within ten days after sowing, and will make good flowering plants for the present season. Cuttings from the old stools are also being propagated in heat. Each cutting is planted separately in a $2\frac{1}{2}$ -inch pot in sandy loam and leaf mould. The cuttings should be stood in a close frame in a propagating house, looking over them daily and removing any decayed leaves or mould. If the foliage is wet, leave the top of the frame off until it dries a little.

POLYANTHUSES are very pretty for pot culture. I allude to the laced varieties, as they are termed. The flower trusses are generally thrown up before those of Auriculas, and a good plant will give four or five trusses, which some exhibitors ruthlessly cut off, leaving one only to stand up when it ought to have been surrounded with other trusses in flower and bud. The plants ought to be kept in a garden frame well ventilated, and they must not after this be allowed to become over dry at the roots. They require a good supply of water when it is seen that they are growing freely, and the drainage should be free. A surface-dressing of rich soil may be necessary if the plants are not vigorous. A shower of rain if the weather is mild does them good before the flowers open. I do not advise thinning out the trusses.

RANUNCULUSES are lovely garden flowers, and well worthy of the care required to produce a fine bloom. I have had ample proof that they will grow and flower well in any good garden soil. They may be planted out at various times, but now is a

good time to plant the tubers. They do best in a bed, and the soil should be in good condition at the time of planting. It is important that the tubers be put in about an inch and a half below the surface. The tubers may be placed about 4 inches asunder in the rows, and as much should be allowed between the rows. A little dry sand ought to be dropped in on the top of each tuber. At one time I used to keep the varieties separate, but the bed, I find, is more effective when the colours are well mixed.
J. DOUGLAS.

NOTES ON HARDY PLANTS.

Snowdrops.—With regard to the transplanting of these, it may seem strange, but I never remember to have had a single loss when these have been transplanted in full leaf and flower. I am now referring chiefly to the rarer sorts and fancy seedlings. Some kindly sent me on February 27 last by Mr. Allan when in full flower are now quite vigorous, and they could hardly have looked better had they been transplanted in August. Seeing that Snowdrops can be removed when in full growth, there are several advantages by adopting that plan. They can at once be examined, and one can feel pretty sure that the right bulb or bulbs is being dealt with. Certainly I would not only prefer to transplant Snowdrops in full growth rather than set dry bulbs late, that cannot have otherwise than deteriorated, but I think, as regards the rarer sorts at least, I should prefer to remove them in their flowering state rather than when dry.

Draba Mawean.—This species takes very unkindly indeed to our damp winters, and in most gardens, unless well looked after and protected, dwindles and damps off in patches. This is just one of those plants that will be greatly benefited by a glass shelter during winter, but with the air freely admitted all round. When not in flower it somewhat resembles *Eritrichium nanum*, and though not so fickle as that Boragewort, there is little doubt but that in this climate it suffers in a measure in the same way.

Gerbera Jamesoni.—I have not succeeded with imported roots of this species, as they reached me in a very dried up and fungoid state, but I know that several of my flower friends have this plant growing out of doors. It would be very interesting to know how the plants have stood the present winter; if so, we might be told the conditions of the weather and surroundings where they are growing. For instance, it would be important to have the latter item of information in relation to Mr. Ewbank's garden in the Isle of Wight, as generally the weather there is much more favourable throughout the winter compared with most other British gardens. Owners of large collections have already too many flowers of a doubtful hardy character which in a sense detract from the pleasures of gardening when they are found year after year disappearing.

Tritoma pumila.—So far as I know, this is not in cultivation. I believe that ever since its introduction, about 120 years ago, there has been some confusion as to its identity; anyhow, that such was the case about 90 years ago one has only to refer to Curtis' *Botanical Magazine*, No. 744, where *T. media* is figured sometimes known as *sarmen-tosa*, and which plant was then often taken for *pumila*. I believe at that time that both plants (*pumila* and *media*) were in existence. We cannot wonder so much, however, that the confusion should continue when one of the species has practically disappeared. For some years I grew the form *media*, fondly believing that it was the true *pumila* under which name I had it, but on receiving a hint from a famous foreign botanist, and after sending to him a specimen of my plant, I soon saw my error. I fear the true *pumila* is nowhere in the trade or even in botanic establishments and herbariums. The true *pumila*, as introduced from the Cape by Masson, is figured in the *Botanical Magazine*, No. 764. It has flowers of the intensest colour, orange scarlet, and each floret is large and bell-shaped. The scapes are a lovely blue-green

with darker green blotches; the shoots carry dense spikes of flowers which look all the more massive on the short and delicate scapes. The foliage is much less glaucous than that of the *Uvaria* group. It is a considerably smaller plant than *media*.

Primula capitata.—This charming *Primula* is usually found to be all killed about this time of year out of doors—at least, in these parts, and I have no doubt that in such a winter as the present it will have been killed in more favoured climates. I think it may be safely said that this *Primula* is not only a biennial, but a very tender one into the bargain. It will be understood that I am not speaking of a variety of *denticulata*, sometimes called by the same name, and much hardier, but of the true deep blue-purple kind, the leaves, stems, and calyces of which are thickly covered with farina.

Saxifraga flagellaris.—This is an unsatisfactory species for the colder English climates. It more often damps off and totally disappears during winter than retains any life, and it is not a good doer, according to my experience, even in the summer season.
J. WOOD.

Woodrille, Kirkstall.

"February Filldyke."—The late heavy rains have not been pleasant, and may be depressing to many, as well as to those who have to do outdoor work, but we think they are very good for flowers and hardy plants generally. It is much better that rain should fall in February than in March and April, when we should be busy in the garden. Nothing is worse for open-air flowers than a very dry winter and spring. Last year we had scarcely any hay in consequence, and in moist and loamy districts, where there was nothing like drought, the stature of bulbs such as the *Narcissi*, in the meadows and the garden, was not much more than half the usual height of previous years.

The Eastern Christmas Rose (*Helleborus orientalis* var.).—The old and true Christmas Rose was always vastly more popular in gardens than this, the later-flowering and more varied Christmas Rose. But this is a very beautiful plant, less capricious, hardier and more vigorous in nearly all its many forms than *H. niger*. Flowering early in spring, and often, as we see this year, at the end of winter, it has a little more chance of a fine hour now and then, and it comes with all those delightful things that make the spring so charming to those who cultivate the early flowers. On Feb. 22 we saw a fine sheet of a purplish form in Barr's nursery at Long Ditton, hundreds of plants in full bloom, a small meadow of delicate purple flowers over the fine leaves, and this in an exposed and cold position. On the coast, and sheltered nooks everywhere, better results might be obtained, as may be seen in Mr. Archer Hind's garden in Devonshire. There are a great number of names given to forms of this species, but they may be all grouped under the general name. There is a striking family likeness between them, the most distinct being the white, which are very pretty at this time of the year. The plant does not seem so particular about soil as the Christmas Rose, and we have had strong examples in ground where the Christmas Rose is very slow and doubtful. These are grand plants for forming evergreen borders, and they never show their great beauty and value until they are several years undisturbed. They are admirable for borders near walls and places we want to keep quiet, and yet fresh and furnished at all times—that is to say, where the ground is not broken up twice a year for bedding out annuals, &c.—*Field*.

Narcissus cyclamineus is opening its flowers, and we noticed the variety major in bloom on the rockery at Kew, and in Messrs. Barr and Son's nursery at Long Ditton. It is interesting to note that the bulbs are at Kew in a moist peaty, in fact quite boggy soil, against Lichen-covered stones, and near a little trickling stream. The flowers are robust, of good colour, and the leaves

are coming up strongly, so that those who have hitherto failed with this Daffodil should adopt this plan, which is simply giving to it natural conditions as the bulb grows by the waterside in Spain. The variety minor has, as its name suggests, smaller flowers. There is a quaint aspect in this type of *Narcissus*. One does not often see the bulbs grown in pots, but they may be thus cultivated if they are put moderately close together, as they are not large. *N. cyclamineus*, *N. minimus*, *N. triandrus*, and those of this class are well adapted for this method of culture.

POPULAR GARDEN LILIES.

THE Madonna Lily (*Lilium candidum*) was the best known in Miller's time, and it is still one of the most beautiful ornaments of the flower garden. It is often seen in a miserable condition owing to bad cultivation and lack of moisture at the roots. The plant likes deep rich sandy loam, and should be mulched and watered in hot weather, otherwise the stem leaves decay before the flowering period is over. The clumps of bulbs should be lifted and replanted every third year. They will grow and attempt to flower for ten years or more if left in the same place, but very poorly. The Tiger Lily (*Lilium tigrinum*) is not quite so well known, and is not one of the old English garden plants. It seems to have been introduced from China to Kew Gardens by a Mr. Kerr in 1804. Kempter says that the bulbs are eaten by the Japanese. Since the introduction of the original form many fine varieties have been imported from China and Japan. The variety *splendens* is a superb garden plant, and has produced twenty-five flowers on one spike. I have had stems nearly 6 feet in height. *Fortunei* is a distinct form, and there is another with quite double flowers, another well marked variety being *Lishmanni*. They can be propagated readily by the bulbils produced freely on the stems. All of them are adapted for culture in flower-pots and in the flower borders, but these, like most of the Lilies, will not thrive out of doors unless the soil is deep and well drained, when they form the handsomest of border plants. Amateurs are frequently complaining of their want of success with Lilies, but, as a rule, it is their own fault for not taking sufficient pains to prepare the soil by draining and deep cultivation. The consequence is that the scales which form the outer covering rot at the base and drop off, and the decay spreads rapidly inwards until the entire bulb gives way.

Of *Lilium speciosum* there are several distinct varieties grown in gardens, as *L. lancifolium* album, rubrum, roseum, &c., but they are as often wrongly named as not, except the white variety, which is easily distinguished. Two forms are figured in Paxton's "Magazine of Botany" for the year 1838, where it is stated that Dr. Von Siebold introduced it from Japan in 1833. One with very richly coloured flowers is named *L. speciosum*, the other with white and pale rose spotted flowers as roseum. I find this species succeeds well if grown in the Rhododendron borders made up of two parts peat to one of yellow loam, but in the ordinary garden borders of medium clayey loam they dwindle away. As pot plants they succeed admirably, but from seeing some specimens exhibited at country shows with long bare flower-stems and poor watery flowers at the top of them, people are led to believe that it is not a good greenhouse plant; whereas it is well adapted for greenhouse and conservatory decoration in the autumn, but the plants must be grown so that the leaves are kept in a healthy green condition until the flowers are produced. I plunge the pots containing the newly-potted bulbs in cocoa fibre refuse out of doors. When the plants have started to grow they are taken into garden frames, and air is admitted freely. In May the plants may be placed out of doors in a sheltered position, and when the roots push out from the base of the flower-stems some rich surface-dressing must be supplied to them. The plants must also be regularly and carefully supplied with water. If they become over-dry at

any time, this causes the leaves to assume a yellow cast and the lower ones to drop off, and if this is repeated several times the result is disastrous; we get the tall, naked stems and poor flowers.

L. auratum is the most popular of Lilies, and before its introduction the Lily had become comparatively neglected. It is excellent for pot culture, and requires much the same treatment as *L. speciosum*, except that it requires more care to prevent the bulbs being injured by wet. Instead of plunging the flower-pots out of doors after potting up the bulbs, they should be placed under glass in frames, and they must not be turned out-of-doors after flowering, in case heavy rains may cause the scales of the bulbs to rot at their base. The potting material I use for all Lilies is com-

bright, especially the buds, which are of a distinct carmine shade of colour. Then we have major and the large-flowered *pyrenaica maxima*. A collection of the several kinds is of much interest and adds to the attractions of the hardy garden in early spring.

THE ROCK GARDEN.

ARRANGEMENT WITH REGARD TO STABILITY.

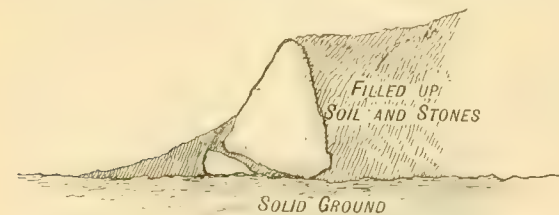
I HAVE already treated of the arrangement of stones with regard to general effect, and before speaking of the most important work in forming a rock garden, viz., arranging the stones with regard to the plants to be used, I will give a few general hints about stability, as work faulty in this respect would be attended by serious consequences and might result even in the collapse of the most effective structure. Unless the stones are resting on a solid foundation they must settle down more or less quickly, and sometimes a gradual settlement continues for a long period, much to the detriment of the plants used, which are thus prevented from becoming properly established. When forming a rock garden, therefore, I invariably begin with the stones

(and not with the soil, as is so often done), taking care that each foundation stone rests on solid ground. The stones should be fixed so as to prevent their ever being shifted by the pressure of soil or other stones. If the filled-up soil and stones were rammed so tightly that they would not settle any more, the place would be unfit for many kinds of plants which require a looser medium to root in. Allowance must, therefore, be made for a slight settling of the filled-up body of soil and stones, but such settlement should never be able to displace the principal stones, no matter how firmly the sinking soil may press against them. With this view to stability it will in most cases be advisable to rest the stones on their flattest bed, and for greater security tilt them inwards, that is, towards the part to be filled with soil and other stones, as in sketch No. 1. Here a small wedge-shaped stone has been firmly rammed in beneath the larger block. The former is, of course, hidden from view by a slight filling of soil on the outside. Another method for ensuring the stability of foundation stones consists in taking out a small trench, sloping inwards, as explained by sketch No. 2.

The stone might then be placed into the trench as shown in sketch No. 3, and will be able to resist any amount of pressure if the ground underneath is firm and if the stone itself is of a solid nature. In loose soil the angle of rest is, roughly speaking, about 40° , and in sketch No. 3 the wedge-shaped piece *ABC* approximately represents that part of soil and stones which would be pressing against the foundation stone. It is of great importance that the principal stones should be of such a shape as to allow an outward inclination (as in the case of *A B*, sketch No. 3) of that side of the stone which is to bear the pressure of soil, &c. From the sketch (No. 3) it will be clearly seen that if the stone were of such a shape as to have the weight-bearing surface *A B* inclined inwards, as, for instance, in the direction of the line *A C*, the filled-up soil would settle not against the stone, but

away from it, leaving hollow spaces and endangering not only the stability of the rocks, but also the welfare of the plants, as will be seen later on when speaking on this special subject.

It must not be inferred from the foregoing remarks that the foundation stones should always be tilted inwards. Very bold effects can sometimes be produced by overhanging pieces of rock rising from the ground in a direction totally opposite to that just recommended, but it must be borne in mind that such rocks keep off a certain amount of rain, and that, therefore, very few kinds of plants can be grown underneath these projections without requiring special attention. With regard to stability too, such parts need during their construction an extra amount of care and strict compliance with the laws of gravity as applied to parallel forces. It is a well-known fact that the equilibrium of an overhanging body will not be disturbed if that body is so placed that an imaginary perpendicular line through its centre of gravity falls within the base on which that body rests. Assuming, for instance, that *c* in sketch No. 4 is the centre of gravity of a large stone, that stone, though overhanging, would be perfectly secure, because the imaginary perpendicular line *A B* falls within the base line *D E*. * If more weight is added, as in the next sketch (No. 5), the same rule must be applied not only to each individual stone, but also to the complete block, taken as a whole. An overbalancing of the projecting stones is impossible, while the weight on the base-line to the right of the line *A B* is heavier than that of the overhanging part to the left of that line (see sketch No. 5), or, in other words, while their lower ends are loaded with sufficient weight to counteract that of the overhanging part. As this fact holds equally good when the plane on which a body rests is not level (like in sketch No. 4), but inclined to the horizontal plane, it is clear that when a stone is resting on firm ground sloping inwards (like sketches Nos. 2 and 3), the perpendicular line through the centre of gravity would fall still further within the base, thus ensuring increased stability. When overhanging rocks are built on this principle, it is, however, necessary to make the most careful examination of the stones to make sure that



No. 1.—Large stone resting on firm ground tilted inwards by small wedge-shaped stone to resist pressure of filled-up soil and stones.

posed of loam and light fibrous peat in equal proportions, with a fourth part decayed manure and coarse white sand if necessary. It is best to leave a space of about 1 inch or $1\frac{1}{2}$ inches deep on the surface for the summer dressing. There are several well-marked varieties, the most distinct being *rubrovittatum*. This species does well out of doors, but the bulbs are liable to rot off in heavy soils in wet autumns. They succeed well in *Rhododendron* beds, but need open spaces to allow of their free expansion. The distinct and noble-looking Lily, *L. giganteum*, succeeds best out of doors, but it must be planted in sheltered positions and in a prepared soil of fibrous peat and loam, well enriched with decayed cow manure. Under favourable conditions the plant will throw up flower-stems 8 feet to 10 feet in height, and furnished with a score of flowers or more upon each. I have also grown it as a pot plant, but it seldom throws up such fine tall stems. *L. longiflorum* in variety is better adapted for pot culture than for the borders, and the variety *L. Harrisii* is now very extensively cultivated.

The garden Lilies which grow most freely with me in the open borders are *L. Humboldtii*, *L. pardalinum*, and *L. californicum*. They are very beautiful in the herbaceous borders and increase freely. A very handsome species which has also become established in the ordinary soil of the garden is *L. Hansonii*. All the above have orange-coloured flowers, more or less spotted. They are easily cultivated, and flower grandly in rich deep soil, but they require to be watered freely in dry weather.

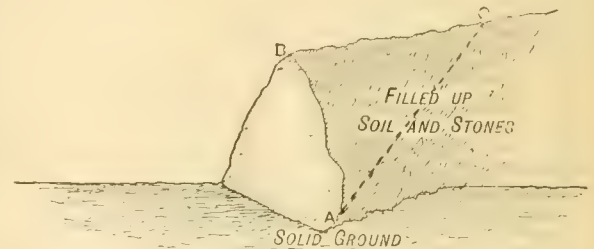
J. DOUGLAS.

Cynosurus echinatus (the Rough Dog's-tail Grass) (*E. T. B.*).—This is the name of the Grass you say was gathered by you in Jersey. I do not think it is usually considered as indigenous to England. It is said to have been found once in the Shetland Isles, and it is also found in the various Continental countries. It has no value as a fodder plant, but it is a very pretty border plant.—G.

Saxifraga oppositifolia and its varieties are commencing to bloom on the rockery. *S. oppositifolia* is a bright little rock plant, blooming so freely as to almost hide the small leaves, that form a perfect mat over the faces of the stones. It should be planted between stones, so that the growth may cover the faces, which are then bright with colour in the early spring days. If the white variety is grown in pots it is very pleasing, and the flowers then appear earlier than in the open. A very fine variety is named *pyrenaica superba*, the flowers richer in colour and larger than those of the type. *Splendens* is remarkably



No. 2.—Section of small trench for tilting stone.



No. 3.—Stone fixed to withstand pressure; *ABC* representing the portion of soil pressing against *AB*.

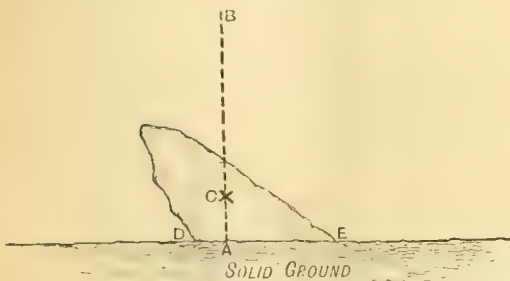
they are quite solid. Some stones have serious

* A striking instance of this natural law is the leaning tower in Pisa, which, though overhanging 13 feet or 14 feet, is perfectly safe, because the vertical line through its centre of gravity falls within the base.

flaws, which during wet weather would be covered with mud and be quite invisible; a stone of that kind would be sure to break, even under a small weight, and should never be used where strength is required.

CEMENT.

The practice of using cement for securing the stability of stones should never be carried out in constructing rocks for alpine. For ponds, caves, waterfalls, &c., the use of cement is often indispensable; also when constructing very large rocks it will sometimes be found necessary to employ cement, not so much for joining large stones together as for keeping in place some of the wedge-shaped pieces used for packing and keeping in the desirable position some of the larger blocks of stone; but nothing can be more hideous than visible cement joints in what should be a picturesque scene and this work, if unavoidable, should always be done in such a way as to enable us to completely hide all trace of cement, either by covering the same with soil, or (where this would not be practicable) by mixing with the cement crushed fragments of the stone used, or such other colouring material as would make it impossible to tell the cement from the stone when the former is once hardened. Allowance must be made for



No. 4.—A B imaginary vertical line through centre of gravity; C assumed centre of gravity.

the changing colour of cement. When wetted for mixing it is of a very dark grey, but it again assumes the very light, almost whitish grey colour it had in its powdered dry state as soon as quite dry after use. When it is absolutely necessary to use cement for the purpose indicated, it would be well, therefore, to mix colouring matter, if required, with the dry cement and not be misled by its appearance when wet. Where cement has been used in this manner it should be slightly wiped over the stone adjoining by means of a wet rag or brush, and if a little very dry sandy soil is thrown in while both the stone and cement are still wet, it will be impossible to detect the cement when dry. But I repeat that the use of cement altogether should be the exception and not the rule, even in large rock gardens. On no account whatever should cement be used when there is the slightest chance of a possible settlement of the stones, as this would not only cause the cement to crack and become utterly useless as a means of support, but positively dangerous to choice alpine, as the cracks form a most convenient hiding-place for slugs and other pests.

GRASSY BANKS.

When speaking on the subject of arrangement for effect I suggested that the stonework should not be continuous, but broken here and there by intervening bits of Grass, borders for hardy flowers, &c. One of the very best means of effecting a pleasing variation is a grassy bank, which may either be kept to Grass pure and simple and cut as required, or be planted with

all kinds of bulbs and other hardy flowers, which in such a position could have perfect freedom to grow as they please in a semi-wild state without interfering in the least with other parts of the work. I will say more on this subject later on when considering the planting, and will confine my present remarks to the stability of such banks. The best place for setting up a bank of this kind is a recess between two rocky projections, where the pieces of turf used would abut firmly against a large stone on either side. Not only would this increase the stability of the bank, but the stones at the sides prevent the Grass from spreading to other parts of the work, where it is not only not required, but could have only a damaging effect on other plants. Pieces of turf are generally cut 3 feet long, 1 foot wide, and 1½ inches to 2 inches thick, but for this purpose I find it much more convenient to have them at least 4 inches thick, 1 foot wide, and about 1½ feet long. I also think a further advantage is to have the ends not square, but cut diagonally (see sketch No. 6), so that the turves overlap each other when set up. This dovetailing, as it were, not only ensures greater security, but also makes it easier to conceal the joints by firmly beating the pieces against the soil filled in behind them. That the latter must be firmly rammed as it is filled in and that the best soil must be kept nearest to the turf goes without saying. The shape of such banks should, of course, never be straight, but either round or undulating. If the slope is a very steep one additional stability might be secured by having long sticks driven firmly through the turves and into the bank. When a grassy bank is used to connect parts of the rock garden at a considerable distance from each other, this bank itself might be made more varied by having single stones or even groups of stones projecting from it here and there, but all such rocks to be safe should be arranged during the erection of the bank, and not inserted after completion, when it would be much more difficult to have them firmly secured.

Ereter.

(To be continued.)

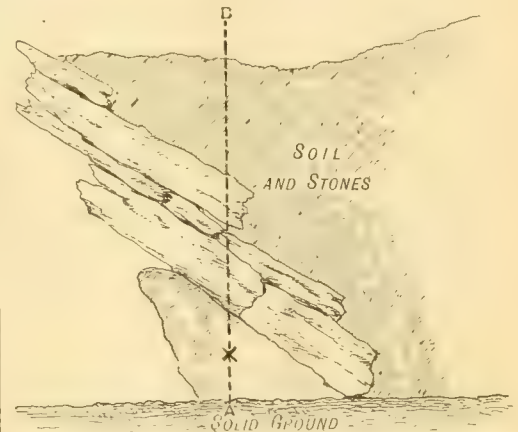
Galanthus Elwesi globosus is a distinct and handsome variety. It is in flower now in the hardy plant house at Kew, and the whole plant shows great vigour. An illustration of it will be found in *THE GARDEN*, March 21, 1891 (p. 272). The flowers are large and of a characteristic globular form, the segments broad, and the leafage also. It is an excellent Snowdrop for pots, and the robust, globular blooms are shown to advantage in the plant house.

Musks.—How very much these old and sweetly perfumed flowers seem to be passing into oblivion! The common Musk is probably kept alive more through the agency of the market growers who cater for the poorer classes than in private gardens. If clumps have found a place on rockwork, where they can take care of themselves, all very well; but, so far as culture in pots is concerned, very little of Musk is found, and yet for windows or for hanging baskets, or for the filling of boxes, vases, or many other uses, Musk plants are admirable. How easy is it to produce pots either by breaking up the clumps in the winter, picking out portions of the roots, and with these furnishing fresh pots and soil. Better still is it to start the old clumps into growth and, taking off young tops, place half-a-dozen or so into 4½-inch pots as cuttings. Stand them for a short time in warmth, and, once rooted, these make very useful plants for many purposes. Musk makes an excellent carpet for Begonia beds, as I have seen at Swanmore. It also does admirably as a bed edging. One of the most effective of all the Musks for carpeting is the dwarf Cloth of Gold, one that

came out of the same batch as did *ruber* and *moschatus grandiflorus*, the latter having habit and flowers like Harrison's Musk, but poorer in colour. Town dwellers, whose plant resources for windows are limited, still occasionally show us their flat-trained Musks in pots or small boxes, and occasionally in country shows cottagers display wonderful plants as pyramids or in dense trailing form. These are always delightful. The common Musk seeds freely, and seedlings may be easily reared in quantity, but the large-flowered Musks seem to be all barren.—A. D.

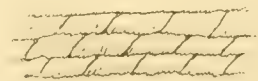
CARNATIONS AND THE WINTER.

THE time has now come when one can judge of the effects of the winter on outdoor Carnations. In my case the results vary with the altitude at



No. 5.—Same stone as in sketch No. 4 with more weight added, representing in section an overhanging rock.

which the plants are grown; those grown on the lowest ground and near water level have been very hard hit indeed, while others planted from the same stock and at the same time, and standing considerably higher, have, except in the case of a few kinds, escaped well. One of the very worst kinds is Mrs. Reynolds Hole or Apricot. More than half our stock of this is dead, or might just as well be so, so that groups will have to be filled up from the reserve ground this month, though the result of spring planting is never so satisfactory as that from autumn-planted stock, which escapes disease. All the old crimson Clove plants have died entirely, not a vestige of life to be seen in the remains above ground. These were good and well-rooted layers when planted early in October. The erratic behaviour of different varieties is vexing, they vary so much each year. Some of our kinds which have not had a touch of disease for the past three or four years have now got it badly, while others, which have been in other years very much spotted, are now quite clean and healthy. A case in point is a seedling scarlet self which I



No. 6.—Shape of turves for setting up grassy banks.

raised five years ago. The first year or two it was layered it took the spot very badly during winter, but being excellent in other points I kept it, with the result that last year and this year the stock is perfectly healthy and clean, promising a good display. Some varieties, such as the old Raby, Duke of Edinburgh, and a few others, appear to enjoy a perfect immunity from disease. Though we have not had nearly such a cold winter this year as we had last, the plants have suffered very much more, which goes to prove that it is not cold weather so

much as other climatic influences which affect them. I attribute the larger percentage of losses which we have had this winter to the excessive rainfall, the ground in low-lying districts being completely saturated, and this has been the case for a long time past, if not indeed for the whole of the winter and late autumn.

Most Carnation growers seem agreed that early planting is very desirable, and so it may be, but I believe it to be quite ineffectual as regards prevention of winter losses. I have some proof of this now, for our main plantings were done early in October, and the plants were strong, vigorous, and well rooted. On Nov. 11 I received some rooted layers, smaller and weaker than those planted earlier, and though these were planted side by side with the others they all look perfectly healthy at the present time, while the very next row to them is badly diseased. The late-planted sorts are Joe Edwards, Evelyn, Mary Morris, Favourite, The Governor, Perfection, Germania, Dazzle, and Maurice Kingscote, and the diseased sort, which comes next to them, is Comtesse de Paris, which has hitherto for two or three seasons been one of our healthiest kinds.

J. C. TALLACK.

Cyclamen coum.—This early flower is in full beauty in many gardens and nurseries, and several frames full of it may be seen in the nurseries of Messrs. Barr and Son at Long Ditton; whilst at Kew in the hardy plant house it is grown in pans, producing a fine effect at this season of the year. At Long Ditton *C. coum* and *C. ibericum* are grown side by side—not a bad way, as many interesting hybrids might be thus obtained. The white variety of *C. coum* is a delightful flower, but one gets many shades of colour, the finest, perhaps, being deep crimson—very rich against the deep green leafage. Clumps on the rockery are interesting, but when planted out in a cold pit or frame, the flowers are preserved in fresher beauty. Neither *C. coum* nor *C. ibericum* is difficult to grow, requiring a gritty soil, to which some lime rubbish has been added.

Iris reticulata var. sopenensis is a pleasing form of the netted Iris, the flowers rich bluish purple in colour, the lip of the fall whitish in the centre and spotted with dark blue, a longitudinal line of yellow running down the centre. A charming variety also is *I. r. cyanea*, the flowers of an attractive shade of blue and the growth conspicuously dwarf. *I. r. purpurea* has, as its name suggests, purple flowers; whilst those of *I. r. Krelagei* have a tinge of red. We do not care for this latter kind, the colour is dingy and there is little fragrance. Unfortunately, through some disease, this class of bulbous Irises is often unsatisfactory in gardens, and it is beneficial to lift the bulbs, dry them and replant immediately. It is always found that they are better for this treatment. *I. reticulata*, the type, is as useful as any, its flowers so rich in colour, and each one as fragrant as a bunch of Violets.

SHORT NOTES.—FLOWER.

A beautiful association of spring bulbs is the common *Scilla bifolia* and the Snowflake (*Lunocjum vernum*). We lately saw masses of the two mixed together, and the effect was both rich and striking.

Tree Pæonies. I was very much interested in reading the notes on "Tree Pæonies," by "H. P." (p. 126), of Feb. 18, for growing under glass, and to find the varieties sent from Japan had proved acquisitions. The greatest drawback seems the high prices asked for them. One variety here (North Derbyshire), in a sunny, elevated, well-drained spot, has never failed to give a gorgeous display, more or less, for twenty years.—GEORGE BOLAS, *Hopton Gardens*.

Iris reticulata var. cyanea is one of the most charming hardy flowers open now. It is pleasing when grown in pots, and is not difficult to

grow. The plant is dwarfer than the type, and the flowers of a bright shade of blue. We do not care for *I. r. purpurea*, the colouring being too dead. There seems little difference between this and *Krelagei*, except that in the latter the shade of colour is somewhat deeper.

TREES AND SHRUBS.

SHRUBS IN BLOOM.

THE number of shrubs that flower in the open ground during the first two months of the year is by no means numerous; still, there are several that bloom at this season, especially if trained to a wall. The winter Jasmine is now so well known that nothing further need be said as to its merits, except that it is a fairly good town plant. The Mezereon in its different forms is another subject that flowers early in the year, and so are the Japanese forms of the Witch Hazel (*Hamamelis*), which are at present scarce, but advancing in popularity every year. The best is *Hamamelis arborea*, of which a coloured plate was given in Vol. XXXIX. of THE GARDEN. In this the flowers, which are borne in great profusion on the leafless branches, are of a peculiar starry shape, being composed of a number of curiously twisted petals of a bright yellow tint, while the red calyx stands out very conspicuous. The flower is indeed very difficult to describe, and a glance at the illustration will convey a better idea than any written description. Owing to its early-flowering habit, the expanded blossoms are sometimes cut off by sharp frosts, but the buds are seldom injured, and a few bright days with milder weather will suffice to restore the plant to its original beauty. In the somewhat smaller-growing *H. japonica*, the flowers are of a paler tint, and consequently less showy. On a south wall the Japanese *Chimonanthus* fragrans produces its curious star-like blossoms, which are remarkable for their delicious fragrance. If a few sprays are cut just as the buds are on the point of expanding and placed in water, they will open well indoors, and their agreeable perfume is then very noticeable. The Japan Quince (*Cydonia japonica*) is represented in our gardens by many distinct forms, and, given the protection of a wall and a fairly mild winter, some of the blossoms will make their appearance soon after Christmas. One of the earliest varieties is *Moerloosei*, with bright red blossoms. The Cornelian Cherry (*Cornus mas*) is another winter bloomer, the flowers, which are in the form of little bright yellow tufts thickly disposed on the leafless branches, being usually borne during the month of February. Though lowly in stature, the little *Erica carnea* forms a bright winter feature; while, given mild weather, the blossoms of the *Laurustinus* will make their appearance in considerable numbers. The two winter Honeysuckles (*Lonicera Standishi* and *fragrantissima*) both produce deliciously scented white blossoms. There is often a good deal of confusion between the two species, of which *Standishi* is of quite shrub-like habit, with the young leaves hairy, and almost if not quite deciduous, while *L. fragrantissima*, on the other hand, is more of a rambling grower, with smooth leaves, which are for the greater part retained throughout the winter. Though not so early flowering as the above-mentioned, the golden blossoms of *Forsythia suspensa* are not far behind some of them, and a grand object this forms on a wall when the principal branches are secured thereto until the space is covered, and after this the long flexible shoots are allowed to dispose themselves at will. In this way they may be seen wreathed with blossoms for a considerable distance, when a good specimen forms a delightful picture in early spring. *Nuttallia cerasiformis* (the Californian *Oso Berry*) is another shrub that blooms in some seasons before February has left us, and on this account it is worthy of note. It forms a large, rounded, twiggy bush, whose blossoms are borne before the leaves are fully expanded. The flowers are whitish and

produced in drooping racemes, very much after the manner of the Flowering Currant (*Ribes sanguineum*). They are not particularly showy, but the freedom with which they are borne and the graceful manner they are disposed on the branches combine to produce a very pleasing effect. Considering the limited number of shrubs that bloom during the winter months, the proportion of those remarkable for the fragrance of their blossoms is particularly noticeable. Especially worthy of mention in this respect are the two Honeysuckles above mentioned, the Mezereon, and *Chimonanthus* fragrans. Of the different shrubs herein noticed coloured plates have at different times been given in THE GARDEN of *Hamamelis arborea*, *Forsythia suspensa*, *Cydonia japonica*, *Moerloosei*, the Mezereon in its different forms, and *Chimonanthus* fragrans. T.

Grafting Lilacs.—While perfectly in accord with your correspondent, "J. C. B.," as to the readiness with which the Lilac can be struck from cuttings, if the rules so clearly laid down on p. 145 are carried out, yet I must say it would be quite possible to find grafted plants on the Continent, for I recently saw some Lilacs from one of the principal shrub nurserymen of France all of which had been grafted. True, the stock employed was not the Privet, but the common Lilac, which is but very little better, as if the sap is at all arrested at the point of union the tendency of the stock to push up suckers is greatly aggravated thereby, and in any case constant attention is necessary. In ordering Lilacs from any of the Continental nurserymen I should especially stipulate on own roots, for grafting Lilacs is far more universal than would be supposed from perusal of the above-mentioned article.—T.

Golden Chestnut (*Castanea chrysophylla*).—Apart from the interest attached to it as being a near ally of (but in appearance very different from) our common Sweet Chestnut, this Californian species is a really handsome evergreen shrub. It forms a sturdy-growing, densely-branched bush, suggesting an affinity to some of the Phillyreas. The leaves are dark green above, and on the undersides covered with a golden-yellow powder, from whence the name of the Golden-leaved Chestnut is derived, though at a first glance the name appears to be somewhat of a misnomer. It is a native of California and Oregon, and was introduced by Messrs. Veitch, through their collector, William Lobb, who was instrumental in sending home many other fine trees and shrubs from the same region. Though some subjects from that district are rather tender, this Chestnut is perfectly hardy in England. It prefers a rather deep, loamy, but well-drained soil, and where these conditions exist it is just at home as a rockwork shrub, or where grouped with others it must not be put into competition with strong-growing subjects, as from the slow rate of growth of this *Castanea* it will be soon overgrown by its more vigorous neighbours and quickly ruined. Like the Evergreen Oaks, this Chestnut resents very much being disturbed at the roots, and this no doubt accounts for its scarcity, as Messrs. Veitch, its original introducers, do not, I see, offer it in their present catalogue.—H. P.

Fabiana imbricata.—It is undesirable that your correspondent's letter signed "M.," which appeared in THE GARDEN recently with reference to the *Fabiana imbricata*, should be allowed to pass without notice, since if contradicted it might, perhaps, deter somebody or other from planting this shrub on the ground of its alleged tenderness. A valuable addition to any garden would thus be lost, since it is a beautiful plant in itself, and interesting as being, as is so well known, a member of the Potato's family circle, but got up in the exact semblance of a delicate and pretty Heath. "M." does not date his (or her?) letter from any address, but in speaking of such a matter as the hardness or otherwise of a plant, it is obviously of the first essential necessity to state whether observations which are recounted were made at John o'Groats.

Land's End, Ireland, or elsewhere, since the climatic conditions vary, of course, so widely with latitude and other circumstances. In my garden, which is in the exact centre of Sussex, the *Fabiana* is as hardy as an Oak. No doubt the climate of Sussex is as favourable to vegetable as well as to animal life as any which is to be found inside England or outside of it; still, Sussex can be cold. A north-east wind is not completely muzzled when it gets there, although it is not, according to my experience, so savage as a blast from the same quarter in South Devon, after whetting its teeth in its passage over Dartmoor. Not only is my garden on the top of a high ridge, but my *Fabianas* are on the side of a rockery, exposed, as if purposely, to the fullest onslaught of northern blasts. Yet at this moment they look more prosperous, of a healthier complexion, and more exulting in life and vigour than, perhaps, anything else in the garden. Charles Kingsley, in his well-known ode in praise of the north-east wind, should be taken to have been amusing himself by simulating a preposterous enjoyment in it which he did not honestly feel, because if his pleasure in sleety and blighting gales was true, he was not a properly constituted human being. But plants are above making pretences, and nobody who sees my *Fabianas* at this moment can entertain the least doubt that they actually revelled in the severe inclemency of last Christmas, or that they are all the better for it. —T. W. ERLE.

IVY CARPETS.

THERE are so many forms of Ivy and the variations are so numerous, whilst in all aspects and under all conditions it is perfectly hardy, that it might be used in different ways and adorn gardens more extensively than it does. If walls are wanted for other things, there may be common trees upon whose stems choice Ivies might easily be established. There could be no better way than this for growing many kinds, so as to be able to see their differences and variations, and it would no doubt keep them true to character, as some say that if allowed to run at will over the ground the smaller forms lose somewhat of their distinctness. There may be little in this, as few have tried them to any extent as carpets such as we see of the common Ivy in woods and upon hedge banks, where, by the way, it is often prettily interspersed with wild flowers. It is well known that the Ivy will thrive directly beneath wide-spreading, branching trees, and although occasionally used as a last resource when Grass has failed through semi-darkness or drip, I think it would be a great gain to make a point of planting it in this way much more freely. Nor need it be confined to spots beneath trees, as in pleasure grounds there are many open grassy spots near walks, &c., that are mown once or twice a year for appearance sake. Here we have a chance to reduce summer labour, add to the pretty features of the place, and this without encroaching upon the Grass. Ivy carpets come within the possibilities of the majority who have gardens of any extent. The word carpet is not here used in a formal sense, and I would suggest more freedom than is allowed to rings of Ivy beneath trees extending just as far as the branches spread, and kept in rigid regularity. My meaning will be made clearer by the following notes: A piece of grassy sloping ground beside a walk and varying in width from 2 yards to 6 yards, backed up by Hollies and partly by Oaks, was dug over, except just round the Oak stems, where the Grass was left with access to and from the walk just enough to admit of a seat. The Ivies were then planted informally, and at the same time, to vary the feature, *Iris fetidissima*, Solomon's Seal and hardy Ferns were interspersed here and there, keeping each as much as possible in its own group. The Ivy shoots being pegged down to the ground, they are kept in position, and no doubt will root wherever they touch. Among the kinds used are the Irish Ivy in its green and variegated forms, *H. dentata*, *H. Rægnieriana*, *rhomboidea obovata*, which elsewhere has proved admirable grown in this way, the rich green Emerald Gem, *himalaica*,

pedata, *Caenwoodiana*, *palmata*, *lobata* and a few silver and golden kinds, which, perhaps, are the most likely to revert to original forms. There can be no possible objection to planting Ivy in this way and a host of other things, as, for example, many spring bulbs might be planted as well, for if they eventually were unable to make their way through a dense and vigorous growth, it would not be till after several seasons. Another idea worth following up is to take the tree Ivies, that is, those that assume a bushy habit of growth. They are most interesting, but somewhat at a discount, hardly obtainable in nurseries, as no demand exists for them in gardens. An orange-berried kind now offered should arouse more interest in them. Tree Ivies planted at distances permitting of perfect development and carpeted with creeping kinds, would be a charming variation of the same idea.

A. H.

Quercus Ilex Fordi.—Among the numerous varieties of the Evergreen Oak this is one of the most distinct, and, what is more, it is also a highly ornamental form. Ford's Evergreen Oak differs from the type in the branches being more numerous, and the lower ones as a rule sweep the ground. The leaves, too, are very different, being much narrower, more glossy, and of a brighter green than those of the common kind. As a specimen on the lawn it is seen to very great advantage, and so situated it usually forms a symmetrical plant of a somewhat pyramidal shape, clothed quite to the turf with foliage. Some of the other varieties are inferior in beauty to the common kind, the best known among them being *crispa*, whose leaves are curiously twisted; *latifolia*, with broad leaves, thick in texture; and *integrifolia* and *serratifolia*, whose distinctive features are indicated by their respective names. Good plants of these Oaks are by no means easy to obtain in nurseries, for they are of rather slow growth, especially during their earlier stages, and they also transplant badly, so that preference is mostly given to something that grows into a saleable size in less time. Again, the plants are in some situations liable to be injured during very severe winters, and this is more noticeable in the case of those growing in sheltered spots than where they are more exposed. The list of Evergreen Oaks is by no means limited to *Quercus Ilex* and its varieties, as in addition there are *Q. gramuntia*, *Q. ballota*, and the little *Kermes Oak*, *Q. coccifera*, all natives of Southern Europe. This last is a dense much-branched shrub, clothed with small dark green somewhat crisped leaves, hard in texture, and furnished with spines. It is almost as prickly as the Holly. The North American Live Oak (*Q. virens*), none too hardy in this country, is evergreen in character, and so are several Japanese forms with which Messrs. Veitch have made us familiar. The best of these are *Q. glabra*, *Q. bambusaefolia* or *salicina*, *Q. Buergeri*, and *Q. cuspidata*, of which last there is a variety with variegated foliage.

Golden Laburnum.—Trees with coloured foliage are often not very ornamental. Soil and situation have a lot to do with the colouring of most plants and trees. I have often seen this Laburnum in this state, and considered it had no value as an ornamental tree till I came to reside in this neighbourhood. In this parish in a cottage garden close to the roadside there is a good-sized tree of this Laburnum. When it is in full leafage the colour is a rich bright yellow.—DORSET.

Aralia Sieboldi.—This fine-leaved plant has suffered severely during the past winter where at all exposed, but in sheltered spots has come through the season of frosts unscathed. It is curious to note in the Royal Horticultural Society's Gardens at Chiswick the effect this winter has had upon plants in different positions. A row has been planted against a wall, and every specimen at all exposed is injured, but where in any way protected the leaves are as fresh as in midsummer. *A. Sieboldi* is one of the most ornamental plants that can be used in the garden, a large mass of it

on the turf presenting a fine aspect; but unfortunately it is not absolutely safe. Even in light comparatively sheltered places a large plant is practically killed at Kew. Recent winters have, however, proved exceptionally trying to plants not of pronounced hardiness.

The Hazel.—Because so common, the beauty of the Hazel when laden with a profusion of pendulous male catkins is not recognised to anything like the same extent as would be the case if it were a newly-introduced subject, for a large bush is, towards the latter part of the winter, one of the most ornamental features to be found in our gardens or woods. This season the catkins seem to be borne in even greater profusion than usual, at least in many places. The Constantinople Hazel (*Corylus Colurna*), the giant of the family, is very effective in this stage, and when the nuts are borne, the long slashed segments of the calyx form a noticeable feature. The weeping form of the common Hazel shows its peculiarity in a marked manner when laden with catkins, which, being pendulous, hang almost parallel with the drooping shoots.—H. P.

Azara microphylla.—This is a very pretty evergreen shrub, but at the same time it is, unless in especially favoured districts of England, of no value for planting in the open ground, as it suffers greatly during most winters, and is at times killed outright. Though usually included in lists of hardy shrubs, such plants as this *Azara*, the pretty *Fabiana imbricata*, and *Erica codonodes*, recently inquired about in THE GARDEN, will only prove disappointing, unless in the south or west of England.—T.

IVIES IN THE WINTER.

ALL interested in Ivies will find a good collection in the gardens of the Royal Horticultural Society at Chiswick. A few notes respecting them will be of value, as one can tell after the winter the most hardy varieties; some of them, although thoroughly well established and covering a large space of wall, have got severely injured by frost, and it is not wise, therefore, to plant those kinds that cannot resist the trials of an English winter. One plants the Ivy to give beauty to the garden when flowers are absent, and it is at that season the leafage assumes its richest colouring and the variegation of the variegated kinds is brightest. *Himalaica* is as if a fire had passed over the surface of leafage. Every leaf is browned both where the plant is well sheltered and in a more exposed situation. The plants are not young, but several years old, and thoroughly strong, yet scarcely a trace of green is to be seen on the foliage. This variety may therefore be regarded as valueless, unless it is desired to form a collection, or the situation is peculiarly favourable. Although a green-leaved variety, it is far more damaged than even the tender *maderiensis variegata*. Another variety that has got hurt is the large rich green-leaved *H. lucida poetica*, the lower portion of the plant being quite browned. *Algeriensis variegata* is almost as much damaged as *himalaica*, scarcely a leaf remaining in its pristine beauty; also *maderiensis variegata*, which is, however, well known as not a variety to stand severe frost. *H. arborescens argentea variegata*, Lees' new Silver, bronze-leaved Silver, *H. japonica variegata*, *H. marginatobusta*, and *H. sub-lutea* are all more or less affected, but the three kinds most conspicuous for their tenderness are *himalaica*, *maderiensis variegata*, and *algeriensis variegata*. These should never be planted largely in gardens for that reason. The finest and hardiest green-leaved Ivies are *arborescens*, which makes a rich rich winter group, its growth quite tree-like; *grandis*, very close growing, rapid, free, and excellent for covering a wall quickly; *Glymmi*, the foliage abundant and of a polished green colour, very ornamental; *caenwoodiana*; the large-leaved *H. dentata*, appropriately described as the Giant Ivy; *H. Rægnieriana*, one of the best of all, free, hardy, and the leaves of a fine green colour; *lobata major*, *maculata minor*, very close in growth; *Emerald Gem*, which is as useful as any of the green-leaved

varieties, and canariensis. None of these are in the least touched by frost. Of the variegated varieties the following are in good health, bright and attractive to look at, and covering closely the wall. Those kinds that make a patchy growth are not desirable, as they have a very unsatisfactory aspect. *H. aurea elegantissima* is charming with its greyish green leafage, margined with creamy white, the growth free and rapid. The variegation is more white than gold. *H. marginata elegantissima*, with its small grey-green leaves, margined with white or cream colour, is very pretty, and so also is *H. marginata robusta*, which has larger leaves and a silvery margin; it is a plant of rapid growth and very hardy. Gold Clouded is well variegated and of close growth, and *H. angularis aurea*, which, as seen at Chiswick, is very little variegated, the leaves being almost wholly green. But it is of value for its vigorous growth. The great point is that they are bright throughout the winter and not disfigured by frost. If a fair collection is desired, *H. palmata aurea*, which is not much variegated, but a good kind nevertheless; *H. spectabilis aurea*, and varieties of *arborescens* may be added. A very beautiful Ivy and quite distinct is *H. atro-purpurea*. The growth is strong, free, and moderately rapid, whilst the leaves are of a rich chocolate and bronze colour, very effective in the winter and unharmed by frosts. Two singular varieties are *conglomerata* and *minima*. Both would do well for the rougher parts of the rockery, *conglomerata* in particular. It has a distinct habit, twisted, so to speak, and produces an abundance of small green leaves. *Minima* is more beautiful. The growth is very rigid, but the leaves are bronzy green, boldly veined with a glaucous colour. Neither gets hurt by frosts. From these few notes, those who contemplate planting Ivies may judge of the most hardy varieties. It is disappointing for the leaves to be quite browned in the winter by frosts at a season of the year when they are wanted to give colour to the garden. As regards *H. dentata* and *H. Rægnieriana*, they are better for covering outhouses than walls. The smaller leaved kinds should be chosen for the latter purpose. F. L. P.

The Venetian Sumach (*Rhus Cotinus*).—In addition to its charms when in flower there is yet another feature very characteristic of the Venetian Sumach other than that noted at p. 145, and that is the fine colour of the foliage upon the approach of autumn, this being of quite a lovely shade of rosy crimson. Single plants are very effective, but a group is more so, and shows up conspicuously in the distance. At a time when flowering plants or shrubs are on the wane anything in the nature of bright colour in the foliage fills this void.—A. Y.

Andromeda japonica.—I have never before seen this *Andromeda* so early in bloom in the open ground, while the blossoms are in better condition than usual, for they generally suffer a good deal from frosts and cutting winds, neither of which have given us much trouble of late. By the 1st of March some bushes had many of their flowers open, while others were rapidly approaching that stage. The flowers are borne in long pendent racemes, and when in good condition the bush is completely veiled with them. The bushy habit and dark green foliage of this *Andromeda* renders it, irrespective of flowers, a very ornamental evergreen, while during the growing season the new shoots, bark, and leaves are all of a crimson tint, especially if the plant is in a sunny spot. This *Andromeda* was illustrated by means of a coloured plate in *THE GARDEN*, November 3, 1877, and though it was introduced before that time, this beautiful shrub was up to then almost unknown. It, however, after that rapidly became popular. A variegated form in which the leaves are edged with creamy-white is very pretty, especially under glass, when in the growing season the young foliage is flushed with crimson. The North American *Andromeda floribunda* is also rapidly approaching the flowering stage, and is a good companion plant to the preceding. This usually forms a rounded bush, clothed with very deep green ovate

leaves. The flowers of this are borne in both terminal and axillary racemes towards the ends of every shoot, and they remain in beauty a considerable time. In this species the flower-buds are very prominent throughout the winter, but they are proof against even severe frosts. There is a variety—*latifolia*—in which the foliage is altogether larger and broader than in the type. Both these *Andromedas* are extremely useful for flowering under glass, as with little or no forcing they may be had in bloom before winter has left us. They remain in flower for a lengthened period, and so dense is the mass of hair-like roots, that the plants can be readily lifted without any fear of injury. Though best known under the generic name of *Andromeda*, these two species are, by the latest authorities, included in the genus *Pieris*, a few other examples of which are to be occasionally met with. The large-growing *Pieris formosa* is a highly ornamental *Arbutus*-like shrub, but it is too tender for the open air in this country, unless in especially favoured localities.—H. P.

Berberis virescens.—There is a good deal of confusion among some of the Asiatic *Berberis*s, the specific names of *aristata*, *asiatica* and *Lycium* being used for various forms, so that it is often difficult to know which species is really meant when any of them are mentioned. One of them, which is most frequently known as *Berberis aristata*, is, I see, at Kew regarded as *B. virescens*. The prominent feature of this *Berberis* during the winter months is the warm reddish brown of its bark, which enables it to be at once singled out from any other kind. *B. virescens* was figured in the *Botanical Magazine*, t. 7116, and reference was there made to its several prominent features, but the bright-coloured bark was not mentioned. It is a native of the Sikkim Himalayas, and forms a somewhat upright-habited bush with rather small leaves and sulphur-coloured blossoms. A mass or clump of this *Berberis* forms such an attractive winter feature when devoid of foliage, that it must be classed with the Dogwoods, some of the Willows and such things, which serve to enliven our gardens or woods during a bright winter's day.—T.

Travelling of roots.—The mode in which roots travel in pursuit of food (moisture) is often remarkable. Innumerable instances have been published. But I think the enclosed is one of the most striking which I have come across. The specimens kindly sent to the Kew Museum by the vicar of Petersham are most extraordinary. The roots seem to have behaved more like the mycelium of a fungus than an ordinary arbutus structure.—W. T. THISELTON-DYER, in *Nature*.

Memorandum by the Rev. W. H. Oxley, Vicar of Petersham, dated Feb. 16, 1893.

Roots of a *Wistaria* from the dining room of Eden House, Ham, just demolished. The root entered the room by a very small chink in the side of the window, near the ceiling, and on removing the paper, which had not been disturbed for many years, from the walls (of the room about 14 feet square), the whole of the plaster beneath the paper was found covered with a fine network of roots spreading all round the room. The specimen is about one-third of the whole roots and the stem where it entered the room. There was not the faintest appearance of anything of the sort on the surface of the wall paper to give rise to the suspicion of these roots being there, and the room was continually inhabited, with fires, &c.

Use of gas-lime.—The following notes with reference to this lately appeared in the *Field*: If anyone asked me, I should say, do not use it. If it is put on the ground in the spring it will burn crops up, Peas especially. If it is to be used at all, it should be sown thinly on the ground in November and dug in early in the spring, so as to get rid of its burning properties. If your correspondent has already used it, I should advise him to dig it in as soon as possible. Soot sown over the ground at this time of year will destroy all wireworms, and is a splendid manure.—H. L.

—My experience is that it has considerable value against anubury in Turnips and club in Cab-

bages, but I have failed to discover any remedy for the Carrot worm or his congener, which attacks Onions. Paraffin in moderate quantity does seem to have some effect on the Carrot worm, and certainly some varieties of Carrot resist its attacks better than others. I have found none equal to that known as James's Scarlet, and, as a matter of course, it is desirable to sow on ground heavily manured in the previous year for some other crop, using no fresh manure, but, when the plant is pretty well grown, giving a light dressing of nitrate of soda and pulling as soon as there is any withering of the tops, which shows the presence of the worm.—AQUARIUS.

GARDEN FLORA.

PLATE 901.

THE GENISTAS.

(WITH A COLOURED PLATE OF GENISTA ÆTENSIS.)*

ACCORDING to Bentham and Hooker in their "Genera Plantarum," there are seventy species of the genus *Genista*. No less than thirty are described in Loudon's "Encyclopædia of Trees and Shrubs," but among these are several which are now included under *Cytisus*; several others in all probability are not now to be found in cultivation in Britain. Loudon, after enumerating his thirty species, concludes as follows: "There are various other names in collections and a great many in books, but the whole genus is in such a state of confusion, that nothing can be determined with certainty respecting the species till they are all collected together and cultivated in the same garden and examined." In the following list, which for convenience of reference is arranged alphabetically, only those species are mentioned which are now in cultivation. A large number which have not proved hardy in the neighbourhood of London are omitted. Many of the *Genistas* are desirable garden plants, and are not at all particular in their requirements. They thrive in almost any soil which is not too wet, and are readily raised from seeds.

G. ÆTENSIS, a native of Sicily and Sardinia, is one of the best garden plants in the genus. The coloured plate accompanying these notes shows in what profusion the flowers are produced. It was introduced in 1816. In a young state the twigs are sparsely clothed with linear silky leaves, but when old no leaves are developed, and the green slender twigs perform the functions of leaves. An old tree—for this species attains a height of 12 feet or more—is a beautiful sight in July or August when in full flower. Like many other members of the Leguminosæ, it does not appear to be long-lived, but the plant is so easily raised and grows so quickly that it is well to have a few specimens in the shrubbery. Amongst the synonyms of *G. ætensis* are *Spartium ætense* (under which name it is figured in the *Botanical Magazine*, t. 2674) and *Spartium trispermum*.

GENISTA ALBA and *G. MULTIFLORA* are synonyms of *Cytisus albus*.

G. ANDREANA is a common garden name for *Cytisus scoparius* *Andreanus*, a beautiful coloured plate of which appeared in *THE GARDEN* of Aug. 27, 1892.

G. ANGLICA (the Needle Furze, or Heather Whin) is a prostrate spiny shrub, sometimes growing to a height of 2 feet. It is widely distributed throughout Western Europe, and in Britain occurs on moist moors from Ross southwards. The short leafy racemes of yellow flowers appear in May and

* Drawn for *THE GARDEN* in the Royal Gardens, Kew, by Gertrude Hamilton, July 22, 1892. Lithographed and printed by Guillaume Severeys.



MIMULUS PUNCTATUS

June. It is also known under the names of *G. minor* and *G. brutia*.

G. ASPALATHOIDES, a native of South-western Europe, makes a densely branched, compact, spiny bush from 1 foot to 2 feet in height. It flowers in July and August (the yellow blossoms are somewhat smaller than those of *G. anglica*) and is a desirable shrub for the rockery. Other names for it are *Spartium aspalathoides* and *S. erinaceoides*.

G. ANXANTICA, found wild in the neighbourhood of Naples, is very nearly allied to our native Dyer's Greenweed (*G. tinctoria*). It is very dwarf in habit, and its racemes of golden yellow flowers are produced in great profusion in late summer. A desirable and beautiful rock garden plant.

G. CANDICANS, sometimes called the Madeira Broom, is not so hardy as the species already mentioned and has pale yellow flowers. Its correct name is *Cytisus monspessulanus*.

G. EPHEDROIDES, a native of Sardinia, &c., is a much-branched shrub 2 feet in height, bearing yellow flowers from June to August. The aspect of the plant much resembles that of *Ephedra distachya*.

G. GERMANICA, a species widely distributed throughout Europe, makes a bright rock garden

local, being confined to gravelly heaths in the south and south-west of England. It grows freely and flowers abundantly in May and June. Like the rest of the British species of the genus, it has bright yellow blossoms.

G. PRÆCOX is a garden name for *Cytisus præcox*, a beautiful hybrid between the white Spanish Broom (*Cytisus albus*) and *C. purgans*, a golden-flowered species.

G. RADIATA is a native of Central and Southern Europe. When fully grown it is 3 feet or 4 feet in height, evergreen from the colour of its much-branched spiny twigs. The terminal beads of bright yellow flowers are produced throughout the summer months. It is quite hardy at any rate in the south of England. Some of the synonyms of this plant are *G. holopetala*, *Cytisus radiatus*, and *Spartium radiatum*. In some gardens it passes under the name of *Genista hispanica*, which rightly belongs to a widely different species, which has been already mentioned in these notes.

G. RAMOSISSIMA.—A native of Southern Spain, and one of the best garden plants in the genus. It grows about 3 feet high, and the slender twigs are laden in July with bright yellow flowers. This also passes under the name of *G. cinerea*.



The white Spanish Broom (*Genista (Cytisus) alba*) at Broughtly Ferry, N.B.

shrub not more than a couple of feet in height. It flowers very freely during the summer and autumn months, and the stems are inclined to arch when 1 foot or more high. Sometimes met with under the name of *Scorpius spinosus*.

G. HISPANICA, a native of South-western Europe, is a compact undershrub, evergreen from the colour of its shoots. It scarcely attains more than 1 foot or 18 inches in height, and the crowded racemes of yellow flowers are borne at the tips of the spiny twigs from May onwards. I have seen this species under the names of *G. villosa*, *Spartium hispanicum* and *Ulex nanus* (the last name was given to the plant in one of our largest nurseries).

G. JUNCEA.—This is the yellow Spanish Broom, and its correct name is *Spartium junceum*.

G. LINIFOLIA is now regarded as a true *Cytisus*.

G. MONOSPERMA, a native of Spain and Portugal, is a very beautiful white-flowered shrub or small tree. Unfortunately, it is not hardy (except against a wall) in the neighbourhood of London, and our summers are not hot enough to allow the plant to develop its beauty. Perhaps it might do in sheltered places on the south coast or in the Channel Islands, and the species is so strikingly handsome in a wild state that the experiment is well worth trying in the localities suggested.

G. PILOSA, a widely distributed European species, is a dense, prostrate bush and a delightful rock garden plant. In Britain it is rare and

G. SAGITTALIS is widely distributed throughout Europe. In habit it differs widely from any of the other species here mentioned, the leaves being replaced by a foliaceous or winged-jointed stem. It scarcely grows a foot high, and forms a mass of branches bearing erect terminal racemes of yellow flowers in May and June. It is also known as *G. herbacea*, *Cytisus sagittalis*, and *Spartium sagittale*.

G. TINCTORIA (the Dyer's Greenweed).—This species yields a yellow dye, hence the popular name. It is widely distributed throughout Europe, including Britain, and North and West Asia; it has also become quite naturalised in some parts of North America. Occurring in a wild state in Britain, it rarely exceeds 18 inches in height, and is often a more or less prostrate, spineless shrub bearing a profusion of bright yellow flowers from July until September. A double-flowered variety of this makes a charming rockery plant.

G. TINCTORIA VAR. *ELATIOR* is a tall-growing form from the Caucasus, which under cultivation frequently grows from 4 feet to 5 feet high, and bears huge panicle inflorescences. It is remarkably well off for names, as I have received plants from various sources named as follows, and have compared them carefully in a living state: *G. dumetorum*, *G. elata*, *G. frutescens*, *G. italica*, *G. marginata*, *G. multibracteata*, *G. ovata*, *G. polygalæfolia*, *G. pubescens*, *G. sibirica*, *G. thyrsoflora* and *G. virgata*.

G. VIRGATA.—A native of Madeira and one of the most beautiful species of the genus. At Kew there are many old plants from 6 feet to 10 feet high, and as much through, which in July are one mass of colour, every one of the slender branchlets terminating in an upright raceme of golden yellow blossoms. These plants must be twenty or thirty years or more old, and must have passed through winters which injured many of our native shrubs and trees. Sometimes *G. virgata* flowers a second time in October, but never so profusely as in July. This species should be more generally planted in shrubberies than it now is. It passes in books, &c., under the following names: *G. cinerea*, *G. elata* (both these names are also given to species widely differing from *G. virgata*), *G. gracilis*, *Cytisus tener*, and *Spartium virgatum*.

C. WELDNI is an incorrect name for *Petteria ramentacea*. N.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

PARSNIPS.—Seed of Parsnips sown now will produce roots quite large enough. I do not care for those with extremely long tap roots. Judges at exhibitions favour these, but if the long thong-like roots were removed there would be little left to cook. On light soils especially, the sooner the seeds are now sown the better, as on light land there is not the likelihood of their becoming too large. The soil must be in a highly fertile state, but free from recent additions of manure, or the roots will most surely become forked. The soil having been deeply worked and well pulverised, apply a surface-dressing of burned refuse and soot, working it well into the surface with a rake previous to drawing the drills. If the soil is loose, tread the surface equally over, drawing the drills quite 18 inches apart on strong land and 3 inches less on light soils. Either sow the seeds thinly along the drills or drop a few at intervals of a few inches. Thick sowing is an evil, as from the seedlings appearing too thickly, those which are left are very apt to become disturbed at the time of thinning; consequently the tap-root is apt to get broken, and forking ensues.

EARLY RADISHES.—There will not now (weather permitting) be any difficulty in maintaining a supply of Radishes from the open air. There are now some remarkably early selections of the Turnip-rooted forms. Whether or not the Radishes will be of good quality will depend entirely upon how they are managed. A warm border is all very well for one or two of the earliest sowings, but later on and for succession an east border is the best position, as being cooler the growth is more satisfactory. If the soil is not well adapted for the quick growth of Radishes it can easily be made so. Old potting soil, some burned refuse, and some old Mushroom-bed manure spread over to the depth of 4 inches or 5 inches, will help the growth of Radishes wonderfully. The seeds should be sown thinly in rows about 6 inches apart, sowing sufficient to meet the demand at intervals of a week or ten days. By the time the whole site has been sown, commence over again, as by preparing the soil in the manner I have stated there is sufficient fertility in it to produce good crops throughout the season.

GLOBE ARTICHOKE.—Although the severe weather experienced at the commencement of the year played havoc with Globe Artichokes, yet where adequately protected the stools are perfectly secure. The bulk of the protecting material should now be removed. At the same time a little of the lightest of the litter should be sprinkled over the tops to protect the young growth from any cold weather we may yet have. Unless in the most favourable districts and where the growth is not quite killed down, early suckers may be removed for planting, but for the present at any rate do not attempt to part the stools until they are quite fit for removal.

CHINESE ARTICHOKE.—I do not think this is likely to become very popular, the small size of the tubers being against them; but, at the same time, it is as well to grow some. Although the tubers are small, they must have ample room for their development and the soil also be in a fertile state. The rows should be 2 feet apart and the tubers 9 inches or even 1 foot, placing them also 3 inches beneath the surface. A dozen rows 2 yards or 3 yards in length would be quite sufficient.

CAPSICUMS AND CHILIES.—Whether for growing in pots or for planting out against a south wall at the same time as Tomatoes, the seeds should now be sown. The Long Red is the variety usually grown for open-air planting. Sow the seeds thinly in 5-inch or 6-inch pots, placing them on a gentle hotbed, afterwards growing on without a check. A hotbed is the best position to grow them in, during the earlier stages at any rate, this keeping down red spider.

CELERIAC.—This should also now be sown, sufficient plants being raised in an ordinary seed-box to meet the requirements of a large establishment. Sow the seeds very thinly, placing in a gentle warmth to germinate, afterwards pricking off and treating the same as for Celery.

MAIN-CROP CELERY.—The Celery from this sowing will form the main crop for the greater part of the winter, and too much care cannot be taken in its preparation from the time of sowing the seed until ready for planting. The least check is detrimental to its well-doing, and as this is likely to happen when the seed is sown in pans or boxes, every care must be taken that the seedlings do not suffer. What is needed is a gentle warmth either on a moderate hotbed or in a fairly warm structure. Use sweet soil (no refuse from under the potting bench), and take the precaution to sow the seeds thinly. A sowing may also take place on the surface of a gentle hotbed. No great heat is needed, just sufficient to create a moderate warmth, so that by the time the seedlings appear air may be given as required. With no other convenience useful plants may be raised in a cold frame prepared with suitable soil and some rotten manure beneath. In the south of England some of the best quality Celery I ever tasted was produced from plants raised in the open air. In this case a proper bed was prepared in a warm and sheltered corner.

A. YOUNG.

HARDY FRUITS.

STRAWBERRIES.—Some varieties are starting feebly, being evidently injured somewhat by the January frosts, but the more robust are in a very satisfactory state. Those not long planted on deeply-dug freely manured ground are apt to grow too luxuriantly, the leaves smothering the fruit; whereas the latter ought always to be thrown out clear of the leaves, or otherwise it ripens and keeps badly. If, therefore, the ground was not firm prior to planting, or if it has been loosened considerably by frosts, give it a good trampling, doing this during dry weather, afterwards lightly stirring the surface with a Dutch hoe. These young beds stand in no need of manurial dressings, but if the soil is of a non-retentive character, mulch early with strawy manure, and there will then be less likelihood of the plants suffering from want of moisture at the roots when fruiting. Where the plants have already produced one or more heavy crops of fruit and are not greatly liable to form too much leafage, they will be all the better for a dressing of some kind of manure. A chemical manure rather rich in potash and nitrogen is suitable, Peruvian guano, enough of this being given to just colour the surface of the ground up to and at a good distance from the crowns, also answering remarkably well. These manures—which ought never to come into contact with the young leaves, or it will cripple them—are best applied during showery weather, and should be lightly stirred in with a Dutch hoe. A free use of the latter and the manurial application are good preventives of slugs and other insect pests. Early

mulching, unfortunately, favours an increase of these enemies, but at the same time it ought not, for reasons already given, to be deferred much longer. Market growers make one good mulch of strawy manure suffice, and this, being given early, is washed sufficiently clean for the fruit to rest upon when swelling and ripening. Private gardeners have to be rather more particular, and if they mulch early with strawy manure, this has to be surfaced over with cleaner litter or fresh straw before the fruit is set. Very old beds, and there are many such in the country, can only be kept in a profitable state by means of liberal supplies of sewage water or liquid manure of some kind, these being applied while yet the ground is in a fairly moist state, and, therefore, in the best condition for receiving and retaining them.

PLANTING STRAWBERRIES.—Strawberries move well just when top and root growth is commencing, and this fact is frequently taken advantage of by those who are unable to put out strong, well-rooted plants early in August. When the older beds were cleared of rubbish, the requisite number of runners ought to have been stored in nursery beds and may be transplanted from these now. Nurserymen can always supply well-rooted little plants from nursery beds at this time of year, and those, therefore, who are anxious to have a good crop from their new beds next year should order and plant at once. What Strawberries thrive best in is a freely-manured, deeply-dug or bastard-trenched quarter, this having been got ready long enough for it to have settled considerably. They will also do well on ordinarily dug ground if not too poor. Spring-planted Strawberries succeed admirably on ground prepared for Onions, the two crops occupying the same ground for one season, one or two rows of Onions being either planted or sown mid-way between the rows of Strawberries. In any case, plant moderately strong-growing varieties of the latter 18 inches apart in rows 2 feet asunder, giving an extra 6 inches each way to the more vigorous sorts, notably the popular Sir J. Paxton. Use a trowel and not a dibber for planting, and fix the soil firmly about the roots, taking good care that the latter are not cramped up together. After the soil is levelled over and raked down finely, either plant or sow Onions between, or Lettuces, Spinach, or other quick-growing crops may be grown between the rows. On no account permit either very late autumn planted Strawberries or any put out now to bear fruit this season, and if also kept free of runners and weeds they will develop into fine plants for fruiting next year.

FORWARDING AND PROTECTING STRAWBERRIES.

—The earliest fruit is generally gathered from strong young plants put out the previous autumn on a sunny raised bed or border. Noble is, perhaps, the most prececcious variety, or at any rate it can be had very early with the expenditure of a little extra trouble. It is a variety that bears rough treatment well, and can be transplanted without sacrificing a crop. If, therefore, there is none of it on a warm border, try what can be done in the way of forming a temporary raised bed at the foot or rear to a south wall of any kind. Make the soil rather rich and with a good slope to the front, and move any strong young plants of Noble that can be spared from their present quarters, or even any that were forced last year and planted out afterwards. Transplant with a good ball of soil about the roots, dispose the plants well clear of each other, and fix firmly in the fresh soil. If further protected from frosts and not allowed to suffer from want of water, good early dishes in fruit will be had from a week to a fortnight in advance of any grown quite in the open. Already very early Strawberries are showing their bunches of flower, and if extra early and fine fruit is desired, something ought to be done towards saving the first flowers. They are most susceptible of injury from frosts, but if a framework of some kind could be fixed over the beds or rows, and either mats, blinds or branches of evergreens or Firs spread on this, quite a severe frost can be warded off. This little extra trouble will not be thrown away during the majority of seasons.

PLANTING OUT FORCED STRAWBERRIES.—If good dishes of Strawberries are required during the latter part of August, plant out the earliest forced plants of Noble. Harden these off first in cold frames and then plant where they can be protected from birds, a moderately cool, rather than a hot border answering best. Only slightly reduce the old ball of soil and roots, plant rather deeply and firmly, and never let the plants become very dry at the roots.

W. IGGULDEN.

PLANT HOUSES.

GREENHOUSES.—**VENTILATION, &c.**—With the increasingly fine and sunny weather it will be necessary to pay close attention to ventilation. The houses should never be allowed to get warm before air is given in sufficient quantity to prevent a rapid rise of the temperature. In many cases it will be possible to leave a chink of top air on all night, particularly with lifting lights; this will do good and tend towards a hardening of the growth. Side air from the lights will be hardly safe whilst we are still getting 8° or 10° of frost, but the air bricks lower down may be left open except on the coldest nights. Whilst ventilating freely, which is quite indispensable in fine weather, a watch must be kept against keen cutting easterly winds, which we may yet experience. Too much exposure in this manner may bring on an attack of mildew upon plants susceptible to this insidious pest; such, for instance, as in the case of several Ericas, those with close dense growth and foliage being the most likely to be attacked. The tricolor section, Cavendishi and others of similar growth should be closely watched. A very good general preventive is to dust some sulphur along the pipes whilst they are damped to receive it; the black sulphur I prefer, as it does not make any show. In our case we are now using it constantly in a house the roof of which is covered with Roses just at a stage when liable to mildew. The plan we adopt is to lay some old shading along the pipes and then shake the sulphur upon it two or three times a week; wherever this plan could be adopted it would be not only a safeguard, but a cure also.

SHADING.—Whilst in the case of stove plants it will soon be necessary to apply shading, it will do more harm to greenhouse plants than good, weakening the growth at the start whilst the flowers of such as Cape and New Holland plants will not attain to that intensity of colour they would otherwise do. Where a few plants require to be shaded they had better be stood by themselves and then be duly provided for. Cinerarias, for instance, will be kept all the better with a little shade, so will such bulbous plants as Tulips, Hyacinths, and Narcissi. After a very sunny day as the sun declines a damping down will refresh the plants; this will be much better than shading in general. It will be just as well to see to the blinds and have them in readiness, more particularly for stoves than greenhouses. The sooner they are fixed upon the stove the better, particularly for such fine-foliaged plants as Marantas, Alocasias, and Dracenas. By fixing I do not mean permanent shading, for anything more injurious or weakening to the growth could not well be contrived. Guard against using heavy shading. Plant growers are finding that the heavy materials are altogether a mistake.

RETARDING PLANTS.—With the remarkably fine weather for the time of year, many plants will come forward with a rush. Cinerarias, in order to prolong the season, may be safely kept in frames or pits now, so long as they are protected at night. The same place will also be better for herbaceous Calceolarias for the same reason, as well as to guard against overcrowding. A pit without fire-heat and a moist bottom will suit these plants admirably. So, indeed, it will for late Primulas of the Chinese section, and the species also, with Auriculas where hitherto kept in a cool greenhouse. The latest of the bulbs of such as Hyacinths, Tulips, Daffodils, &c., should also be kept quite cool. In this manner it is possible to prolong the season for quite a fortnight without any

difficulty. By removing such plants, there will be more room for other things now growing apace, as Pelargoniums, with Fuchsias following in succession; whilst Azaleas should also have more room as they come into flower. The latest of these must likewise be kept quite cool; so long as the frost does not touch them, they will be safe enough.

WATERING.—Plants in general will now dry up more quickly than a few weeks back, and many will want looking after all the more frequently. The Epacris now in flower and approaching that stage will take more water, so will Acacias and Ericas in small pots. The Epacris whilst being intolerant to any excess so as to sodden the soil will, on the other hand, suffer considerably if allowed to become dry so as to flag at this time of the year. Those who are growing the beautiful blue Leschenaultia (*L. biloba* major) must be careful not to over-water their plants at any time. Over-watering may cause a check that will encourage mildew. Even about this time this plant will not take nearly so much water as the Epacris and Ericas of corresponding size. Small plants of other hard-wooded kinds will want looking over more frequently, particularly those now advancing into flower. In most cases if they suffer now the effect is felt in weakened or decrepit flowers. Specimen plants also will want closer attention. Where these have probably gone for a week or even a fortnight without water, they will now take it again in half the time. These must be judged, however, according to the state of their roots, and as to whether they are developing a heavy crop of flower or a light one. During a bright sunny day I would much prefer to look over the plants twice or three times than to water them in advance. Soft-wooded plants will not be quite so particular in this respect, but it is yet early to rush the water into any that are not pot-bound. It is not always from want of water that a plant will flag; this fact must be borne in mind and duly acted upon. JAS. HUDSON.

ORCHIDS.

THE weather continues to be all that can be desired for the cultivation of Orchids. The Dendrobiums making their growth always feel the benefits of fine weather. Full instructions were given as to repotting and rebasketing them at p. 173, and this must be continued as the plants pass out of bloom, but I do not observe that I remarked upon the importance of the plants being firmly fixed in the flower-pots or baskets. The plants in pots should have sticks placed to them; one in the centre of each pot will sometimes be sufficient; when the plants are large more may be needed. On the other hand, large plants sometimes do not require sticks at all, as the solid mass at the crown of the plants is sufficient to steady them. The teak baskets are formed of four wires fastened at each corner, and when plants are unsteady after repotting I fasten the stems to the wires. When once roots have run well into the new material the plants are then independent of artificial support, and most of them root very freely indeed after being repotted. Mr. Murray, gardener to Mr. Norman C. Cookson, Wylam-on-Tyne, has sent me a box of blooms of seedling Dendrobiums. Some of them are hybrids, and one is an improved form of *D. nobile*. It is quite certain that we can now be independent of imported Dendrobiums for the decoration of our hothouses and the production of cut flowers, although I freely admit that it would be something in the nature of a calamity if we could not obtain importations of such lovely Orchids as *D. Wardianum*, *D. formosum*, *D. Jamesianum*, and other very beautiful species at intervals of a few years to keep up the stock of healthy plants, for notwithstanding all that has yet been done in the way of hybridising, and even with *D. Wardianum* as a seed or pollen parent, there is nothing to compare with the best varieties of *D. Wardianum*, and the hybridist has not yet touched the nigro-hirsute section, of which *D. formosum giganteum* is the best. Mr. Murray sends a seedling *D.*

nobile equal in form and richness of colour to the very best of them. Orchids may be improved by selection as well as by hybridisation, for it is well known that the best forms of *D. nobile*, such as Sander's and Cookson's varieties and the truly handsome *D. nobile nobilissimum*, are quite as beautiful and of as much or more commercial value as the best hybrids. If seedlings are raised directly from these varieties, the progeny may not be so good in every case, but many may be quite as good, and some of them a great deal better. Of course it is a work of time, and many persons never begin at all, because they have to wait so long for results. The small seedlings are in themselves very interesting. After passing through the winter in a state of rest less or more, they should now be potted off into small pots, or if they have made a growth in these small flower-pots they should be carefully repotted again, but never given a large shift. These small seedlings require the very best potting material, small nodules of good fibrous peat mixed with freshly-gathered Sphagnum chopped up finely. They thrive well when the Moss partly covers the surface of the compost, with pieces of potsherds and charcoal cropping out here and there. I find too that the plants thrive best in a light position near the glass roof, and to get them in this position I put a number of small pots into the teak baskets in which Orchids are usually grown, plunging them in Sphagnum and broken-up potsherds. The Sphagnum should be in a growing state on the surface, and the plants themselves must not be allowed to become very dry at the roots.

The section of Dendrobiums producing drooping racemes of which *D. thyrsiflorum* is the type is evergreen, and has also been kept comparatively dry at the roots during winter and early spring. The buds are now starting from the crowns of the pseudo-bulbs, and they require a fair supply of water at the roots and the warmth of a Cattleya house. I prefer resting them in the Cattleya house to the cool vineries where the deciduous species pass the winter in a greenhouse temperature. They remain in the Cattleya house until the flowering period is over in May, June, and July, when they are placed in the warmest house after being repotted or surface-dressed, as the case may be. The different species and varieties of species we have carry the blooming period over three months. The first to flower is *D. fimbriatum* and its variety *oculatum* or *Paxtoni* of gardens. In an importation of a dozen plants of this species I had half-a-dozen differing from each other considerably. *D. densiflorum* and the variety *Schroederi* follow closely, also *D. Farmeri* and the sub-variety *albiflorum*. *D. Griffithianum* is a noble form and comes in with *D. Farmeri*, but it is easy to make six weeks' difference in the time of flowering by starting them earlier in heat and moisture, or keeping them cool and dry at the roots. *D. thyrsiflorum* also claims specific rank and is later in flowering than either of the above. It is nearest to *D. densiflorum*, but for garden purposes is sufficiently distinct; the variety *Walkerianum* is larger and handsomer than the type. *D. Dalhousianum* flowers as late as July with me, and it takes so long to make its growth, even in great heat, that it seldom enters the resting period until November or December; it is a very handsome species. I had a plant of it last year with thirty-six flower-spikes—a truly noble sight. *D. moschatum* and its variety *Calceolaria* also belong to the group of tall-growing varieties. The flowers are the largest of this group and make a brave show, but for a very short period. This section does not take kindly to hybridising. I have crossed many blooms of *D. Dalhousianum* with other species, and the pollen seems to take promptly, for the petals collapse in the usual way, but the flowers have always passed away without forming any capsules. Nothing has been done in the way of hybridising any of the above raceme-flowering section, but the flowering period is with us, and a fair field is open to those who can solve the problem of raising plants from them.

At present, with mild nights and not much wind, more ventilation may be given at night, as well as

by day. Shade now from bright sunshine all through the different divisions.

J. DOUGLAS.

KITCHEN GARDEN.

MUSHROOMS UNDER COOL TREATMENT.

FOR several years past I have taken every opportunity of pointing out how much better Mushroom beds succeed under comparatively cool treatment than they do when subjected to much fire-heat. By cool treatment I do not mean the total abolition of fire-heat during the coldest part of the year, but rather a very limited use of it. For instance, whenever the weather outdoors is at all mild—and we have had many very mild days during the last three months—I hold that fire-heat ought to be turned off, or at any rate to the extent of keeping the temperature of a house down to 50°—less rather than more; while in very cold weather, if the beds are in bearing, or if it is desired that they be soon productive, those in charge ought to be content to see the thermometer standing at about 45°. A freer use of fire-heat undoubtedly hastens productiveness, but lessens rather than increases the weight of the crops. It has the effect of unduly drying the beds, or to such an extent as to render them impervious to subsequent waterings. Then, again, the application of so much fire-heat necessitates a free use of the syringe, and it is my belief numberless beds are simply ruined by daily over-head syringings. Doubtless a "well-heated" Mushroom house, the temperature in which very frequently stands at about 60°, is most favourable to the growth of Seakale and Rhubarb, but it does not pay to study and forward these at the expense of the Mushrooms.

Neither now nor at any other time do I advocate the maintenance of extremely low temperatures, as I have found from experience that fire-heat cannot be wholly dispensed with by those in charge of ordinary Mushroom houses, and who are called upon to keep up a nearly or quite constant supply of Mushrooms throughout the late autumn and winter months. Moreover, it is only by a moderate use of fire-heat that coarseness of produce can at times be avoided, medium sized to small Mushrooms or those most in demand in private establishments being most surely had with the assistance of gentle fire-heat. In addition to being moderately large, those not grown in strong heat are also succulent and heavy; whereas forced Mushrooms are thin and dry. Recently I have been well satisfied with the behaviour of a large bed spawned early in last October. It was formed of rather stale manure, which contained rather more moisture than is usually the case with Mushroom bed materials. Knowing that it would not long retain much heat, it was made fully 18 inches deep at the back and rather less at front. It never became very hot, and when spawned the heat was about 75°. In less than a week after spawning the heat had declined surprisingly, the trial sticks feeling quite cold and moist to the hand. I ought also to add that rather large lumps of spawn were used, each brick being broken up into no more than eight pieces—a precaution always taken whenever there is a likelihood of much vapour being generated for a short time after spawning. Instead of soiling over with sifted or fine fresh loam, old Cucumber bed soil with some of the decayed manure mixed with it was used for casing over the bed, this also being in a

rather moist state. Mushrooms being wanted from other beds during November and December, gentle fire heat was given (ours is a flue-heated structure), and this doubtless favoured the spread of mycelium in the newly-spawned bed. None being wanted during January, the house was kept perfectly cool, no fire-heat being given throughout the spell of severe frosts that was experienced. At one time the new bed was frozen so hard that the ice glistened on it when examined by candle-light, and had I not known other instances of Mushroom spawn defying the effects of frost, should have set this particular bed down as a certain failure. As it happens, it is exactly the opposite. Early in February the fire was again started, and in less than three weeks great heaps of Mushrooms were springing up thickly in all directions. As many as four dozen Mushrooms have been counted in one of these heaps, the weight after very lightly shortening the stalks after the manner of market growers ranging from 2 lbs. to 2½ lbs.

It is my firm belief that under none other but cool treatment can such heavy crops be obtained, and even not then if the manure used is in an over-dry state when the bed is formed, or, worse still, becomes very dry by overheating after being made into a bed. No doubt a dry heat is most favourable to a rapid and strong spread of mycelium, but the bed may be overrun by the latter, and yet but a poor crop be had. To all appearance the bed that I have just commented on was only slightly taken possession of by the spawn, but the manure being in a moist decaying state afforded the requisite amount of moist food, and without which not many Mushrooms are forthcoming. When a bed has to be repeatedly gently watered in order to supply the much needed moisture, the crops are seldom good, for the simple reason that it is next to impossible to remoisten horse-droppings once they have become thoroughly dry. Given good spawn and moderately moist, well-sweetened manure, all that is further necessary is the maintenance of very gentle heat to bring up a heavy crop of Mushrooms. The latter may be forthcoming in about six weeks, or it may be from two months to three months before they appear, a long wait, however, being amply compensated for.

W. IGGULDEN.

Onions.—The Onion grub is very injurious here, so that for this important crop we have to take every precaution possible in making preparations and carrying out every detail in any way likely to minimise its ravages; so we cultivate well and thoroughly, dressing heavily with soot, wood ashes, salt, lime, artificial manures, or any other available ingredient so often prescribed as remedies; still, all this does not prove an infallible preventive, so we adopt yet another plan, which we find fairly efficacious, though old, and which I seldom see recommended in these days. Hence this brief note, hoping it may be useful to, perhaps, a beginner. I do not know exactly what to call the operation, unless I term it "earthing up." In May, by which time the Onions are well up, the rows of young plants are well dusted over with fine wood ashes, and, if available, soot also; the spaces between the drills are then well hoed, the soil well pulverised and rendered as fine as possible. This is then drawn well up to the plants either with a hoe, or, better still, with the feet, one foot each side the row. It is of the utmost importance that the soil be made fine and powdery, so as to fill every crevice around the necks of the tiny plants, and if it cannot be got into a fit state, better procure some from under the potting bench, or, better still, the smother heap, even if it entails considerable labour and some expense. This operation if carried out thoroughly and at the proper time protects the

most assailable part of the Onion, where the egg is deposited and the grub develops. In order to avoid loosening the soil around the roots or disturbing the plants in any way conducive to attacks of the grub we sow rather thinly, and never thin out the plants, and although phenomenal size cannot be expected in plants thus treated, still it is astonishing the crops of useful bulbs that are produced in this manner and the clusters that find room in a drill. It is needless to add that the ground is trodden firmly both before and after sowing—in fact on our light, shaly soil we find solidity and firmness beneficial to all crops. —J. R., *Merioneth*.

Digging soils.—"J. R." in his admirable article on the "Cultivation of Violets" (p. 157), amongst other details, says that on account of local conditions he leaves the soil undisturbed until February, and that it is a practice that should be oftener adopted in similar districts, a statement I fully agree with. The soil I have to deal with is a very stiff clay with a cold subsoil, and if this was dry in the autumn, the garden would be in a sorry plight for spring cropping. There is too much "rule-of-thumb" advice given, and young men who may be called upon for the first time to take the management of a kitchen garden, and who—there are many in this position—have had but little experience in such work, are likely to make mistakes which will lead them into difficulties. If by chance the soil works all right by adopting autumn or winter digging, well and good; but if not, it is a mistake which a season will not rectify. First find out its nature and then work accordingly.—A. Y.

HARDINESS OF CELERY.

THERE can be no doubt but that Celery generally has suffered severely from frost during the present winter. The note on this subject by "S. H. B." seems to raise the question as to how far blanching may be instrumental in creating tenderness, and he seems to infer that the later blanching is deferred, the harder will earthed Celery be. Of that I have no doubt, as I have frequently seen Celery that has been left fully exposed, because required to produce seed, quite unharmed, whilst earthed or blanched Celery has greatly suffered. But the point to be determined is, can Celery that has remained unearthed until quite late into the season be satisfactorily blanched afterwards so as to be fit for table? By that I mean fit for salading, as of course it would be fit for flavouring even if unblanched. That is a matter of some importance, because the bulk of Celery is needed for use as salading. I have seen plenty of Celery earthed very late, and have never found it to be satisfactory. I prefer to begin the earthing process moderately early, and to enable it to be done well, stripping the plants when gathered up together for earthing of any small, useless leafage, as that interferes with the proper blanching process, and very often harbours slugs, grubs, &c. When so treated the stems become more perfectly blanched, and if more tender at least it is all the more acceptable eating. Judging by what I have seen of the effects of frost on ridged Celery, I hold that most harm is done through the exposure of the leafage to frost, fog, and heavy rain, moisture settles in and about the stalks, and frost penetrates and freezes that moisture, splitting the stalks and promoting early decay. The weak point in Celery-blanching is that the stalks are not sheltered from falling moisture because of the erect position of the plants. It seems difficult to devise any other method of blanching except by erect earthing; but there can be no doubt but that could the process be performed with the plants in an oblique position, so much harm would not follow. There seem to be two safe courses open to protect Celery from frost. One is to lift all the plants fully grown and blanched—for such lifting need not be adopted till the end of November—and lay them in thickly and thoroughly, either beneath trees, where there is little frost, or in some sheltered position and to place over it, to throw off rain, snow, and check

hard frost, either glass lights, or sheets of corrugated iron, or felt covering, or something of that kind, as litter and leaves only serve to encourage slugs and other pests; or if the Celery be left in the ridges, to add a greater thickness of soil on each side, and then have to lay over the tops of the plants whenever needed, especially if rain or snow be prevalent, inverted V-shaped boards some 10 inches in depth. These could rest on the broader banks of soil, and thus thoroughly protect the plants whilst enabling air to pass beneath them. Coloured Celeries have always had the reputation of being the harder and better flavoured, hence the greater popularity of red sorts in the London market. I do not think a little colour in the blanched stems to be any detriment, but rather think it an attraction. Still further, dwarf varieties like Dwarf White Incomparable and Standard-bearer always are harder than are the tall leafy sorts. A. D.

Potato Quality and Quantity.—This variety attracted so much attention last year when both grown and cooked at Chiswick, that it will be no matter for surprise to find that it is widely grown this year. Apart from its great productiveness, remarkable even size of tubers, which are of a flattish or pebble-shaped round shape, white, and of excellent quality, features that will no doubt be found freely displayed elsewhere, the coming season will no doubt offer wide opportunities for testing its disease-resisting qualities. If found good in that respect, then will its value for all ordinary purposes be much enhanced. Without these properties, in wet, cold seasons it will not perhaps excel the old York Regent, which it in appearance and quality very much resembles, but if found to be a good disease-resister, then should it be a first-rate market Potato.—A. D.

The Bruce Potato.—Not long since it was stated that this very fine late Potato was not good from heavy land. It would seem as if there are striking exceptions, however, for I am now using a capital sample from stiff holding soil in Hampshire, and the quality and flavour are excellent. Practically it is the best of these late strong-growing disease-resisting varieties that I have tasted for a long time. I do not wonder that it has superseded for field or market culture some of the older sorts. The tubers when cooked are not only mealy or flaky, but they exhibit a fair proportion of yellow colour in the flesh, and where that is there is usually the best flavour. With such varieties as The Bruce very largely grown now, and it is far from being alone in its productive qualities, it is no wonder that Potatoes are now so plentiful and cheap.—A. D.

Cauliflowers failing in hot weather.—In gardens where the soil is gravelly and moisture often deficient, I would advise a trial of Walcheren Broccoli. I have never known it fail whenever given a trial. It may be said, why trouble about Cauliflowers at all in hot weather? At the best they are strong and full of caterpillars, requiring special care in their preparation, but in some gardens variety is required, and I have been obliged to resort to various shifts to secure the many varieties asked for. I do not say large quantities need be grown, but if a pinch of seed is sown every three weeks after the middle of March, and a few rows of Walcheren Broccoli planted, there will be no lack of nice, small, white, compact heads fit for any purpose. Of course, rich ground is essential, but much space will not be required unless wanted in quantity. The value of the above variety for summer use is that it does not bolt like some varieties, does not open so readily in hot weather, and resists drought better. I would point out that the true Walcheren must be obtained, as I have seen some so-called varieties anything but true, being coarse and large and not worth the room occupied.—G. WYTHES.

Celery and the frost.—What a number of complaints are to hand regarding the injury done to the Celery crops during the present winter.

Many of them are, however, due to neglect in providing some protecting material, nothing being better for the purpose than long litter from the stable. If cultivators allow their Celery to be frozen to a depth of 1 foot or so from the top and remain in this state, can it be expected to do aught else but rot when the weather changes, very often to rain? In heavy soil, which is so retentive of moisture, Celery is more difficult to keep than where the soil is inclined to be sandy. In our case over 1000 plants are grown, and by covering the rows during frost with the litter as described, we have not lost a dozen plants. In the absence of frost the protective material is pulled off into the trenches, where it is handy for replacing when needed. If the litter was allowed to remain over the plants continuously, however, it would favour the rotting of the leaves and stems. For many years I have relied upon Sulham Pink Celery, and it has never failed yet to give satisfaction. Any one in want of a good winter Celery should give this a trial.—E. M.

ORCHIDS.

SWAN ORCHIDS.

(CYCNOCHES.)

THIS is a very singular family of plants, the flowers differing in colour and form, sometimes delicately perfumed, at others quite scentless. Of late years, however, I have scarcely seen a plant of the genus *Cycnoches*, but a short time since *Cycnoches pentadactylon* was shown before the committee of the Royal Horticultural Society.

Cycnoches resemble another singular family, the *Catasetums*, having thick and fleshy stem-like pseudo-bulbs, bearing strongly ribbed leaves, which, however, all fall away during the resting season, and racemes of peculiarly shaped flowers, sometimes pendulous, at others erect, the column being long and slender, bent round like a bow, and hence the name of the Swan-necked Orchids. During the resting season the plants should be kept quite dry, but when growing the plants enjoy an abundance of heat and moisture at the roots as well as in the atmosphere. I have grown them at the warmest end of the *Cattleya* house and also equally well in the East Indian house. When at rest they should be kept in a cool, dry house, and moved back into heat when they are potted and prepared for growing. Drain the pots well, and elevate the plants above the pot's rim on a little mound of good peat fibre and chopped Sphagnum Moss in about equal proportions. When the growths are young, water must be given carefully, and they must not be sprinkled overhead, because from the leaves sheathing at the base they hold the water so long that it ultimately rots the bulbs. The following are a few of the kinds that I have grown:—

C. AUREUM (the Golden Swan Orchis).—This bears a pendulous raceme of closely-set flowers; the sepals and petals are nearly equal, rich golden yellow, with a few carmine dots; the lip small, of the same colour, and ornamented on the edge with numerous short horny points. It comes from Central America.

C. EGERTONIANUM.—This kind is very variable, but in its usual state the flowers are small, pale green, suffused with purple. I have also had this plant produce large blooms in which the sepals and petals were yellowish green and the lip white. Guatemala.

C. LODDIGESII.—This kind is more constant than the last, but I have seen it bear scented and unscented flowers. In its usual form the flowers are large, of a purplish green in the sepals and petals and deliciously fragrant; lip white, spotted with red.

I have also seen it have at the same time smaller blooms quite destitute of perfume. Surinam.

C. PENTADACTYLON produces an erect spike of flowers, which are of a yellowish green, marked with numerous blotches of a dark rich brown. This plant I have seen produce small green flowers. Brazil.

C. VENTRICOSUM.—This kind I have not seen sport, but I have been told that it sometimes does. In its usual form the flowers are very sweetly scented, but I have had two plants in bloom at the same time which differed only in one being delightfully perfumed, while the other was quite devoid of any scent. The raceme is pendulous, the



Cycnoches Warscewiczii.

flowers large, pale greenish yellow in the sepals and petals, the lip white, stained at the base with brownish black. Guatemala.

C. WARSCEWICZII.—This (here figured) was exhibited by Mr. Wm. Bull, of Chelsea, before the Royal Horticultural Society some few years ago bearing two kinds of flowers—a pendulous spike of small green flowers, having a lip beset with short yellow filaments and a long curved column, and a short spike of three large flowers which were inverted, the sepals and petals rich green, the lip bluish green. It is from Central America.

There are many other kinds which have been accorded specific rank, but it is difficult to say which are species and which variations, but I think all these should be figured and recorded.

W. HUGH GOWER.

Lycaste Skinneri.—From Mr. Carr, gardener to Mrs. Stephenson Clarke, of Croydon Lodge, come five very nice forms of this species. First, the pure white one known as *alba*; it is not the largest, but one of the prettiest forms I have seen. Next, a handsome flower, the sepals broad and full, white, beautifully flushed with flesh colour; the petals white, with a faint tinge of blush colour; the lip creamy white, faintly spotted with rose, tinged with lemon colour at its base. This form accords with that figured in "Select Orchidaceous Plants," vi., t. 10, as *delicatissima*. The next one, a superb flower called *rubella*, has broad sepals, white, flushed with carmine; the petals rich crimson-magenta, with a narrow white marginal border; lip rich cream colour. This is a remarkable variety and very showy. Another flower resembling the form figured in THE GARDEN in May, 1884, is a very

handsome flower, and may be said to represent the typical plant. This is a very interesting and beautiful collection of *Lycaste Skinneri*, and I hope the species will continue to increase in favour.—W.

Orchid flowers from Arddarroch.—Some very handsome flowers come to me from Mr. White. Amongst them are the pure white *Cœlogyne holo-leuca* and the albino form of *Lycaste Skinneri* named *alba*. Both are excellent varieties, the latter not so large as I have seen it, but a fine full round flower. A spike of *Lælia harpophylla* bearing six flowers, which are large and very bright in colour, was also included. The most remarkable flower amongst the whole consignment is a *Cattleya Trianae* named *Geraldiana*. The sepals and petals are rosy lilac, not much out of the usual run, but the lip is magnificent, being beautifully frilled quite round the edge, the colour, very deep crimson-magenta, extending quite round the throat, which is enlivened by a rich deep yellow stain, the base being streaked with crimson.—W. H. G.

Satyrion aureum (*G. B. Winchester*).—Since receiving the letter from this correspondent I have visited a friend whom I knew grew a lot of kinds of *Satyrions*, including the species you ask about, and he says: "It is a foolish fancy for anyone to suppose that a South African plant will withstand 20° of frost in the open ground with impunity," and so say I. Some few years ago I used to grow these plants in a cool frame in the summer season, drying them off and keeping them in a fairly moist condition through the winter, but the temperature in which the tubers were kept never fell lower than about 38°, and seldom so low as that. At this season of the year they require potting and putting into a little warmth to start them, but do not continue to give heat to them. The plants will grow more sturdy and flower more freely in a cool frame. I have always used good light turfy yellow loam and leaf-mould to grow them in, draining the pots well. Treat them as deciduous greenhouse plants, but never again be led away to try them in the open ground.—W. H. G.

Cattleya aurea (*H. W.*).—If your plants have been kept quiet to this date, I should think you are sure to get them to flower if they are strong enough to bloom. This is not a difficult plant to flower, for I see the same plants flowering every season with a friend, who says it is as free blooming as *C. Gaskelliana*. It only requires to be kept from starting into growth until the spring, when it should have good brisk heat and a moist atmosphere, but water should be given at the roots with great care. If you have not repotted this plant or resurfaced it, whichever it may stand in need of, it should be done at once, using good peat fibre and chopped Sphagnum.—W. H. G.

Cymbidium Lowianum.—From Mr. Cragg, gardener to Mr. Walker, of Winchmore Hill, I have received three flowers of this species for an opinion. Two of them are excellent, No. 2 being by far the best. The sepals are soft green, regularly streaked with reddish-brown. The lip has the erect side lobes yellowish-green, the middle lobe white with a broad marginal border all round of deep velvety crimson, which is again marked by a central line of the same colour. No. 1 is also a very good form, having the sepals and petals of a soft apple green, the lip white, with a very broad

belt of bright crimson, but not so deep in colour. These two forms are exceptionally good and worthy of all care; but No. 3, although a nice flower, is decidedly poor in comparison.—W. H. G.

Phaius tuberculosus.—Mr. Kerslake sends me a flower of this beautiful Madagascar plant from the Rev. E. Handley's collection at Bath. This species, introduced by Mr. Sander, of St. Albans, about twelve or thirteen years ago, has been tried by many, but most people have failed in its culture. It is very creditable to Mr. Kerslake to have it flowering, and I should be glad to know how he has treated it. Those I have observed that grow this plant successfully give it plenty of heat and moisture, the pots being well drained, and plant it in a mixture of peat and Sphagnum Moss. The sepals and petals are pure white, the large lip beautifully freckled and spotted with bronzy-purple with a large deep orange-coloured callus on the disc, below which the tip is white, dotted and spotted with bright rose.—W. H. G.

SHORT NOTES.—ORCHIDS.

Dendrobium nobile albescens.—From Mr. H. B. Evans I have a flower of this beautiful variety for a name, which I here give. The flowers are large, of the purest white, saving the blotch at the base of the lip, which is of a soft pale rose colour. It is a delicate and charming variety, one that is worth taking every care of, and which, I think, is still very rare.—W. H. G.

Dendrobium nobile intermedium.—"W. C." sends me a truss of three flowers of this variety for a name, which I here give. The flowers are large, of the purest white, saving the tips of the segments, which have a faint tinge of carmine, the base of the lip being marked with a very dark maroon blotch. This forms a beautiful companion to the other varieties, especially those with deep colours.—G.

Orchid flowers from Weston-super-Mare.—Mr. Appleton sends me a very fine bold, broad-petalled flower of *Dendrobium Wardianum*; also a very richly coloured and large flower of *Phalenopsis Schilleriana* and an exceptionally large and fine bloom of *Brassavola glauca*. The *Cattleya Trianae* blooms are abortions, probably from newly-imported plants, which, when they become stronger, will produce perfect flowers, which I should like to see.—W. H. G.

Cattleya Trianae.—W. Carr sends a very fine variety for a name, but I do not think it should bear any other name than "Clarke's variety." The sepals and petals are soft rosy lilac, lip large, beautifully crisped and undulated round the margin. The whole front lobe to the throat is of a very deep and rich crimson-magenta, which is continued round the borders of the side lobes in a paler form, whilst the throat is rich orange. It is a superb flower, far superior to that of the ordinary typical plant.—G.

FERNS.

FERNS AND FERNERIES.

Now is the time to thoroughly overhaul all Ferns in ferneries, whether planted out or grown in pots and baskets. In most cases there will now be some signs of activity, and unless the necessary attention be given them at once, they will receive a check if disturbed later on. The sun now regains its power, and the plants, if not well rooted, will feel the effects considerably. This is, I think, more the case with Ferns than with most other plants during the spring, and is easily to be accounted for from the smallness of the roots as compared with those of many subjects of proportionate size. When dealing with plants growing in the open soil it is not often desirable to entirely lift them, but a deal may be done with patience and care towards keeping them in a healthy state. For this purpose rough material is a great assistance; by this I mean fibrous loam

and peat in good-sized pieces. Some charcoal will be found useful; so also will clinkers from the stoveholes. Into these latter the Fern roots will find their way, particularly when some of the finer soil gets washed into the openings therein. These clinkers are extremely useful when one has not got good turfy loam and peat at hand for the purpose. They serve a good purpose, inasmuch as they prevent the finer soil being washed away before the roots have time to lay hold of it. At the same time they retain moisture, and thus help to sustain the plants. In thus advising the use of clinkers I wish it to be understood that I am not advocating their adoption to any extent in a fixed manner, more especially if cement be used instead of lime and sand in the form of mortar. I have a strong objection to the free use of cement, as it takes so long to exhaust the poisonous properties contained therein. Of course, sandstone rubble would be much the best, but, unfortunately, many of us are not able to obtain it unless at considerable expense.

To turn, however, to the Ferns, it is necessary to say that all sour and inert soil should be carefully removed before any fresh is added. A good amount can be got away in many cases without harming the plants to any extent. The fresh soil should then be filled in and made fairly firm, adding sand as the work goes on rather than mixing so much with the soil in the first place. In doing this work, any protection that can be given to the roots in the form of surface-dressing should be attended to where it is not possible even to remove any of the old soil in the first place. Again, some plants, perhaps, are so placed as not to receive that amount of water they actually need—most probably in a sloping position. These it would be possible to surround in a measure, or at least build up to on the lower side, so that small receptacles for water were made whereby the plants would profit in some measure. In cases where some Ferns may have outgrown their position, it is better to remove them than to allow them to remain so as to injure others. There is a disposition in some kinds to make very free growth, which if not checked must act detrimentally to those which do not increase in size so rapidly. The various forms of *Nephrolepis*, but particularly *N. exaltata*, will spread rapidly if they find congenial quarters; so also will *Nephrodium molle*. These kinds are both useful and ornamental, but should be limited all the same for the sake of others. I have made it a practice when having to do with these and other quick-growing Ferns to cut their fronds on every available occasion to arrange with flowers, affording a variety and saving other material. In moving plants that have been growing in open borders, a good amount of root should be secured if they are to be replanted. This can usually be done without much difficulty. I have lifted them particularly well where the soil was shallow, the roots spreading near the surface.

As the work of top-dressing proceeds, note should be made of the state of the soil as to moisture. In some cases it may be a difficult matter to keep it moist or to get it back to that condition after it has become excessively dry. Sphagnum Moss will assist greatly towards the former end, as indeed it will in the latter, but some holes should in that case be made as well. Repeated dampings will then be better than heavier waterings. If fresh plants are needed to fill up any vacancies, endeavour as far as possible to add to the variety. As to the size of the plants to be turned out, it is better to depend upon a young and healthy example than to plant out one that is decrepit

and pot-bound. The roots should be spread abroad as well as it can be done, for it may be the depth of soil will not allow room for the depth of the ball. Seedling Ferns make very useful material for planting out whilst they are still quite small, *i.e.*, when about fit for 3-inch pots. All shabby fronds should be cut away and a close watch kept for scale and thrips. For the former the best way to get rid of it is to cut off the fronds affected as far as can be done; then to fumigate, which will kill young scale and the thrips also. All bare places, where it is possible to cover the surface with greenery, should have some *Selaginella denticulata* pricked in, using short pieces in preference to longer ones. *S. Martensi* will also be a useful kind; so also is *S. repens*, which in damp places will cling to and be quite at home on rockwork with hardly any soil at all to support it. DOODIA.

Gold and Silver Ferns in winter.—The *Gymnogrammas* require some care to keep them in good condition during the winter. Plants which have attained to a fair size and are in a healthy condition in the autumn will not give so much trouble, but young plants are difficult to manage, unless under very favourable conditions. Although the *Gymnogrammas* do not appear to suffer from the effects of London fog so much as many Ferns, a damp atmosphere, too much moisture at the root, and a low temperature are very injurious. The temperature should not fall below 50°, and it will be all the better if kept above 55°. In watering, cold water should be avoided. Although excess of moisture is very damaging the other extreme must be avoided, and during the winter when the temperature has to be maintained by fire heat, the plants are apt to dry up more quickly than in the summer-time, and should be carefully examined, for though the surface may appear moist, the soil may be dry beneath, and when this happens the pots should be dipped. It is chiefly such as have large pots in proportion to the foliage that suffer from excess of water. Plants with plenty of fronds take up a good deal of moisture, and if confined to moderate-sized pots they are not likely to get over-watered—that is, provided they receive ordinary attention. I find that all Ferns having a woolly covering or the powder, as in *Gymnogrammas*, suffer less from fog than such as have a smooth bright surface. Take, for instance, *Polystichum coriaceum*, *Cyrtomium falcatum*, or others of a similar texture, and it will be found that the injurious effects of fog are distinctly seen, the fronds appearing as if they had been exposed to the fumes of sulphur. It is undoubtedly the sulphurous gases which do more mischief to plant life than the black, smoky element.—F. H.

Phlebodium sporodocarpum.—This is a slender form of *P. aureum*. Though not so useful as a pot plant, it is a most desirable Fern. The fronds have a more distinct bluish tint and are of a drooping habit. For an elevated position in the rock fernery it is very effective, and it may also be recommended as a basket Fern, especially for growing in combination with others with deep green fronds. When grown in pots, two or three plants should be grown together. There is another variety with which the above is sometimes confused, *viz.*, *P. glaucum*. This has erect fronds, and the rhizomes are not so thickly covered with scales. The bluish tint is very decided. *P. sporodocarpum* and *P. glaucum* are by some botanists considered as synonymous, but they are sufficiently distinct for garden purposes.—F. H.

Phlebodium aureum.—Although generally considered a cool-house Fern, this succeeds best when grown in heat. It is one of the most popular Ferns for market, but should not be taken out in very cold weather. It also requires careful handling, or the fronds, especially the young ones, are sure to suffer. In some of the market nurseries this Fern may be seen in fine condition. The plants are grown in a rather high temperature, and from

the time they are first potted off as seedlings, they are kept in active growth until large enough for sale. It is, perhaps, seen to greater advantage when grown on to a larger size than the ordinary market size in $\frac{1}{2}$ -inch pots. It makes a splendid plant in a 6-inch pot, and when freely grown the fronds retain that beautiful glaucous hue which is one of its most attractive features.—F. H.

STOVE AND GREENHOUSE.

CHINESE PRIMULAS.

THE time is at hand to make a start for another year with this invaluable winter-flowering plant, and successional sowings may be made up to the end of May to prolong the season. I have invariably had the best success with the seeds when sown in 6-inch pots. In these there is very little soil, and it is not so easy to sour the same with repeated watering as it is the greater bulk contained in a large seed-pan. Fill the pots half full of drainage, a little Moss over this, and then almost to the rim with a light sandy compost. Water well before scattering the seeds, and afterwards just cover with some finely sifted soil. Cover each pot with a piece of glass and shade from the sun. The seeds germinate readily in a temperature of about 70°. Examine the pots occasionally, and on no account allow the surface to become dry. This is a frequent cause of failure. The forwardest of the young seedlings may be taken away from the rest as soon as they can be handled, and it is well to leave the seed-pots a considerable time, as *Primula* seeds germinate rather irregularly. Dibble the young plants around the sides of 5-inch pots, about a dozen in each. A compost suitable for the growth of these plants is a mixture of loam, leaf-mould, equal in proportion, and a good supply of sand. If the loam be deficient in fibre, I generally add a little peat. Wood ashes also appear to be beneficial, as well as a little powdered charcoal, when the plants are placed in their larger pots. Lose no time in potting the seedlings singly when the leaves touch each other in the pots into which they have been pricked off. Use 3-inch size, and from these they may go into 5-inch—the flowering size. Still keep the plants in a warm temperature till they are well established in their single pots, but place them on a shelf shaded from the sun near the glass to prevent a weakly growth. When potting press the collar of the plants well down into the soil to keep them from swaying to and fro. I have known cultivators afraid to do this because of the fear of rotting the stems, but I have never been troubled in that way. Careful watering will be needed in the young stages, and constant sprinkling over the leaves of great assistance in producing a free, healthy leafage. For the summer quarters stand the plants near the glass in cool frames facing north. Keep the glass over them only to shade from strong sun-light and to guard them from drenching rain. There is nothing so beneficial to the growth of *Primulas* as night dews; therefore leave the frames entirely open on every favourable occasion. The use of small pots is an important item, and it is wonderful what a large specimen may be grown in a $\frac{1}{2}$ -inch pot if the plant be carefully fed with stimulating fertilisers. A well-grown *Primula* should have one huge central truss surrounded by others, and set in a mass of deep green foliage. It is well to pinch away flower-trusses that show before August, and not to employ liquid or any manures till the trusses of bloom appear. *Primulas* re-

quire a warmer temperature than the cold frame affords after September, and they may be placed in a greenhouse near the glass where from 50° to 60° can be maintained. In this position the flowers are brought out to perfection as regards their size and colours. It is particularly advisable to cultivate good varieties or strains, which may be purchased for the same sum as inferior stocks. I have observed in country gardens sometimes energy wasted on *Primulas* very far indeed behind what one may see exhibited in London during their season, and in a south of England nursery the other week I saw hundreds of well-cultivated plants, but a long way inferior in the flowers to the market stuff to be had any day about this time in Covent Garden. White Perfection is a first-rate free-flowering Fern-leaved kind. Cannell's Pink is as near perfection as one could desire. Giant white and red are good strains, alba magnifica and Snowflake pretty as fringed flowers. Good strains of Chiswick Red are very bright. I have not yet taken to the blue *Primulas*. The best have a washy grey appearance. Very nice doubles may be had from seed and are useful for cutting, in this respect being of more value than the single kinds. I prefer, however, when good double varieties are once obtained, to propagate them by cuttings or rather layers. After having flowered, the lower leaves of the stems may be taken away and a mound of potting soil put on the pot's surface. The *Primula* stems will root freely into this, and each may be cut away from the old plant, separately placed into small pots, and treated as advised. H. S.

Nidularium striatum.—Bromeliaceous plants have never become popular in this country, yet some of them produce very uncommon and beautiful blossoms, while in others the foliage is highly ornamental. Under the last heading must be included this *Nidularium*, which forms a sturdy growing plant, whose prettily recurved leaves are arranged in a regular vasiform manner. The longest are about 1 foot in length, of a clear bright green, freely striated with creamy white. The margins of the leaves are plentifully furnished with small spinose teeth. It is of good free growth, and if in well-drained pots in light peaty soil and watered freely during the summer, it will be just at home with the general run of stove or intermediate house plants. It is readily increased by offsets.—H. P.

Cineraria lanata, which is the same as a plant labelled in gardens *C. aurita*, is a delightful flower, but it is seldom grown, although possessing great beauty. There is a charm and freedom about it quite unlike anything else, and it is showier than *C. cruenta*, the flowers individually being larger and more boldly coloured. In this respect it quite rivals some of the fine florists' varieties, which seem to quite overshadow the species. *C. lanata* is also synonymous with *Senecio Heritieri*, and was figured in the *Botanical Magazine* in 1787 (t. 53), so that it has been long in cultivation. Masson, one of the many collectors sent out at various periods from Kew, found it in Teneriffe, to which it is confined, and Dr. Christ, of Bale, in the *Garden and Forest* January, 27, 1892, alludes to its beauty in its native home, where it grows at an elevation of about 6000 feet. He first saw the plant at the foot of Old Perseas, above La Florida, and describes it as quite slender, 15 inches to 18 inches high, with large, radical, reniform leaves of a clear purple tint. Branches, leaves and all, even the hairy down of the leaves, were of this colour. Dr. Christ describes it as glittering like a flame and visible at a considerable distance, but mentions that seeds sown of it at Bale produced green and red plants, different to the parents. Although perhaps the cultivated plants are not equal in colour to those found wild, *C. lanata* is a bright and handsome *Cineraria*, attaining a height of

about 3 feet, the slender branches spreading out freely, the leaves not unlike those of a Poplar, the under surface as well as the stems covered with a white tomentum. The flowers are quite as circular in form as those of the florists' varieties and like magnified Daisies, the ray florets white, tipped with bright rose, and the disc purple, whilst one can detect a violet fragrance. It is really difficult to understand why such plants remain scarce, although in the spring months, as at Kew, the greenhouse is made gay with large groups of it. The plant may be propagated by cuttings taken in the summer months and put in a cold frame, whilst in the case of old specimens, if cut back after flowering, a second display may be looked for in the autumn.—B

Burchellia capensis.—This is usually regarded as a late spring and summer-blooming subject, but it has been flowering with us for the last month, and that, too, in the shape of small plants. It forms an evergreen shrub clothed with ovate leaves of a deep green tint, while the flowers are borne in clusters on the points of the shoots. The blooms are each a little more than an inch in length, tubular (very much in shape and substance like those of some of the *Vacciniums*), and orange-red. It is an old plant in gardens, having been introduced from the Cape during the early years of the century, and though some of its allies, such as *Bouvardias*, *Gardenias*, and *Rondeletias*, are now popular, this has never made much headway in public favour. The *Burchellia* will grow in an ordinary greenhouse, but it flowers more freely in a somewhat warmer structure. It strikes fairly well from cuttings of the half-ripened shoots taken during the spring or summer months.—H. P.

CLAVIJAS.

It has been too generally said that fine ornamental-leaved plants do not have any corresponding beauty in their blooms, but here we have a class of plants with noble heads of leaves, which likewise do produce rich and varied flowers, and for this reason they deserve more attention. It is some years now since I had these plants under my charge, but their handsome and stately growth and noble heads of leaves have always been firmly impressed on my mind. I do not know whom we have to thank for our knowledge of these plants in a cultivated state, but I think to M. Linden's firm, of Brussels, must be accredited the leading honours. These plants have a wide distribution in Tropical America, being found in the neighbourhood of Rio Janeiro, on the rivers Amazon and the Rio Negro, and on the Andes of Peru and New Grenada, forming handsome plants which grow some 10 feet or 12 feet high with a crown of large leaves each some 2 feet and 3 feet long. The leaves are lanceolate in shape, tapering gradually to the base, coriaceous in texture, strongly nerved, and more or less serrated at the edges; the flowers, produced from the old wood, are borne in very numerous racemes about 6 inches to 8 inches or 9 inches long. As these plants frequently flower through the winter months they are doubly valuable. They are nearly allied to the *Theophrastas*, and like them succeed well in well-drained pots and a soil composed of turfy loam and peat made sandy, and kept in the heat of an ordinary stove. The following are a few of the species which I have had and proved to be well worth growing:—

C. ORNATA is a very handsome plant, a native of New Grenada. It grows on a single stem to about 12 feet in height, bearing a head some 5 feet across of its fine leaves. The plant does not require to attain these dimensions before it produces its showy flowers, which are rich orange in colour, and spring from the stem both below and amongst the leaves, and are borne upon racemes about 6 inches long.

C. RODEKIANA is another fine variety with very deep green leaves, which have almost or quite unarmed margins. The racemes are some 5 inches or 6 inches long, and the flowers reddish pink.

C. FULGENS.—This plant is credited with being a native of Peru. It has a very stout stem and leaves each a foot or more in length. These are smooth on the edges and deep green above, paler beneath, where the midrib is very stout; the racemes are slightly shorter than in the case of those varieties already mentioned, and the flowers are larger, being of a rich and glowing orange-red, deep yellow at the base, which renders them very showy and attractive.

C. MACROPHYLLA.—In general appearance this is a noble plant, and one that many would not imagine would be gay with flowers in the duldest month of the year. The leaves, each from 1 foot to 2 feet in length, are strongly nerved, and have spines at the edges. They are rich green on the upper side, light green below, where there is a very prominent midrib; racemes about 8 inches long, abundantly produced, bearing flowers of a tawny yellow. This plant is a native of Brazil.

WM. HUGH GOWER.

Grasses.—Under the comprehensive term of Grasses a great number of narrow-leaved subjects are brought into Covent Garden Market, and they seem to meet with a ready sale, especially when in small pots, for plants of this character are very popular at the present day. There are some species of *Carex* that form pretty little tufts, especially a couple with variegated leaves. One of these, for which the Messrs. Veitch were awarded a certificate by the Royal Horticultural Society in the autumn of 1889, is a pretty little plant, not more than a few inches high, but whose narrow-striped leaves arch over in a pleasing manner. A second variegated form, which I have seen under the specific name of *japonica*, is somewhat stronger and bolder growing than this last, and is a very useful decorative subject. A small-growing form of the Sweet Flag (*Acorus gramineus variegatus*) also forms effective little plants in small pots. There are several different kinds of *Ophiopogon*, some of which have their Grass-like leaves variegated in a pleasing manner. The ordinary green-leaved form of *O. spicatum*, as well as the variegated variety thereof, whose foliage is striped with white, form much closer tufts than the allied *O. Jaburan*, a variety of which has the foliage marked with yellow. *Isolepis gracilis* has long been a popular plant of this class, and very useful for many purposes are *Panicum variegatum*, with its green, white and pink leaves, and *Stenotaphrum glabrum variegatum*, a quick growing running Grass, very valuable for suspended baskets.—T.

Hardy Azaleas forced.—Immense numbers of the Chinese *Azalea mollis* or *sinensis* are employed for forcing in this country, for besides those supplied by our own nurserymen, very large quantities reach here from the Continent during the autumn and early winter months. So generally is this *Azalea* in its different forms used for forcing, that the merits of those varieties to which the collective title of Ghent *Azaleas* is applied are now-a-days generally overlooked, though they are perfectly distinct and supply a much wider range of colour than is to be found in *A. mollis*. As *A. mollis* flowers naturally somewhat earlier than the Ghent *Azaleas*, this same feature is to be observed when they are forced, but the difference between them in this respect is not great. Good-sized bushes of these Ghent *Azaleas* form grand objects in the conservatory during the early spring months before their relatives in the open ground have thrown off their winter garb. In these varieties the colour ranges from white to bright scarlet, through all the intermediate tints of yellow, orange, salmon, and orange-scarlet, as well as various shades of pink. Though the flowers are not so large as those of *A. mollis*, they are not the less pleasing in that respect; indeed, the Honey-suckle-like blossoms of some of them would to many prove more attractive than the larger flowers

of the other. The fragrance of the blossoms, too, when under glass is especially noticeable, and at the same time by no means overpowering. Like most ericaceous plants, the forcing of these *Azaleas* is a very simple matter, as, owing to their dense mass of fine roots, they can be lifted in the autumn with scarcely any check, and if carefully potted, they may be brought on in the forcing house as required.—H. P.

Pelargonium F. P. Raspail.—This double-flowered zonal variety is, for blooming under glass, grown to a greater extent than any other, and is an especial favourite with the growers for Covent Garden Market. It is of good habit and very free-flowering, the blooms, which are of a deep scarlet-crimson tint, being borne in large, bold trusses and on long stout stems. It has been an established favourite now for some years, but like many other popular plants it was in cultivation some time before its merits were recognised. As long ago as the spring of 1878 it was sent out by M. Lemoine, of Nancy, and in the course of three or four years it almost disappeared till taken in hand by some of our large growers, and from that time it bounded into popularity. Like the once universally grown *Vesuvius*, it has proved to be of a somewhat sportive disposition, two distinct varieties having originated in this manner. The first, *Turtle's Surprise*, is of a dwarfer habit than the type, and has clear whitish stems like the now well-known *West Brighton Gem*. The second is known as *F. P. Raspail Improved*, and an award of merit was bestowed upon it last autumn by the Royal Horticultural Society. In this the individual pips and trusses are even larger and bolder than in the ordinary form.—T.

STOVE AND GREENHOUSE PLANTS, ANNUALS, &c.

SEED-SOWING.—The early sowing of seeds in general for future culture in pots is not always desirable. *Gloxinias*, tuberous *Begonias*, &c., have been alluded to some few weeks ago. These are exceptions whereby there is an advantage in sowing early. Where, however, the seeds in question are mainly of such plants as are grown later on in a cooler atmosphere, there is not a corresponding gain in sowing early. Early sowing in the case of most of such things only results in weakly growth made at the expense of the plant later on. There is also the matter of room, an all important factor now-a-days in nearly all establishments. I have more than once noted that when seeds were sown at what I then thought a late date, they have ultimately turned out most satisfactorily. A weedy growth in annuals, whether it be in pots or in the open air, is not desirable. There is in many kinds a tendency in this direction if not guarded against.

FOR PRESENT SOWING.—Of these there are the ornamental-leaved *Coleus*, which if the seed be from a good strain will afford considerable interest with diversity of form and colour. For large greenhouses and conservatories in the summer, these are most desirable plants. Being of easy and rapid growth, they come in very useful during the warmer months. A brisk heat from the seed stage to the time the plants are fit for potting singly is the best for these. *Celosia pyramidalis* (in variety) is not nearly enough grown for the summer and autumn. Sown now and treated the same as the *Coleus*, large-sized plants for the autumn or medium-sized ones for the summer can be had. The *Globe Amaranthus* will associate well with the foregoing when in flower, whilst it will thrive well under the same course of culture. Those who grow *Cockscombs* should also set about sowing the seed to obtain well-developed heads in due season. The *Thunbergias* are another very showy and useful class of annuals for the summer, being deserving of more extended cultivation. The foregoing for a time at least would come under one course of treatment, all being termed tender annuals. Thus if sown all at one time it would be possible in some cases at least to give them better attention collectively. A hotbed for raising the seeds is not necessary. For

my own part I prefer to avoid an excessive heat, but like to keep everything in this way as close to the glass as I can. Do not in any case neglect to prick off the seedlings as soon as they can be safely handled, this being an important step towards getting sturdy plants.

OTHER SEEDS.—Of these note should now be taken of the compact strains of *Petunias* for pot culture; they are exceedingly showy when well grown. *Nicotiana affinis* is very much appreciated by some in pots, making a good display towards the evening combined with its fragrance. *Lobelia gracilis* is another annual worthy of notice. It is of scanty growth, being well suited to use in hanging baskets or around the sides of stages. The spotted forms of *Mimulus* deserve more notice. The *Rhodanthes* are well known, but none too much grown in private gardens. *Torenia Fournieri* is a lovely annual in small pots, standing well in the conservatory in the summer. These are a selection that do not require quite so much warmth to raise the seed, whilst a cooler house will suit them later on, although not absolutely a greenhouse, until of good size. Other things in the way of annuals, but harder still, are the following: *Ten-week Stocks*, which will make a good succession to autumn-sown intermediates; *Nemophila insignis*, very pretty for pot culture, looking well mixed with *Harrison's Musk*. *Phlox Drummondii* can in pots be turned to good account for the summer with one or two pinchings. *Mignonne* should also now be sown to succeed the winter plants, *Machet* being one of the best; *Dwarf Erect* is another good sort; *Garaway's* or *Parson's White* affords a distinct colour, but is not so compact. Balsams are usually sown and grown in too much heat, but if treated to a cool course, they would be much more popular. When this old-fashioned annual is sown in heat, the seedlings are very liable to become drawn.

BIENNIALS AND PERENNIALS.—These too often escape notice until it is so late in the season as not to allow time for a good growth the first season. The following may well be sown as soon as possible, being treated, unless where otherwise specified, to a cool course. *Francoa ramosa* raised now from seed will make fine plants to flower next year from June to August. *Campanula pyramidalis* requires the same course of treatment for the same season of flowering. *Campanula calycanthema* vars. had better be left another month, otherwise they grow too strongly. *Lobelia cardinalis* from seed now will flower well next year, and as pot plants in the summer are distinct and handsome; this germinates best in a little warmth. Of fine-foliaged plants note should be made of *Aralia Sieboldi*, the fresh seed of which is obtainable in April; this should be sown then without delay, being raised under cool treatment. Where there is a great demand for plants of this kind, as in large conservatories, it will pay to grow a good number, for not only is this *Aralia* useful as a small plant, but as it grows in size it is still valuable, lasting so well. By growing a good number of both annuals and biennials (the latter being raised yearly), there will be not only a saving of more permanent plants, but also of room for at least a part of the season. GROWER.

Camoensia maxima.—Has any reader of THE GARDEN flowered the above climber? if so, what treatment does it require and what month does it flower in? I purchased a plant five years ago. The first two years it made very little growth. Since then it has made good growth every year, and is the picture of health, but no appearance of flower. It is growing up a pillar in the stove and trained along the roof.—W. MACKIE.

Begonia glaucophylla.—Some of the *Begonias* are seen to very great advantage when grown in suspended baskets, and this is one of them, for though the blossoms are not nearly so showy as those of many *Begonias*, they are very freely produced nearly throughout the year, and are of a peculiar reddish salmon tint. It is of ample growth, and in the case of a strong plant, the pen-

dulous shoots will hang down for a yard or so, the clusters of blossoms being produced from the axils of the leaves. These last have their edges wavy, and consequently it is often met with in gardens under the name of *B. undulata*, but the plant to which in the "Dictionary of Gardening" this name is applied is described as producing small white blossoms.—H. P.

NOTES OF THE WEEK.

A good market Daffodil is *Narcissus obvallaris*, or the Tenby Daffodil. It is in full bloom now in nurseries and gardens, and large quantities are sold in the markets. The flowers are of remarkably neat and compact form, rich yellow in colour, and well adapted for cutting, whilst they appear before those of other varieties. The bulbs make a strong growth and thrive well under ordinary conditions. The Tenby Daffodil is one of the most popular of bulbous flowers for the market.

Tulipa Kaufmanniana is an interesting species in bloom now. We noticed it the other day in Messrs. Barr and Son's grounds at Long Ditton. The flowers are of a creamy colour, yellow at the base, the segments flushed with carmine on the outside. Tulips are commencing to open freely now, and the species are of much interest. It is interesting to notice how greatly some of them vary in colour, and *T. Kolpakowskyana*, now in bloom, is one of the most noticeable for its sportiveness.

Prunus divaricata.—This early-flowering tree is not much planted in gardens, but it is worth a good place. The growth is spreading, graceful, and almost, if not quite, sweeps the ground, every branch late in March and early April being smothered with small white flowers. One of the finest specimens we know faces the Cape house at Kew, and in mid-March it was commencing to bloom. It is a perfect lawn tree, pleasing to look at the whole year, but especially so when in full flower.

Tillandsia xiphioides, although introduced from Buenos Ayres as far back as 1810, is quite a gem, and a fitting companion to the deep blue *T. microxiphion*. The flowers of *T. xiphioides* are of the purest white, and produced on a stem about 7 inches in height. The segments are broad, serrated at the margin, and curl over gracefully, not unlike the standards of such an Iris as *I. fimbriata*. Quite Iris-like is the expression of the flower, the standards, however, wanting. It is in bloom now at Kew, the plant being grown in a basket in the stove. Those who care for this class of plant should have this species.

Tecophylæa cyanocrocus and its variety *Leichtlini* are in bloom in a frame in Mr. Ware's nursery at Tottenham. They are charming bulbs, but not sufficiently hardy for general cultivation. The type, which has intense blue flowers, is far preferable in our opinion to *Leichtlini*, the flowers being more white than blue. In very mild districts they would succeed well in the open, but the safer way is to grow them in frames. There is no need to keep them coddled up. They should be given as much air as possible, and in the spring the lights need be put on only in the event of severe weather.

Hoop-petticoat Daffodils are flowering freely in the open at Tottenham, the beds receiving the protection of a straw covering in winter. One of the hardiest is *Corbularia citrina*, the flowers large, and very delicate yellow in colour. One wants to get a good clump or mass of it for effect. *C. Clusi* was also in bloom, but this is better in pots. The *Corbularias* are a delightful group, requiring a warm position and light soil. They are not so hardy as the *Narcissi* in general, but may be grown in most gardens, appearing to advantage as edgings and as clumps in the rock garden.

Rhododendrons in the dell at Kew are commencing to bloom, and will well repay a visit. This

walk of *Rhododendrons* at Kew is not much frequented by visitors, as it is out of the way—at the extreme end of the gardens near the river. But those interested in these shrubs will find a choice collection, and they are well sheltered from frosts and keen winds. *R. fulgens* is one of the principal kinds in bloom. It is a Sikkim species, the flowers bright crimson, campanulate, and borne in a dense cluster, very rich against the bold, leathery deep green leaves. The winding walk through the dell is a pleasant spot in late spring, and the shrubs can be planted to advantage for effect.

Irises are a feature with Messrs. E. D. Shuttleworth and Co., Peckham Rye. *I. reticulata* and its variety *purpurea* are in full bloom, also the beautiful *I. persica*, which is very useful too in a pot for the greenhouse. The flowers are attractively coloured, pale blue, the falls enriched with a blotch of deep velvety purple. It is known also as *Xiphion persicum*, and likes a sheltered spot, also a light soil. A very fine feature in a garden in the spring might be formed of the early-flowering Irises alone, a bed of them in a sheltered, warm corner, in light soil, giving much pleasure as the several species and varieties come into bloom.

The Willows at Kew are of especial interest at this season. At Kew there is a large collection by the lake-side in that portion of the grounds known as the "Wilderness," and a few days ago several species and varieties were in their spring dress. One may see here all the finest species and varieties, from the common Sallow (*S. cuprea*) to the rarest types. One of the most conspicuous now is *S. mollissima*. It is a fine tree for the waterside, where it is planted at Kew, the branches bending over the surface, and smothered with large pale yellow, almost primrose-coloured catkins, individually large, and in the mass have a singularly attractive aspect.

Arisæma speciosa, a very beautiful Aroid, is in full beauty in the stove at Kew. The spathe are well shown in a coloured plate given in THE GARDEN of June 21, 1890. This species was introduced from the Himalayan forests in the year 1872, and is remarkably attractive, well worth growing in ordinary gardens. Unfortunately, however, it is only in such a botanic garden as that at Kew that one sees these interesting plants. The spathe is, so to speak, hooded, the point reflexed, and the colouring is rich chocolate-purple, as it seems composed of both tones, very rich and striking, this body colour being set off by lines and streaks of clear silver. The spadix is not too conspicuous and lengthened out into a very long tail about 2 feet in length.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY.

MARCH 14.

THIS meeting was without doubt one of the most interesting that has ever been held in the Drill Hill since the society has been located there. It is doubtful if there has ever been a larger display at any time, and the visitors could not but be gratified with such excellent exhibits as were to be seen. These were also of such diversified character as to embrace almost everything now in season. Orchids were well represented, being met with at all turns and in all parts of the building. Besides the usual exhibitors, some fresh ones also contributed to the display. *Odontoglossums* were finely represented; so also were *Dendrobiums*, *Cælogynes*, *Lycastes*, and *Cypripediums*. *Amaryllis* of hybrid varieties were of splendid quality, so also were the *Clivias*. New Holland plants were shown in considerable quantity and in profuse flower, all the examples of decorative size. *Cyclamens* were sent in first-rate condition, whilst of fine-foliaged plants there were numbers of well-grown small plants. *Primulas* were represented by a good strain, so also were *Cinerarias*, these latter being of remarkable quality and growth. Hardy flowers

and Daffodils (many of which of the latter were, of course, from pot plants or otherwise forced gently into flower) were shown in large quantities, being exceedingly interesting as harbingers of the spring to those who have no glass (or but little) at their disposal. Home-grown fruit was not largely shown. A few good dishes of Apples with Tomatoes and Strawberries were staged. Amongst the fruit, however, the interest centred in the imported fresh fruit from the Cape. These productions embraced Grapes, better certainly than the American produce with more flavour, but having been packed in cork dust the fruit was partially disfigured. With better packing the results should be better. Shallow boxes or baskets would be preferable to deeper ones. The Melons were of very good flavour, of large size, and well netted, being about on a par with average home-grown fruit. Williams' Bon Chrétien Pears possessing their peculiar aroma and flavour were also sent. These had evidently not been gathered quite soon enough or had been too long in transit. This was apparent in the black cores of the fruits, the same as in home grown. The fruit had, however, travelled well and were of good flavour, not equal, however, to English or Channel Island samples. This produce speaks well for the enterprise of the Cape growers. Further experience in packing and facility in despatch will no doubt give better results. A fine lot of very superior Mushrooms was also sent, the samples heavy and fresh.

Orchid Committee.

First-class certificates were awarded to the following:—

LÆLIA VITELLINA (presumably a hybrid, although its parentage was not given, its affinity to either *L. cinnabarina* or *L. harpophylla* being apparent). The plant bore one flower only, but this was much larger than that of either of the foregoing, being quite 4 inches in diameter, self-coloured, a pale orange shade, very pleasing. The lip is small, but the sepals are broad and give size to the flowers. From Baron Schroeder.

DENDROBIUM NOBILE BALLIANUM.—A very distinct pale-coloured form of the species. The flowers are of average size, the sepals and petals pure white and quite transparent; the lip has a pale purplish blotch in the throat edged with creamy white, and a pure white margin; the growth is erect, the bulbs short and stout; an imported plant by the appearance of the bulbs. From Messrs. Sander and Co.

CÆLOGYNE SANDERÆ.—A very distinct and beautiful species of somewhat small growth, with an erect spike bearing charming flowers; the sepals and petals are white with a faint trace of pale lemon; the lip, which is white, is delicately fringed, and forms the most attractive part of the flower with a blotch of deep golden-yellow in the centre, surrounded with brown hair-like filaments. It was shown by Messrs. Sander and Co.

Awards of merit were given to the following:—

ODONTOGLOSSUM RUCKERIANUM SPLENDENS.—A very attractive and superior form, worthy of a better award; the spike, a fine arching one, bore fourteen flowers beautifully spotted with rich brown on a rosy ground suffused with faint purple; the lip white and longer than usual. From Sir Trevor Lawrence.

MAXILLARIA SANGUINEA.—A very dwarf, but graceful-looking plant, the foliage narrow and *Carex*-like. The flowers, quite small and clustered amongst the foliage, but above the bulbs, are each about an inch in diameter, of a dull yellow shade, the lip blotched with reddish purple and margined with white; a very distinct species. From Sir Trevor Lawrence.

LYCASTE SKINNERI VAR. HETTIE.—A very distinct form, the colouring of the back part of the lip running into the petals, the colour of which is a rich rosy purple; the sepals are white, with a flush of the same shade at the base. The lip is tinged with pale yellow, the entire flower of fine proportions. From Mr. F. Horsman, Colchester.

A botanical certificate was awarded to

TRIPHIA ORTHOCERAS, an Orchid that is interesting, if not really beautiful. From Sir Trevor

Lawrence. A cultural commendation was deservedly awarded to a beautiful example of *Lycaste Skinneri* alba, an instance of most superior cultivation, the plant bearing no less than ten flowers, all issuing from one leading bulb, the plant possessing six bulbs altogether. Each bloom was of fine proportions and pure in colour. From Mr. Statter. Mr. W. Furze, Teddington, sent a well-arranged and beautiful group, mainly composed of Orchids, fine-foliaged plants and a few other flowers being interspersed therewith. This group included a grand plant (seldom seen in finer bloom) of *Dendrobium Wardianum*. It was really a specimen of itself, the variety also a brightly coloured one, with bulbs of medium length. Another was also shown, but with longer bulbs. As in *D. nobile*, so in *D. Wardianum*, there appears to be a great diversity in the growth. Other good things in this group comprised *Cypripedium Lathamianum*, with more yellow than usual in the flowers; *Dendrobium heterocarpum philippinense*, a fine variety of deep colour. *D. Lindleyanum* and *D. Ainsworthi* were well represented; so also were *Cattleyas*, *Oncidiums*, and other *Cypripediums* (silver Flora medal).

Messrs. Sander and Co. had a small group of choice varieties in good condition. These embraced *Phalenopsis Stuartiana* (St. Albans var.), which is decidedly superior to the type, with finer flowers and more distinct markings, in size approaching those of *P. amabilis*, with the same purity of colour in the upper part of the flowers. *P. Sanderiana* was also here in fine condition, the colouring of the flowers very soft and pleasing, a rosy pink suffused with purple; this is undoubtedly a superior variety. Of *Dendrobes* there were *D. luteolum*, a very pretty pale yellow species; *D. lituliflorum*, rich in colour, a fine form; *D. nobile* Cooksoni, wherein the colouring of the inner portion of the lip—a deep crimson-purple—is transmitted to the petals; and a good variety of *D. Schroederi*, or *densiflorum album*. *Vanda teres alba* and *Spathoglottis Kimballiana*, a deep yellow form, were also shown. Of *Odontoglossums*, *O. Sanderianum* was one of the best, very light and elegant, pale yellow in colour; *O. hystrix* was bearing a splendid spike of dark-coloured flowers. Others consisted of *Cattleya granulosa*, richer in colour than usual; *Phaius amabilis*, with its darkly-coloured lip; *Cypripedium Wallisi*, with well-developed flowers; *C. Dauthieri*, a pale greenish yellow variety, very pleasing in its peculiar colour; *Lycaste Skinneri* in variety and *Trichopilia suavis* (silver Banksian).

Messrs. B. S. Williams and Son sent a well grown and freely flowered group of really good things; these comprised several plants of *Cœlogyne cristata* alba in profuse flower, very pure in colour, and a large number of *Odontoglossums*, including vigorous examples of *O. Alexandræ roseum*, a choice variety, rich in colour; *O. mulus Holfordianum leriopterum*, with pale golden yellow flowers and brownish blotches, very distinct; *O. Pescatorei* and *O. triumphans*, both in good order; *O. Roezli*, *O. prinopetalum*, with fringed petals. *Cypripediums* comprised *C. Morganæ*, with grand flowers rich in colour; *C. Elliottianum*, also good; *C. Ceres* (Williams' var.), distinct and handsome; *C. Boxalli nigrum*, one of the best forms; *C. Petersianum*, with three flowers on the spike, a distinct variety; and *C. Pitcherianum*, extra fine, with striated flowers, the colouring strangely mixed. Of other good things there were *Cattleya Trianae quadricolor*, a grand form, the lip extra fine and of rich colour; *Lycaste gigantea viridis*, *L. costata*, and *L. Skinneri* in variety. The *Odontoglossums* in this group were the most pleasing feature, the health of these and of the *Cypripediums* clearly testifying that they are well suited to the atmosphere of London (silver Banksian).

Sir Trevor Lawrence sent a small group, but one consisting of very superior varieties. From this source there is always something of rarity or unique character distinct from many exhibits. On this occasion there were two very fine plants, freely flowered, of *Dendrobium Findlayianum*. The well-expanded lip of this species with its large deep golden blotch in the centre and the delicate shades of the flowers in general make it most

attractive. Other *Dendrobes* comprised *D. nobile Tautzianum*, a tall-growing variety approaching *D. nobile nobilium* in the colouring, with *D. signatum*, with pale yellow flowers, having a dark spot on lip and of tall growth; *D. cheltenhamense*, not particularly interesting; and *D. nobile Murrhinianum*, a quite distinct variety, with very chaste colouring in its flowers. Of *Cypripediums* there were grandly-grown plants of *C. Rothschildianum* and *C. Elliottianum*, two kinds which can hardly be considered distinct species, being rather distinct forms one of the other; which name has, however, the prior claim we do not attempt to decide. The former had six fine flowers on two spikes; the latter is a lighter form, but in both cases the growth and formation of the flowers are the same. *Phaius tuberculosus* was included here, and shown in fine condition, one spike having eight flowers and the other five, the lip being as usual strikingly handsome. This plant, of which the culture has lately been discussed in the horticultural papers, was grown in a long narrow teak basket, and showed no indications whatever of shyness of growth (silver Banksian).

Mr. N. C. Cookson showed again his hybrid *Cypripedium Bryan* (philippinense \times Argus), a very distinct variety, the somewhat long drooping petals being finely marked with dark spots. The plant bore three flowers to the one spike. A cut example, portion of a spike, densely bloomed of *Dendrobium splendissimum grandiflorum*, bearing very fine flowers of rich colour, was sent by Mr. Farnham, Quorndon Lodge, Loughboro'. This is undoubtedly one of the finest of hybrids. Mr. Leach brought from Albury Park some long spikes of a good form of *Cœlogyne cristata* called *magnifica*. A plant of *Cattleya Trianae delicata* (syn., *C. Warocqueana alba* of Linden) was shown by Mr. Ingram, but better forms have been seen than this. From Mr. Vuylsteke came *Odontoglossum albo-cupreum*, a pretty variety. Mr. Statter, in addition to his fine plants of *Lycaste Skinneri* alba, had *Dendrobium nobile nobilium* as usual very rich in colour. From Mons. Linden came his variety of *Phalenopsis amabilis*, which has smaller flowers, but the foliage is of a much deeper green, betokening extra vigour and health. From Messrs. Low and Co. came a small group, consisting of *Cattleya Trianae*, *Cypripedium callosum* (Low's var.), *Angræcum citratum*, always a pleasing Orchid; *Phalenopsis amabilis* and *P. Stuartiana*, *Dendrobium Brymerianum*, always attractive by its rich yellow colour and lace-like lip, and *Bulbophyllum Sillemianum*, a small but very pretty Orchid with yellow flowers.

Messrs. Veitch and Sons again exhibited several of their own good hybrids, amongst which were *Epidendrum Endresio-Wallisi*, shown previously, but never with better coloured flowers; the dark maroon sepals and petals, with more of a lilac lip, are very singular and pleasing, if not showy; *Epiphronitis Veitchi* (*Sophranitis grandiflora* \times *Epidendrum radicans*) is an especially attractive hybrid. It has all the characters of *E. radicans* in growth and flower, but with more of the colour of its other parent; it is most easily described as *E. radicans maximum*. *Dendrobium Euryalus* (*D. nobile* \times *D. Ainsworthi*) is another fine hybrid with the lip finer than in either of its parents, the colour of which is an intensely dark maroon. *Calanthe tricarinata*, a species from Japan of dwarf growth, was shown here; it has pale coloured flowers, and is of dwarf growth. From Mr. W. Thompson, Walton Grange, Stone, Staffs, came several well grown and well flowered examples of *Odontoglossums*, comprising *O. Alexandræ*, *O. Pescatorei*, *O. luteo-purpureum* (very fine), *O. weltoniense*, pale yellow and pale brown in colour, and *O. triumphans*. Mr. Lucas, Warnham Court, showed also several *Odontoglossums*, as *O. Rossi*, *O. luteolum*, *O. Alexandræ*, and *O. Rossi album*, with *O. triumphans*, all in good condition. From Mr. Wigan, East Sheen, came a splendid example of that singular Orchid *Cœlogyne pandurata*, the one spike bearing no less than nine fine flowers; its large greenish yellow sepals and petals and blackish markings on the lip are most peculiar. From Mr. W. Soper, of Clapham Rd., came some long narrow bas-

kets with masses of *Odontoglossum Rossi majus* in a thriving condition, also blooms of the old *Cattleya Loddigesi*. Mr. Le Doux on this occasion sent *Odontoglossum triumphans* (Langton House variety), an extra fine dark form, with large broad-petalled flowers, nine to the spike; also *O. triumphans aureum*, a paler variety. From Mr. Smees' garden at Carshalton came three immense spikes loaded with flowers, rich in colour, of *Cyrtopodium punctatum* St. Legerianum, a variety which Mr. Cummins grows so successfully. Messrs. Pitcher and Manda showed *Cattleya Trianae* Smithæ, a superior variety with large lip. From Mr. Alcock, of Berkhamsted, came a very fine spike of *Lælia anceps Stella*, a pure white form, also a grandly grown plant of *Cypripedium Schröderæ*, with very richly-coloured flowers, and another of *C. Elliottianum*, also in good condition, with *C. vernixium*, another good hybrid. Several other small exhibits of cut flowers were sent by various growers.

Floral Committee.

First-class certificates were awarded to the following new plants:—

CARAGUATA CARDINALIS, a South American bromeliaceous plant of remarkably showy character, bearing dense bracts of a brilliant scarlet or cardinal colour, and which last long in perfection. The plant shown was of dwarf growth, and when plentiful should prove a fine addition to these ornamental stove plants. From Messrs. B. S. Williams and Son.

CORYLOPSIS PAUCIFLORA.—A nut-like plant in habit of growth, being apparently dwarf and compact; the flowers are pale yellow, with the perfume of Cowslips. It is a Japanese introduction and quite hardy, being an acquisition to our early-flowering shrubs. From Messrs. Veitch and Sons.

Awards of merit were made to the following grand seedling *Amaryllises* from the Royal Exotic Nursery, Chelsea, all being decided advances in their colours, the flower-spikes short and stout, viz.:—

AMARYLLIS NIMROD, extra fine; the largest-flowered variety yet obtained, possessing also remarkable substance and fine form, the colour a rich orange-scarlet with small green eye.

AMARYLLIS EXCELLENT, which has flowers of superb form, of a rosy orange colour, with a pure white starry centre.

AMARYLLIS CORINNA.—A deep crimson-scarlet shade in its colouring, deeper towards the base, but with no eye.

AMARYLLIS ELDORADO.—A flower of perfect form and of good substance, the colour crimson, shaded with orange, with a very small eye.

AMARYLLIS SOCRATES.—A pure scarlet flower, shaded with orange, no distinct eye. A very free-flowering variety, with eight flowers open upon the plant.

These were all shown from Messrs. Veitch and Sons' collection.

AMARYLLIS SALVATOR ROSA.—Flowers rich red with a faint tinge of purple, and streaked with white. Shown by Messrs. Paul and Son.

FRITILLARIA AUREA.—In colour a rich golden-yellow inside and out, with minute blackish spots; a beautiful hardy species. From Mr. Thos. Ware, Tottenham.

SCOPALINA HLADNICKIANA.—A seemingly robust growing plant with greenish-yellow, bell-shaped flowers. From Messrs. Paul and Son, Cheshunt.

BEGONIA TRIOMPHE DE LEMOINE.—A very profuse flowering winter shrubby variety, coming nearest to *Triomphe de Nancy*, but possessing larger flowers which are not quite so deep a shade of colour, a bright rosy pink, the habit dwarf and compact. From Sir Trevor Lawrence.

CHRYNANTHEMUM FRUTESCENS ALMA BRUGGEMANN.—Intermediate in its colour between the white and yellow forms, being nearly a pure white towards the outer edge of the flower, but pale yellow towards the base of the petals, a very distinct and useful decorative variety, as shown in a cut state. From Mr. Ch. Brüggemann, Villefranche-sur-Mer, France.

CLIVIA SCARLET GEM.—The flowers of this are the nearest approach in colour to those of *Vallota purpurea* which we have yet seen; the plant was very robust, bearing a large spike of no less than thirty-six flowers. From Messrs. B. S. Williams and Son.

Mr. T. S. Ware had a collection of hardy flowers which was of an extensive character. Daffodils were shown in remarkably good condition, both in a cut state in bunches and in pots also; these comprise 'Sir Watkin, Emperor, princeps (extra fine), maximus (large and very handsome), Horsfieldi (fine flowers), incomparabilis sulphureus (one of the best of the type), albicans, aurantius, odoratus, Leedsii Circe (white and pale yellow trumpet), poeticus ornatus, Regina marginata (light, drooping), Barri conspicuus, Telamonius and Figaro. Of other species there were Jonquilla, cyclamineus, Johnstoni, odoratus minor (double), and nanus. Scillas were represented by *S. bifolia alba* and *S. b. rosea* with purplish flowers. *Chionochoxa Lucillae* and *Iris reticulata*, with *I. persica purpurea* represented early hardy bulbs. *Tecophylaea cyanocrocus* with its azure blue flowers, *T. c. Leichtlini*, and *Sisyrinchium grandiflorum* were also shown, making altogether a beautiful exhibit (silver Flora medal).

Messrs. H. Low and Co. made a brilliant display of early flowering Cape and New Holland plants. The examples shown were all of medium decorative size and in profuse bloom, proving indisputably the value of such plants for the greenhouse in the spring season; the most noteworthy of these were *Chorozema Lowi*, one of the best kinds grown, flowering freely in small pots, and very bright in colour; *Eriostemon scaber* and *E. linearifolius*, both freely flowered; *Acacia Drummondii*, *A. cordata*, and *A. rotundifolia* were the best of their genus. *Pimeleas*, *Genistas*, and *Correas* were also shown well, so were *Tremandra ericæfolia*, *Boronia heterophylla*, *B. megastigma*, *Ericas*, and *Epacrids* (silver Flora medal). Messrs. J. Laing and Son had a bright and pleasing group of fine-foliaged plants, comprising of *Orchids*, *Cattleyas* and *Dendrobiums* (including *D. crassinode giganteum*). *Clivias* were also shown here in quantity, the best kinds in flower being staged, one called *Purity* being particularly noteworthy. *Acacia Drummondii* was here in profuse flower. These with fine-foliaged plants and Ferns made a pretty group (silver Flora medal). Mr. John Odell, Hillingdon, arranged a beautiful bank of his strain of the Persian Cyclamen, the plants of dwarf habit, the colours rich and good with a profusion of flower (silver Flora medal). Messrs. Outbush and Son had a miscellaneous group of flowering and fine-foliaged plants, amongst which were finely grown *Erica Wilmoreana*, *E. Cavendishiana*, *E. ventricosa minor*, and *E. perspicua nana*. *Begonia Gloire de Sceaux* was staged here in good form with plenty of flower and healthy foliage; small, fine-foliaged plants also added to the effect (silver Flora medal). Mr. J. C. Tasker, Middleton Hall, Brentwood, showed a well-grown lot of dwarf pot Roses of medium but useful size with plenty of flower; the kinds shown were *Innocente Pirola*, *Francaisca Kruger*, *Mme. V. Verdier*, *Princess of Wales*, *Magna Charta*, *Jean Ducher*, *Celine Forestier*, *Beauty of Waltham*, *Ernest Metz*, *White Perle*, *Catherine Mermet*, *Souvenir de S. A. Prince*, *Alba rosea*, *Princess Beatrice*, and *Marshall P. Wilder*, all proving to be good pot kinds (silver Banksian medal). Messrs. James and Son, Farnham Royal, Slough, had a splendid lot of dwarf sturdy plants of their well-known strain of *Cinerarias*; the variety of colour was good, the selfs being strongly represented, the individual flowers of large size, and each plant in profuse bloom. A silver Banksian medal was deservedly awarded to this group. Mr. W. R. Newport, nurseryman, Hillingdon Heath, Uxbridge, sent a group of a very superior strain of white Chinese Primulas, the plants being dwarf, with foliage of medium size, and a profusion of large flowers pure in colour, borne upon large spikes (silver Banksian medal). Mr. Holden, florist, Warwick Road, Ealing, showed a group of dwarf Azaleas very well flowered and in good variety, *Ceres*, *Der Weisse*, and the old *punctata*

being some of the best (silver Banksian medal). Messrs. E. D. Shuttleworth and Co., Peckham Rye, staged a group of *Dracenas*, consisting chiefly of *D. Lindenii*, finely coloured, with Palms and other fine-foliaged plants, and a quantity of *Lilies* of the Valley in profuse flower, with the bells of large size (silver Banksian medal). Mr. S. G. Lutwyche, South Eden Park, Beckenham, sent three very finely flowered plants of *Clivias*, bearing large trusses of bloom of rich colour, with about twenty-five spikes to the three specimens; with these were four remarkably healthy examples of *Amaryllis aulica*, each one bearing a well-developed spike; the individual bulbs were of large proportions, the foliage also very healthy with the sturdy stout and arching character peculiar to this species. To these well-grown plants a silver Banksian medal was awarded. Messrs. Paul and Son staged a very beautiful basketful of early spring flowers and others in pots and pans. These embraced *Hepatica triloba*, *H. triloba alba*, and *H. triloba rubra*, all very fresh and good; *Adonis vernalis*, *Megasea Stracheyi*, *Primula denticulata*, *Scilla bifolia*, *Iris reticulata*, *Anemone Pulsatilla*, *Draba Haynaldi*, and *Saxifraga Boydi*, with other species, making in all a very pleasing exhibit. With these were staged several plants of their excellent strain of *Amaryllis*, which are grown in large numbers at Cheshunt, and in fine condition. A silver Banksian medal was awarded to this exhibit.

A grand display of cut Camellias was made by Messrs. Wm. Paul and Son, who exhibited no less than twelve large boxes full of fine flowers, comprising the best varieties in cultivation. A few of the best of these were *Mathotiana*, very fine; *Lavinia Maggi*, fimbriata, *Reine des Fleurs*, conspicuous, and *Comtesse d'Hainault*. These blooms, if we are not mistaken, were all taken from plants growing in pure loam. Their condition speaks well for the soil wherein they are planted. A finer lot could hardly be staged (silver Flora medal).

Sir Trevor Lawrence showed *Begonia Triomphe de Nancy*, a small-flowered kind bearing a profusion of its rosy pink blossoms upon very dwarf compact plants. With these were cut examples of *B. odorata*, a species well worthy of extended culture; its pure white blossoms, borne upon large spikes with reddish footstalks, being very attractive at this season of the year (bronze Banksian medal). Messrs. Barr and Son had a group of early-flowering bulbous and other plants comprising of Daffodils, *Ard-Righ* and those interesting species of *Narcissi* that are so well suited to rockwork, &c., *N. minor* and *N. minimus* (bronze Banksian medal). Messrs. E. D. Shuttleworth and Co. had also a collection of Daffodils, such as *N. Nelsoni major*, *Emperor*, *rugilobus*, *poeticus ornatus*, *pallidus præcox*, *Barri conspicuus*, and the beautiful *N. Bulbocodium citrinus*, with a very charming pan of *Iris reticulata* and other choice species (bronze Banksian medal).

From the Royal Botanic Gardens, Kew, came a large variety of hardy early flowering shrubs, comprising two forms of *Forsythia suspensa*, both loaded with flowers, *Acer neapolitanum*, with feathery greenish yellow flowers; *Prunus cerasiformis* var. *Pissardi*, *Amygdalus communis*, *Daphne Mezereum*, *Andromeda floribunda*, with the earliest of *Rhododendrons* as *Nobleanum*, *fulgens*, and *ataclarense*, making in all a most attractive and instructive exhibit which should create a greater interest in these valuable shrubs. Near these Messrs. Veitch and Sons staged their valuable *Rhododendron Early Gem*, one of the best kinds for pot culture, the examples shown being loaded with flowers of a pale lilac colour.

Fruit Committee.

The exhibits before this committee were numerous, seedling Apples, early and late Grapes, fruit from the Cape, and a quantity of Mushrooms being the most important. Mr. C. Ross, Welford Park, Newbury, sent a new seedling Apple named *Mottled Russet*. It was a very firm fruit and of good flavour. This the committee wished to see again with more particulars as to its cropping qualities. Messrs. Rivers, of Sawbridge-

worth, also sent a new Apple named *Jacquin*, but a little past its best. Seedling Apples were also staged by Mr. Young, Barton Court, Kingsbury. A dish of new Black Hamburg Grapes was sent from the Royal Gardens, Frogmore, by Mr. Thomas, but not sufficiently ripe. The berries and bunches were of good size for so very early in the year. Late Grapes in three varieties were sent by Mr. W. Smythe, Basing Park, Hants, the kinds staged being *Alicante*, *Lady Downe's*, and *Mrs. Pince*. The last-named, though of poor colour, was of good flavour; the two former were not in the least shrivelled, and the flavour all that could be desired. Mr. Miller, Ruxley Lodge Gardens, contributed a dish of forced Strawberries, the variety being *Vicomtesse H. de Thury*. A most interesting exhibit was staged by the Cape Syndicate Fruit Co., Mr. P. A. Molteno, Sec., consisting of Grapes, Melons, and Pears, referred to in a separate note, p. 204. Mr. Leach, Albury Park Gardens, Guildford, staged his new winter Tomato *Ladybird*, certificated last year. Mr. Beckett, Aldenham House Gardens, Elstree, sent Carter's new *Harbinger Lettuce*, a variety of great merit for early sowing, the leaves being large, sweet, and crisp. A number of baskets of very fine Mushrooms packed ready for transit was staged by Mr. S. Hardy, Ash House, Parson's Green (bronze Banksian medal).

Professor Henslow, in the course of his remarks on "Some Effects of Growing Plants Under Glass of Various Colours," stated that the effect of light caused great changes. For instance, *Celery* in a wild state was poisonous, whereas under cultivation it was the reverse. There was considerable difference of opinion as to the value of light for seed germination. He would give his experience, and on the whole he came to the conclusion that darkness was better for germination and caused rapid sprouting; on the other hand, some subjects such as oily seed or that with dark skins, such as Beans, germinated more rapidly in light. There had recently been concluded some valuable experiments in America, and statistics proved that 56 per cent. of plant life germinated in the light and 74 per cent. in the dark. Such was also his experience. It was, however, a matter of small importance to many whether light or darkness was required. The more important was the greening process as soon as germination was completed, as without attention to the strengthening of the germ, life was short. On the other hand, the stronger the germ and the more rapidly sprouting took place, the sooner this greening began. For instance, hardy plants, such as conifers, become yellowish-green under glass without shade. The *Aucuba* not exposed to bright sunshine is nearly green and devoid of the bright yellow markings so prominent when fully exposed. He gave illustrations by the aid of various charts and instruments of the effects of various shades and colours, giving the results of growth under each colour and the growth made in a stated period. These were in tabulated form and gave the daily results of each light or colour. He had some small frames with various coloured glass, and made experiments as to the effects on growth by the use of violet, red, yellow, and blue glass, and the conclusion arrived at was that the best results are secured through the light colours. He found that Mustard seed sown under green, blue, or yellow glass gave the highest weight. He gave the various temperatures under different colours. Under green and also blue glass there is a fall. In 1840 or 1845 light green glass was used on the roof of the large Palm house at Kew to prevent scorching, but it was of no use whatever, Dr. Lindley advising free ventilation to prevent scorching. Under green glass the growth of plants was poor; even clear glass gave worse results than when the plants were grown without glass of any kind. Vegetables, such as Lettuce, he had tried under various coloured glass. Under red it came all stalk, under green little better, yellow glass being best, but it demonstrated that these colours did not suit vegetation. He had been informed that various plants forced in the dark produced

their blooms from a week to a fortnight earlier than others treated to more light. A florist told him that Lilies of the Valley could be had much sooner under blue or violet glass. This was a point deserving more attention. In all instances of using coloured glass it will be found such colour as blue may produce bloom, but light would be required to get foliage. With the electric light experiments had taken place, but this was too powerful for plants under glass; besides there was no heat.

THE NATIONAL DAHLIA SOCIETY.

THIS society, which cares for the Dahlia and holds every year during the first week in September an exhibition at the Crystal Palace, held its annual meeting at the Horticultural Club, Hotel Windsor, on the 2nd inst., Mr. E. Mawley, the chairman of the committee, presiding, there being a good attendance of Dahlia growers from all parts of the country. The annual report, which was read by the secretary, Mr. T. W. Girdlestone, alluded to the storms and gales which prevailed during the days previous to the holding of the annual show in 1892, taxing the patience of the growers and causing them much uneasiness. In spite of all, there was an excellent exhibition. The types were good all round, and there was a great advance in quality, quantity, and effectiveness in the classes of pompon, single, Cactus, and the decorative types. In reference to the groups of true Cactus varieties, the class for these—the varieties which were admissible for competition being set forth in the schedule—proved most attractive and a popular addition to the exhibition, and compared most favourably with the classes in which the decorative varieties could compete. This class will again find a place in the schedule, and the list of Cactus types has been revised and added to as a guide for exhibitors in 1893. The committee deplore the loss of one of their vice-presidents, the late Mr. John Downie, of Edinburgh, many years a judge at the annual show, and who will be greatly missed in that capacity. Pre-eminent as a florist, he was even more so for the consistent liberality with which he always contributed to the funds of the society.

The financial statement showed an income of just over £140; of this sum £56 9s. had been derived as annual subscriptions and donations, and £50 as a donation from the Crystal Palace Company. Prizes had been paid amounting to £122 15s., and other expenses brought up the payments to within a few pounds of the receipts, a small balance being carried forward.

The Rev. Charles Fellowes, Shottesham, was re-elected president of the society, the committee re-elected, and the names of Messrs. R. Dean and W. Frost added thereto. Mr. Edward Mawley was re-elected chairman, and took upon himself also the duties of the treasurer. Mr. T. W. Girdlestone was re-elected secretary. It was announced that the annual show would take place at the Crystal Palace on Sept. 1 and 2. The schedule of prizes for that exhibition was revised, and an offer of special prizes from Mr. John Walker, Thame, for six blooms of his new white self Dahlia John Walker was accepted. The proceedings closed with a hearty vote of thanks to the chairman.

NATIONAL CHRYSANTHEMUM SOCIETY.

THE general committee of this society held a meeting on Monday evening last at Anderton's Hotel, when, in the absence of Mr. Ballantine, the chair was taken by Mr. E. C. Jukes.

Before calling upon the secretary to proceed with the usual preliminary routine business the chairman said he was pleased to see the representatives of affiliated societies, and that whatever suggestions they had to make would be cordially received. Correspondence was read, including a letter from Sir Edwin Saunders, thanking the society for having again elected him to the office of president. The secretary reported on the new

schedule, of which he said a large portion was already in type, and the remainder would be in the printer's hands by the end of the week.

The floral committee, hitherto composed of fifteen members, has recently been increased to eighteen, and the election of the candidates to replace those retiring this year, together with the three additional members, was next proceeded with. A suggestion that the ballot be tried in accordance with Mr. W. H. Fowler's proposition was made, and in spite of some objections as to the secrecy of such a method, it appeared to find favour with most of those present. Mr. Geo. Stevens then proposed that the election be made by show of hands, to which an amendment was made by Mr. Addison that it be by ballot. The amendment was carried. The names of the newly elected members were declared by the scrutineers to be Messrs. Cannell, Boyce, G. Gordon, C. Gibson, H. J. Jones, C. E. Shea, E. Beckett, and W. H. Fowler. Under a new rule a chairman of the floral committee, elected from the members of that body, is to be appointed annually. Mr. C. E. Shea and Mr. George Gordon were nominated, with the result that Mr. Shea was successful with only a majority of one vote. Ten new members were elected, and the Royal Jersey Agricultural and Horticultural Society admitted in affiliation.

The secretary announced that the state of the reserve fund was not so satisfactory as could be wished, and appealed for subscriptions. Mr. W. H. Fowler gave £5; Mr. Harlan, of Hull, £1 ls.; Mr. H. J. Jones, £1; Messrs. J. H. Laing and Son, £1 ls. Mr. R. Owen, who had collected an amount for the special prizes, asked that the total, £6 10s., might be placed to the credit of the reserve fund, which accordingly now stands at £34 ls. 6d. In response to an inquiry raised by a member, the secretary said the following dates were fixed for meetings of the floral committee: September 6 and 27, October 11 and 25, November 8 and 22, December 5 and 13.

The catalogue committee were then re-elected for the year, with the exception that Mr. W. H. Fowler takes the place of Mr. Gordon, who has served upon the committee since 1888.

In future every effort will be made for the meetings of the committee to be held on Mondays.

There was a good attendance, between forty and fifty members being present.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.

THE annual meeting of this flourishing and excellent society, exclusively for the assistance of gardeners when in distress, either in sickness or in old age, was held on Monday last (March 13) at the usual place of meeting, Caledonian Hotel, Robert Street, Adelphi Terrace, W.C. Mr. Geo. J. Ingram ably presided, and there was a large number of the members present, also friends and supporters of the institution. The report presented by the committee for the past year states that:—

In presenting the annual report and balance sheet for the year 1892, the committee have very great pleasure in stating that the society is still progressing most favourably, the membership having increased by about 50 since the last annual meeting. There has again been a somewhat heavy call upon the sick fund, but less by about £30 than in 1891, the amount for the past year being £88 12s. 8d. This amount is covered by deductions of 4s. 7d. and 3s. 6d. from the two classes of members respectively. Three death claims have been paid during the year, the amounts being paid to the nominees. The benefit fund shows an increased annual subscription of £70, with a large sum additional in accrued interest of over £150. The benevolent fund is also in a very satisfactory condition, the increase being £170. The management fund shows a balance in hand of £37 6s. 4d. Through the generosity of Mr. and Mrs. H. J. Veitch on the occasion of their silver wedding, the convalescent fund has been increased to the extent of £100, the amount of their donation to its funds, and the best thanks of the committee are due to Mr. and Mrs. Veitch for their

noble gift. The committee desire to draw attention to the convalescent fund, which is an entirely voluntary one, yet all members are open to receive benefits from it. For its institution they are greatly indebted to the wise counsel and practical suggestions of Mr. N. Sherwood, who largely supports it. At the last annual dinner this gentleman was the means of obtaining about £25 additional to its funds. The balance in hand is £172 19s. 7d. The best thanks of the members are due to Messrs. J. Wheeler, J. George and G. Wheeler for their services as trustees, and to Mr. Jas. Hudson, the treasurer, for the very able and painstaking manner in which he carries out his duties. The treasurer's accounts are most encouraging and satisfactory, no less than £1000 having been invested by him during the past financial year. To Messrs. B. S. Williams and Son, J. Laing and Son, H. Cannell and Sons, and W. Cutbush and Son, for their generous assistance by sending plants, &c., and to Mr. Chard for the able way in which he carried out the decorations on the occasion of the last annual dinner at the Cannon Street Hotel. The dinner was again a marked success, being the means of drawing the attention of the patrons of horticulture to the advantages offered by the society. The last annual dinner was presided over by Mr. John Fraser, who received the support of Mr. Wm. Marshall, both of these gentlemen having taken a great interest in and worked hard for the society at its commencement in 1865. The auditors' report is most satisfactory, and they are thanked for their able and careful inspection of the accounts.

To this report but a few remarks are needed. These are mainly directed towards drawing the attention of the gardeners of the United Kingdom to the benefits offered to them on becoming members. It is essentially a self-help society, supported in addition by those who take great delight in horticulture, not only in the pleasure derived therefrom, but in rendering assistance to its large and increasing army of workers in various grades up and down the country. In these days of progress it does not do to be behind in such matters. We have now the Royal Benevolent Institution and the Royal Orphan Fund, both exclusively for the benefit of gardeners. These excellent societies are doing a great and noble work, but the "United," to use a short name and one by which it is known, offers advantages that neither of these societies can embrace or would ever be able to do without weakening their present sources of assistance. We hold it is incumbent upon all gardeners to ponder well the advantages they would gain by joining this society. No other society of the kind can, or at least does give such favourable terms combined with the benevolent and the convalescent funds, which in their working are quite unique and so framed as to give the greatest possible assistance to its members. Those who framed its rules are to be complimented in unstinted terms for the far-seeing and practical policy which they adopted, rules which in working have proved their soundness and practicability in a marked degree. Unlike many benefit societies, with their vastly accumulated funds—in some cases of over £1,000,000 sterling—money which they cannot touch except for sick benefits, this society allots annually to the members their own share, and thus gives each one his proportion, no accumulation in an unwieldy manner being thus possible. The annual meeting was well attended and the business ably conducted. Three of the committee were again re-elected for a term of three years, viz., Messrs. Cole, Kelf and Peerless, and Mr. A. Hemsley was added to complete the four annually elected. The secretary was also re-elected; his address is 9, Martindale Road, Balham, London, S.W.

The weather in West Herts.—During the present month there has not been a single unseasonably cold day, and only one unseasonably cold night, when the exposed thermometer indicated 11° of frost. On the 8th and 12th the temperature in shade rose to 63°, or to a higher point than any reading recorded here in March during the eight years over which my observations extend. The ground is now at 1 foot deep 7°, and at 2 feet deep 5°, warmer than it was at the beginning of the month. No measurable quantity of rain water has come through either of my percolation gauges, containing 2½ feet of light and

heavy soil, for several days, showing that the ground is now becoming tolerably dry. On four days this month between eight and nine hours of bright sunshine have been recorded. An Early Rivers Peach came first into blossom on a south wall on Monday last, or exactly three weeks earlier than its average date of flowering in the previous seven years.—E. M., *Berkhamsted*.

PUBLIC GARDENS.

New public gardens.—Negotiations are proceeding for the purchase by the Camberwell Vestry, for the sum of £1000, of the surplus land at the rear of the Central Free Library (now in process of erection) in the Peckham Road, for the purpose of laying out and maintaining the same as a public garden. The Bermondsey Vestry has memorialised the London County Council to pay the cost of laying out and maintaining a piece of land in Nelson Street (which is in the midst of a densely populated neighbourhood), which it is proposed to purchase from the trustees of Guy's Hospital. The cost of the land in question would be about £2500; and as a public garden or recreation ground is much required in what is admitted to be an insanitary area, the purchase of the land will soon be effected by the vestry.

Hackney Marsh.—The Parks and Open Spaces Committee reported that the Council on June 14, 1892, decided to purchase Hackney Marsh for £75,000, subject to £25,000 being provided by the Hackney District Board, the lord of the manor, and from other sources, and to the necessary statutory authority being obtained. As the agreements with the landowners are about to be exchanged, they wished to report for the information of the Council that in one case the owner not being able to make a title to a part of the property which he proposed to sell, they had obtained an abatement amounting to £297 10s. from the amount of purchase money to be paid by the Council; and that in another case, it being found that there was a lease in existence which would not expire until 1899, of which the owners may not be able to obtain a surrender, they had arranged that a deduction of £300 should be made from the purchase money if the surrender be not obtained. They recommended that the course taken be approved, and the Council agreed.

Land at Highbury Fields.—The Parks Committee have had under consideration an offer made by Mr. C. C. Paine to sell to the Council for a sum of £9000 a piece of land about $2\frac{1}{2}$ acres in extent, including roads, which adjoins Highbury Fields, and is at the rear of Highbury Terrace. Being of opinion that the Council would not take any action in the purchasing of this land, unless at least one half of the purchase money were contributed, either by the Vestry of Islington, or by residents in the neighbourhood, who, they understood, had collected over £700, they addressed a letter to the Vestry, and had received a reply stating that the Vestry is of opinion that the proposed addition to Highbury Fields is neither necessary nor desirable, and that it declined to make any contribution towards its purchase. They regretted that owing to the refusal of the Vestry of Islington to contribute any portion of the purchase-money, they were not in a position to recommend the Council to purchase the land, which would be very suitable for the formation of a gymnasium and children's playground, of which the neighbourhood was in great need.

West Tilbury Commons.—A special report as to the regulation of West Tilbury Commons, Essex, has just been issued from the Board of Agriculture. These commons, which are about 105 acres in extent, lie in separate tracts, but are connected by either roads or Grass-ways. West Tilbury is within twenty miles of the East End of London, the nearest railway station being about

three-quarters of a mile from the commons. Gravesend, which, with Milton, has a population of 23,000, is less than a mile to the south of Tilbury Fort Common (one of the spaces in question), and although it is on the other side of the river there is a constant communication between it and the north side during the daytime by means of the railway company's steam ferry. The commons are about a mile and a quarter from Tilbury Docks. Their condition has long been unsatisfactory, and a great annoyance to the neighbourhood. It is proposed to preserve the commons in their entirety as open spaces, and when properly managed and protected they will doubtless become pleasant places of resort. The Board, after all the necessary notices had been given, and a local inquiry with public meetings had been held, framed a provisional order, and now recommend that it be confirmed by Parliament.

Open spaces.—At the monthly meeting of the Metropolitan Public Gardens Association at 83, Lancaster Gate, W., Sir William Vincent, vice-chairman, presiding, letters were read from the governors of the city parochial charities granting £500 for the laying out of two specified grounds, and from the executors of the late Sir Charles Wingfield making payment of a legacy of £80. The secretary stated that, excluding the reverend interest of the corporation in part of the land, which it was hoped would not exceed £1000, only £200 was now required to complete the purchase money (£41,000) of the Hilly Fields, S.E. Help was sought by the lammas right holders of Leyton Marshes, E., to preserve the marshes against encroachment threatened by the East London Water Company's Bill, and it was decided to offer assistance in the promotion of a scheme for their management. It was agreed to take steps to acquire, if possible, a desirable piece of land in Walworth, S.E., as a children's playground, though the price at present asked—£8400—was considered too high; and to make inquiries respecting the Guy's Hospital disused burial ground, Nelson Street, S.E., with a view to making it available for public recreation. The suggestions of the association for protecting Kensington Gardens, under which the promoters of the Clapham Junction and Paddington Railway Bill propose to tunnel, had received the favourable consideration of the First Commissioner of Works. Progress was reported with regard to various grounds, including Lincoln's Inn Fields, W.C., vacant land, Ebury Bridge, S.W., South Hampstead, N.W., and Deptford recreation ground, S.E. The Marylebone Vestry wrote accepting seats for Maida Vale, N.W.

The Open Spaces Bill.—The Open Spaces Bill of the London County Council came for consideration before a Select Committee of the House of Commons on Tuesday, March 7. Mr. Coddington presided. Mr. Cripps, Q.C., who appeared on behalf of the London County Council, said that although the Bill dealt with several matters respecting open spaces in the metropolis, he proposed first to consider that portion of the Bill which proposed to throw open Lincoln's Inn Fields to the public. The first witness called was Mr. Charles Harrison, the Chairman of the Parliamentary Committee of the London County Council, who gave the history of these fields, and explained the action of the council in regard to the efforts made to obtain them as an open space. He did not believe that the opening of the fields would reduce the letting value of the surrounding houses. Mr. Berridge, the Chairman of the Law and Parliamentary Committee of the St. Giles's District Board of Works; Mr. Robert Hunter, solicitor to the Post Office, and for thirty years a resident in Lincoln's Inn Fields, and other witnesses gave evidence in support of the Bill. Mr. Pender then proceeded to address the committee on behalf of the opposition of the trustees. At the close of the evidence, the chairman announced that the committee found the preamble of the Bill proved so far as related to the opening of Lincoln's Inn Fields, but upon the question of by-laws they were not satisfied with the proposals of the County Council, and they suggested that the trustees

should confer with the London County Council and submit to that committee what they (the trustees) proposed.

The Royal Gardeners' Orphan Fund.

As will be seen by our advertisement columns, the annual dinner of this institution, arranged for March 22, has, by the request of the chairman, Baron Ferdinand de Rothschild, been postponed to Wednesday, April 26.

Clearing a pond.—Will you kindly tell me of any way that I can get rid of Bullrushes in a lake where there is about 2 feet of water? I cannot drain it, as there are a good many trout in it, and some parts are very deep. Also do you know of any way of destroying, in a lake about 10 feet deep, weeds which are so thick, that they are putting a stop to all fishing?—W. A. S.

* * It is surely possible to lower the water at the best season of the year, and clear the lake of the mud, &c. This is what we do under similar circumstances and with the greatest success.—Ed.

Grubs in Fern pots.—Would you please name enclosed grubs? I find them in large numbers every year when shaking out *Adiantums*, especially *A. cuneatum*.—J. RAINBOW.

* * Your *Adiantums* are attacked by the grubs of the black Vine weevil. There is nothing practically to be done as regards destroying the grubs but picking them out from among the roots. If you apply any insecticides which will kill the grubs, you will kill your plants as well. Later on in the season when the weevils are about, and you find the leaves of various plants eaten by them, shake such plants at night over a white sheet. The weevils hide themselves most cunningly during the day, and only come out at night to feed, when if they are surprised by a bright light they often fall as if dead, and remain perfectly motionless for a minute or so, so that it is as well to put the plants which are thought to be attacked on a white cloth or sheet before nightfall.—G. S. S.

Varieties of Impatiens Sultani.—This well-known plant is represented in the Royal Gardens, Kew, by a charming series of forms, sports from the type, and making a very beautiful variety of colours. One in particular is of value, the flowers of a soft salmon hue, quite distinct and attractive, well worth growing largely. There are several plants bearing flowers of shades of this colour, whilst we get also an intense crimson. It is not unreasonable to suppose that still further variety in the colour of the flowers will be gained, and it is fortunate that *I. Sultani* is given to this sporting, as it is a bright and thoroughly useful plant for the warm house.

Vegetable Marrows on trellis-work (W. S., Cardiff).—Please make your question more explicit.

Names of plants.—*D. Dowleswell*.—1, *Daphne Mezereum*; 2, *Clematis indivisa*.—*A. Appleton*.—1, possibly *Brassavola lineata*; 2, *Laelia anceps Sanderiana*.

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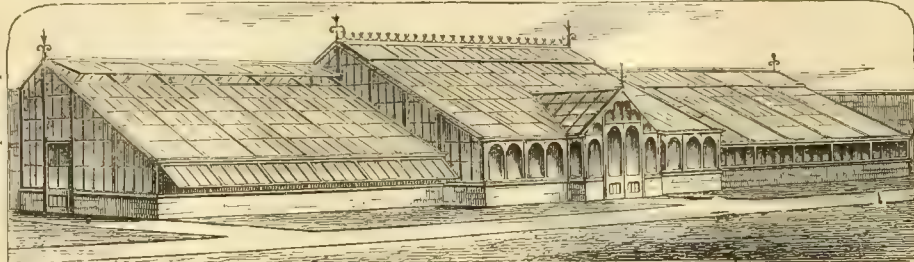
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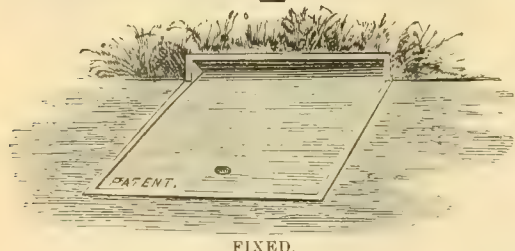
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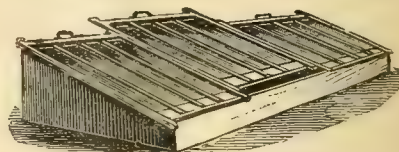
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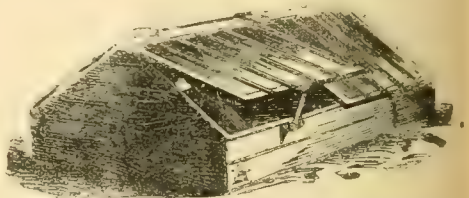
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No. III4. SATURDAY, March 25, 1893. Vol. XLIII.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare.*

ROSE GARDEN.

ROSES AND THE PAST WINTER.

It may interest a large number of your readers, more especially those who are rosarians, to know what the leading professional and amateur growers have to say as to the wintering of their plants, and also as to their present appearance before and, where completed, after pruning.

With the object of ascertaining these points both for my own instruction and guidance and also for general information, I have recently written to the leading Rose growers, and now am able to place before you their views. The general opinion is almost unanimous, and to the effect that the winter has left most Rose plants, even Teas, almost unscathed, and that, except where wood was unripened, the severe frosts of midwinter have done very little harm. This has also been my experience with Hybrid Perpetuals, but although well protected with Bracken, my half-standard Teas have in several cases been killed. More especially has this happened to Ernest Metz, which, I fear, is anything but a strong or satisfactory Rose for our climate. I especially mention this Rose, as in the last two winters I have lost most of my trees of this variety, and as further proof of the difficulty which even the great growers have to get their plants into a healthy state and thereby have good blooms, no flowers of this variety were shown at the Crystal Palace N.R.S. meetings in 1891 and 1892 even in a class reserved each year for this Rose. In addition to Ernest Metz I have also lost half-standards of Nadailac, Innocente Pirola, Mme. de Watteville, Mrs. James Wilson, Ethel Brownlow, and The Bride, several of each of these kinds having been totally killed.

The weather recently has been mild, but on the day I write these notes (March 18) the wind is blowing coldly from the N.N.W., the thermometer at 9 a.m. is below 40°, and during the last two nights it has been down to 28°, but as there is no dampness in the air, this change may not do much harm. If we are lucky enough to have no great and adverse changes in the weather, the prospects of rosarians in most parts of England seem satisfactory for 1893, and as the season is reported from north and south as at the moment fully three weeks in advance of that of 1892, the chances are in favour of the great growers, even from the north, being able to exhibit in good form at our N.R.S. annual Crystal Palace meeting on July 1. It certainly is early to calculate on possibilities or probabilities in the third week of March, but the fact of many rosarians having to prune a fortnight in advance of the date they usually begin work is proof of the comparative earliness of the season.

Last year I did a large part of my pruning, certainly of the Teas, at Eastertide; this year I have already finished cutting my H.P.'s; and from Colchester, Hitchin, Berkhamsted, Work-sop, Reigate, Windsor, Cheshunt, and other headquarters of Rose growing I hear the same tale. Moreover, it was necessary to act promptly in the case of H.P.'s, as the sap has been

flowing so freely, that there was danger of the low dormant buds, from which the finest exhibition Roses come, being developed prematurely, thereby endangering the exhibitors' prospects. Except in the cases of Lady Mary Fitzwilliam and Gustave Piganeau, of which Roses two of our most eminent amateur rosarians have written to me in condemnation as not at all satisfactory in growth, most H.P.'s have developed exceptionally good wood, well matured and in all respects satisfactory. In regard to Gustave Piganeau, I believe that the professional opinion will ere long have to be materially altered. This Rose has been unwisely "cracked up," and even in our revised N.R.S. catalogue it is going forth to rosarians as a "reliable" Rose; but, so far, it has hardly been exhibited, except by professionals who have to grow by the hundred and thousand. My own experience is the same as that of everyone I have asked, namely, that Gustave Piganeau is a bad grower, and consequently not reliable.

The recent warm weather has forced the Teas on, and in a great many gardens (my own included) the buds have started under their winter protection; therefore, when the pruning of Teas is begun, the wood will have to be very severely cut back, as the blanched buds are unlikely to result satisfactorily. So far as the year has gone, we may be said to have had typical weather in each month. We had severely cold weather, but luckily very dry, in January, heavy rainfall in February, and now dry and dusty weather in March. If the three months which have yet to run before the Rose season be in its zenith are of the proverbial types of which we often read, but seldom enjoy, then we may look forward to one of the most satisfactory Rose years which we have had in the last decade.—CHARLES J. GRAHAME, *Croydon.*

P.S.—Notwithstanding severe frosts on the 19th, 20th, and 21st, the dry atmosphere will prevent any serious damage to Rose trees.

—It is always interesting to rosarians to hear how plants have fared during the past winter, although oftentimes in districts but slightly removed from one another the reports will differ very much. From correspondence to hand from various parts of the country, I gather that my own has been an average experience. The majority of plants look very well, but some few kinds that have hitherto been hardy with me are almost killed by the alternate freezing and thawing in January. Ethel Brownlow is an example among the Teas, with Camille Bernardin and Mme. Victor Verdier in the Hybrid Perpetual class. Strange to say, Lamarque and Celine Forestier, two Roses generally tender with me, have come through the winter remarkably well, their wood being scarcely affected. Roses planted early in the autumn are looking particularly well, while the wet weather of the latter part of February has helped the appearance of spring-planted beds. The prospects for the coming season can generally be fairly well gauged at pruning time. The wood this season is rather firmer and better than I anticipated, very little brown pith being found. Strong-growing Teas and Noisettes also look well, and promise a good crop upon last season's wood. L'Idéal has proved itself hardier than William Allen Richardson, and the wood of climbing Perle des Jardins stands the winter well. At the time of writing we have had some sharp frosts after the late milder weather, 6° on the 17th and 8° on the 18th. I do not think the sap in my own plants has risen sufficiently for this to injure them. When the sap is well on the rise and new growth just commencing, a frost of this severity often does much harm. Fortunately, Roses are not nearly so forward in growth as is usual towards the end of March; even on walls their growth is quite three weeks behind that of some seasons.

Budded stocks of last season also look well. Although many of my dwarf Rose buds were encased in ice for two or three weeks, I am pleased to say they look but little the worse, and show every prospect of breaking strongly. Cleopatra and Ernest Metz, the two grand Teas of last summer, have again come through the ordeal very well. At present Cleopatra is one of my forwardest and most promising varieties. On walls I consider we have an excellent prospect of a good crop, owing to the well-ripened state of the wood and the present backwardness of the plants. Roses will have to come on very rapidly indeed if any ordinary spring frosts are to injure them much. I hope they will not have so severe a test as that of June 17 last, when we had 10° of frost here.—R., *Uckfield, Sussex.*

A good Rose (Gloire de Dijon).—As an all-round hardy Rose perhaps no other variety can quite equal this. An arch or succession of arches of Gloire de Dijon has a fine appearance when well covered, but probably the best use we can make of this Rose, and one which will show it off to the greatest advantage, is to cover a building, wall, or any space not suitable for fruit, &c., where the young shoots can extend. Being a strong grower, it revels in plenty of room, and will generally thrive in any position. By planting north and south we can have a continual succession of bloom, while in a shady or very sheltered place the buds and blooms will be extra fine and perfect in the character of their tint and form. This Rose may be successfully propagated by cuttings in October. Choose a shady border and sandy soil. Roses, especially climbers, will be much benefited by liquid manure and other stimulants.—E. W. B.

Rosa pyrenaica.—According to my experience this is not one of the freest bloomers of the alpine species as known in cultivation, but I say this by comparison with some that are exceedingly free, and therefore it is after all a fairly good bloomer, and it usually sets its fruit very freely. I have grown this Rose for a long time and in many different ways, raised it from seed, and even crossed it successfully with *Rosa rugosa*. My finest plant, however, is growing in a due south aspect on a billock of deep rich silky loam, with its roots and stems among big stones half buried in the soil. Compared with other dwarf or alpine Roses, it is one of the more moderate spreaders, that is by means of its root-stocks.—J. WOOD.

Rose Gloire Lyonnaise (Guillot, 1884) can hardly be called a yellow Hybrid Perpetual, as the raiser claimed for it. It is a cross between Baroness Rothschild and Mme. Falcot, consequently not a Hybrid Perpetual at all. The growth is surprising when we bear in mind the habit of the parent plants. Neither of these has the least tendency towards the long growth made by Gloire Lyonnaise, and which often reaches 6 feet to 10 feet. Nor do they flower so well as this variety when pegged down; indeed, this is the best way to cultivate it. The colour is very pale lemon. Pegged down it produces an enormous lot of flowers, that are very useful for button-holes, keeping their shape well.—R.

Roses liable to mildew.—There are a few varieties of Roses which are attacked with mildew much earlier and far more severely than others. We find it on weak and strong constitutions, also upon the common native Brier. The Manetti stock with the Banksian Roses are in my opinion the two least affected. Among the Hybrid Perpetuals I should place Her Majesty as being the one most susceptible to this blight. It is simply astonishing how very rapidly plants of this variety are affected with and perfectly smothered in this disease. Such a strong and robust grower being affected so seriously is altogether against the theory that Roses can grow away from mildew. Abel Carrière, another very strong grower, is also much subject to this fungus, and I fancy that in the majority of cases these two varieties catch the disease much before any others

of this class, and are the principal cause of a general attack over all of one's plants. Other kinds of Hybrid Perpetuals that are more than ordinarily subject to it are Mme. Gabriel Luizet, La Rosière, Violetta Bouyer, Magna Charta, Camille Bernardin, Jules Margottin, Mme. Lacharme, Comtesse de Serenye, Heinrich Schultheis, Charles Darwin, Duchesse de Vallombrosa, Edouard Morren, and François Michelin. On the other hand, there are two or three which seem mildew-proof—Ulrich Brunner and Gloire Lyonnaise for example. In the so-called Hybrid Tea class we also find several very susceptible to mildew. Many of the early introductions of the late Henry Bennett were very liable to this disease. Among the true Teas, Souvenir de Paul Neron takes the place of Her Majesty, and is closely followed by Innocente Pirola and Edith Gifford. Most of the varieties styled evergreen are peculiarly exempt from mildew. There must be something very sensitive in the constitution of Her Majesty and Souvenir de Paul Neron, or such good growers would not be so much more prone to catch and foster this disease than others of a far weaker character. Once get the fungus among the plants the spores will rapidly attack all the stock, and the effect will be very disastrous unless prompt and effectual measures are taken directly it is discovered.—R.

ROSES AND CLEMATISES.

A PRETTIER combination than that formed by a judicious use of these two grand flowers would be hard to find. Where the strong-growing Roses are in beds and pegged down, the latter part of the summer sees the beds almost quite bare of flowers. This is so easily remedied by following the plan here given, and as we are now upon the point of pruning and generally doing up such beds, these few remarks may be seasonable. Unlike many suggestions, this one may be fully realised during the first season provided your Roses are established. I am not aware of any order of plants so distinct as these two, and which will thrive more satisfactorily under precisely similar conditions. Where pegged-down Roses are to be cultivated in the greatest perfection, it is best to remove the bulk of the wood that has flowered soon after the plants have bloomed. But oftentimes this is not done, owing to pressure of work and the great dislike many amateurs have to cutting away healthy-looking wood from their plants while in full growth. Fortunately, the Clematis will give a grand show of bloom from the time the Roses of this class are practically over for the season until very late in the autumn, especially if those of the Jackmanni class be used. This class being more or less herbaceous perennials also renders them amenable to a course of treatment which fits in eminently with that needed among pegged-down Roses.

Having cut away superfluous wood and forked in the manure placed among the Roses during winter, plant a few Clematises among them before pegging down the Roses. I would recommend that the Clematises be placed between the rows of Roses, and at the rate of one to every two of the latter. I advise the use of the Jackmanni class because its wood is practically useless the following season after blooming, the growth almost always dying down to the base annually. It has a further quality most suitable to our purpose in that of blooming upon wood made the same summer. The plants will make long growths that will intertwine themselves among the Roses, thus gaining sufficient natural support, while the whole may be readily removed late in the autumn, and at a most convenient time for admitting air to the most valuable Rose wood and assisting in its better ripening for blooming the next season. Before the blooms are over from such varieties of Roses as are most suitable for pegging down, the plants will be throwing further strong shoots from their base. These should be left intact at the time of cutting away the growths of both Roses and Clematises that have already flowered

Strong growths do not always start from the true base of the Rose, sometimes breaking about a foot or so from the bottom of the previous breaks. These also, when a sufficient number do not start from the base proper, should be saved and treated in the same manner.

Clematises and Roses are both very hungry feeders and require generous treatment. They can be mulched with manure and the whole routine of their cultivation carried on upon the same lines. After having forked in the manure applied last autumn and planted the Clematises, give a further slight dressing before proceeding to peg down the Roses. Snails are particularly fond of the young Clematis shoots as they break in the spring, and I find a slight dusting of lime sprinkled over them occasionally is a good preventive and easily applied. This class of Clematis, of which Jackmanni is taken as a type, annually makes growths some 10 feet to 20 feet in length, blooming from under each leaf as soon as the wood has attained full length. Like the strong growing Roses, when pegged down these Clematises are the most profuse and certain bloomers of their genus, and will invariably make a grand display.

Where ample room exists a grand effect is gained by planting a whole bed with one variety of Rose and Clematis. There is a great diversity of colour in both of these, and with a little forethought they may be so arranged as to form suitable contrasts to one another, the Roses being in perfection during July, and followed by the Clematises throughout the whole of August and September.

RIDGEWOOD.

SHORT NOTES.—ROSES.

Ella Gordon (W. Paul and Son, 1874) was one of my best and brightest autumnal Roses last year. A good grower, deep cherry-crimson in colour, and a grand acquisition to this shade. It is a brighter form of Mme. Victor Verdier, and good in every respect.—R.

Ethel Brownlow (A. Dickson and Sons, 1887) advanced still further in favour during the season of 1892. It is a distinct light rosy flesh-coloured Tea, having a slight shade of orange-salmon when first opened, of most perfect shape, and it well thinned out, by no means a small Rose. A grand grower, very free bloomer, exquisitely sweet scented, and lasting fresh for a long time.

Sir Joseph Paxton (Laffay, 1852) is a very early flowering Bourbon, and one of the best and hardest Roses for a wall or house. It never fails to give a good crop of bloom and forms a perfect bower or screen of Roses. The colour is clear lilac-rose, very sweet-scented, and a great favourite in cottage gardens.

Princess of Wales (Bennett, 1882) varies very much in colour, sometimes having a great resemblance to Comtesse de Nadaillac, but it usually possesses much more rosy yellow and salmon than that variety. While it is not quite so certain to form grand blooms, it is a rather better grower, and during a hot summer is grand.

Camille Bernardin (Gautreau, 1865) must be classed as one of the most certain and reliable crimson Roses of imbricated form that we have. The blooms are always of good shape and invariably appear in the large winning stands. The edges of the petals reflex slightly, and are paler than the body of the flower. It is one of our most fragrant Hybrid Perpetuals.—R.

Mme. Hoste (Guillot, 1887) is already recognised as one of our most useful and reliable Teas. It has the same grand lasting qualities as Anna Olivier, also resembling that variety in habit and shape. The colour is a pale, but clear lemon-yellow. One may occasionally get an Anna Olivier that would pass for this variety, but Mme. Hoste is, as a rule, very constant and true.

Souvenir de S. A. Prince (Prince, 1889).—Although Nipheto most still rank as the best white Rose, this variety undoubtedly comes next. A fixed sport from Souvenir d'un Ami, it is equally vigorous and possesses the same grand perfume.

The Queen, an American sport from the same variety, is synonymous, but priority should be given to the above name, it having been introduced slightly in advance of The Queen.

Sir Roland Hill (Mack, 1888) was very good with me last season. It is too dark to fit the description of port-wine colour, and may be better described as of a deep velvety plum shade. This grand Rose is a sport from Charles Lefebvre, and has the reputation of reverting back to this variety; but I have not found such the case, although I have grown many hundreds of it since it first came into commerce. With me the growth is rather weaker and decidedly more tender than that of C. Lefebvre. It is one of the most distinct Roses we have.—R.

PURPLE IN FLOWERS.

I WILL ask you to be so kind as to publish at your early convenience the subjoined statement, which I received to-day from the Fellow of the Royal Society. It is upon the subject of "purple in flowers," in which he is interested.—HENRY EWBANK.

The statement runs as follows:—

A few words are necessary in reply to Mr. Engleheart's last letter. I have no wish to go into the question as to whether his letter or my own be the more illogical, although retaining a strong conviction on the subject. I will content myself with a few statements of fact, which, I believe, are well founded and the bearing of which is sufficiently obvious.

1. In zoological terminology it is not necessary to place the generic and specific uses of the same term in juxtaposition. Such terms occur freely in descriptive and anatomical science, as well as in classification, and in the former any such necessity would be extremely cumbersome.

2. Logically, there is no difference between such a double employment and that of the word "purple." Mr. Engleheart would probably admit this if he also admitted the specific use of the latter word, a use which he will find hard to deny after the example mentioned below.

3. The adjective "bright" is not necessary for the specific use of purple by Mr. Nicholson. It has no value for Mr. Engleheart's contention. I merely quoted this instance because it was applied to a species of the genus under discussion—*Solanum*. If I had thought that any argument would have been founded upon the use of the adjective "bright," I should have selected another example.

4. *Ipomœa pulchella* is described by Nicholson as purple; *I. platensis* as violet. But this is only a single example. Nicholson often uses the term in a specific sense, and Mr. Engleheart's failure to meet with it seems to be the outcome of a very superficial examination. It is quite natural for Mr. Engleheart under the circumstances to question the authority of Nicholson, but this course does not help his position, for he not only maintained that the specific use is mistaken, but also that it does not exist.

5. It is easy, therefore, to meet Mr. Engleheart's assertion that "the immutable laws of thought" prevent purple from being used in any but a generic sense, and the other similar statements in his concluding paragraph. Indeed, even if Mr. Engleheart's opinion that the specific use of the word is mistaken be granted, it betrays a touching, but wholly misplaced confidence in the "immutable laws of thought" to suppose that they can prevent the erroneous use of any word. The above example shows that its use is not only possible, but actual, and to maintain the contrary is not indeed "a confusion of both thought and language," but is more dangerous still—it is an inaccuracy.

6. As to Mr. H. Selfe-Leonard, perhaps Mr. Engleheart's last letter, appearing with his own, may enlighten him on the controversy, and show that the issue is wider than he supposes, and includes the question of the specific use of purple. He should also remember that a word may be accurate and yet entirely inappropriate and useless, and that this is certainly the case when a generic colour term is employed to describe flowers of fixed and definite shades. When he speaks of Mr. Ewbank's "indictment," he seems to forget that Mr. Engleheart was distinctly the aggressor.

The English Flower Garden.—Design, Views and Plans. Third edition, revised, with many new illustrations. London: J. Murray, and through all booksellers.

FLOWER GARDEN.

WATSONIA ALBA.

THE annexed engraving represents the white *Watsonia*, a plant which has lately caused some sensation in gardening circles. The original bulb was brought by myself from the farm "Roman River," in the Worcester Valley, about eighty miles from Cape Town, and was found growing in a peaty, boggy marsh, amongst thousands of the common pink variety.

The proprietor of the farm had passed over the ground perhaps hundreds of times during a period of ten years and had never seen a white specimen before, nor has he seen another since. It is a remarkable instance of a unique change of colour without assignable cause. I have found the flowers considerably improved by cultivation in peat, leaf-mould, and light loam and grown in a damp locality. The flowers are of the purest white, rivalling the white of *Camellia alba* in purity of colour. I have 400 spikes in bloom, and they present a striking appearance in the garden.

Oct. 19, 1892.

H. M. ARDERNE.

A LONG SUCCESSION OF STOCKS.

THE good qualities of Stocks are well known to all lovers of flowers, but in only a few cases can it be said that the fact of its being possible to have them nearly or quite all the year round has been grasped and acted upon. During mild winters I have been able to gather from strong plants in the open air repeatedly, and succeeded in doing so nearly up to January in this year. Then came the severe frost, and the Stocks suffered badly in common with many other things. Perfectly hardy they are not, there being, according to my experience, no exception to this rule, the Brompton as well as the East Lothian and other intermediates being completely destroyed occasionally by severe frosts. In order, therefore, to be certain of a nearly or quite constant supply, recourse must be add to frame, pit, or house culture. There are several types of Stocks, and which comprise many excellent varieties. All things considered, the East Lothian varieties, five in number, are the most valuable of all, these being very continuous flowering, and, as before stated, fairly hardy. In the more northern counties they are far more extensively grown, and their merits better appreciated than is the case in the southern parts of our isles, though this would not be the case if it was generally known that they do not require any very special treatment in order to have them at their best. If the seed is sown with that of other varieties late in March or early in April, the plants being duly pricked out into boxes of good soil, hardened off, and finally planted out in well-prepared beds or borders not later than the first week in June, they will commence flowering late in July, and continue gay long after the more tender occupants of the borders are crippled by frost, or damaged by heavy autumnal storms. They winter best when on rather high and dry ground, slopes and such like. By sowing seed early in May, and planting a batch where they can be covered by frames, larger and better spikes will be had in the autumn and during the winter, it being also possible to safely transplant these Stocks from the open borders to pits or frames, while some, if preferred, can be placed in 8-inch or slightly larger pots. The East Lothians are worth growing, even if no protection is to be afforded them.

Of the true intermediates there are now four distinct colours available—crimson, scarlet, purple and white—and it is these that are most generally grown in pots under glass for early spring flowering. Well managed, or as sent in large numbers to Covent Garden, they are very effective, paying well for the trouble taken with them. In very many cases, however, they are kept in a semi-starved state in

small pots far too long, the final shift being given after the mischief has been done, and poor spindly spikes of flowers are the outcome. The seed should be sown about the last week in August, a week later rather than any earlier, and not in heat. Instead of placing the seedlings singly in 3-inch pots, I prefer to place them direct into their flowering pots, three plants in each 6-inch pot answering well. At first they ought to be carefully watered, or the soil may become sour, and during the winter a greenhouse shelf is the best

vases. The first packet or packets of seed may be sown at once, and a succession be had by sowing more seed a month or six weeks hence. Raise in gentle heat, and treat the seedlings much as advised in the case of the intermediates; only the earliest must be kept in a moderately strong heat till they are growing strongly, after which a shelf near the glass in a warm greenhouse will bring them along admirably. They can be had in full bloom early in May, the successional batch being at its best perhaps at Whitsuntide. Supposing

more plants are raised with the rest of the border Stocks, these would be amongst the first to flower, but it is for growing in pots that I most esteem this sturdy little early form. The ordinary Ten-week forms, raised under glass early in April and never checked, are worthy occupants of mixed borders, but are scarcely suitable for massing, unless those who plant them in that way are prepared with some kind of successional plants to succeed the Stocks when they collapse in August. The new pyramidal Ten-week is superior to the ordinary forms, these as a rule producing finerspikes of bloom. Where white flowers are in demand, the comparatively new perpetual flowering type, of which *Princess Alice* is as yet the only representative, should certainly be grown. Raised with the Ten-week and duly planted out on good ground, it will commence flowering by midsummer and continue gay till well into the autumn. This variety is of a somewhat tall weedy habit of growth, and pays well for staking upright. The greater proportion of the plants give double flowers, and the spikes are very handy for cutting and packing. The East Lothians form a good natural succession to the Ten-week forms; so also do the earliest flowering autumn varieties. Of the latter there are six distinct colours, and it is a question if they differ greatly, if at all, from the East Lothians. Any way, they give a grand display during August and September and are proof against all but the most severe frosts. These also should be sown late in March or early in April, and never neglected from the time they are up till they are growing strongly.

The last to be mentioned are the Brompton Stocks. The Old Scarlet is still the

favourite form, and, I think, the hardiest, but the white variety is also worthy of being grown extensively, packets of mixed colours being also distributed by most seedsmen. Late in June is a good time to sow the seed, the seedlings being duly pricked out on sheltered borders, fruit tree borders suiting them well, the slight protection there afforded them by the trees not unfrequently saving the plants from severe frosts. It is during May and June when these varieties are at their best.—I. M. H., in *Field*.



Watsonia alba. Engraved for THE GARDEN from a photograph sent by Mr. H. M. Arderne, The Hill, Claremont, Cape Town.

place for them. Commence feeding when the flower-spikes are forming. To succeed these intermediates, there is a very charming form of Ten-week Stock available, this being distributed in this country either as the new forcing Ten-week or Snowflake. It is quite a gem for pot work, each plant, if well grown, producing a strong central and sometimes side spikes of pure white, clove-scented flowers. A good percentage are double, but the singles are not to be despised, the flowers being large and quite good enough for fillin_

A NOTE ON SPRING FLOWERS.

THERE are many ways of planting spring-flowering bulbs, but, unfortunately, with too much adherence to set patterns and rigid lines. The plan of keeping each colour distinct is being more followed, and the effect is much richer than if several varieties are used in a formal way. Apart from the bedding out of Hyacinths and Tulips, the smaller-flowered bulbs may be used in a distinct and charming manner by planting them as a groundwork to beds filled with small deciduous shrubs. We have noticed before in the pages of THE GARDEN the beauty of the Winter Aconite as a surface to a bed filled with the Siberian Dogwood, also the delightful contrast of colour between *Bulbocodium vernum* and a dark green-stemmed deciduous shrub, these being in beauty quite early in the year. When travelling about recently we have made note of other charming associations, and one of the most striking was the Siberian Squill (*S. sibirica*) planted thickly at the base of standard Rhododendrons. A good surface of soil is left around the shrub, and this is in the time of the flowering of the Squills one sheet of intense blue. The *Chionodoxa* is very beautiful, and much fuss is made about its varieties; but nothing equals a good mass of *S. sibirica* for colour—a lustrous gentian blue, richer than anything we have amongst spring flowers. The Tenby Daffodil, so exquisitely shaped, is very pleasing in a bed filled with *Potentilla fruticosa*, as we noticed at Kew the other day, and it is by thus using the bulbous flowers of spring that one makes the garden interesting to all, getting pictures that the artist would care to see. *Muscari* may be planted as in the case of the Squill, and follow later on, forming a succession, the blue flowers of a duller shade, but very charming. *Scilla bifolia* in its various forms, *Chionodoxas*, Dog's-tooth Violets and such dwarf *Narcissus* as minor are also worthy of note. The white variety of *Erythronium dens-canis* is very beautiful planted at the foot of a standard Rhododendron, the mottled leafage being set off by a profusion of white flowers. This kind of planting illustrates the principle of massing flowers, the only way to get the full effect of their colour. Many gardens are dull at this season, simply through insufficient quantities of the bulbs being planted. A patch or two on the border is not the way to get the full beauty from a flower; but planted thickly as in the way suggested and in positions usually left bare, the garden is filled with colour in the months of March and April, even in February if the Winter Aconite is freely planted. The bulbs are not expensive unless very rare varieties are purchased, which are not necessary to get effect.

Hellebores as cut flowers.—The flowers of the Christmas Rose when cut last in water for two or three weeks, but we cannot always depend upon having them, as they come in midwinter, and unless protected are usually marred by the weather. The spring Hellebores, especially the lovely forms of *orientalis* and *colchicus*, are, as we recently remarked, more constant, and having a graceful habit with several flowers borne on long stalks, they are even prettier for cutting and need no special arrangement. When first we tried them for cutting, however, they proved very disappointing, and did not last fresh for as many days as the flowers of the Christmas Rose would weeks. Apparently, however, this defect arises from some inability of the flower-stems to absorb water at a sufficient rate to make up for evaporation or to sustain the freshness of the blooms. There is a simple and most effectual remedy, however, which is to split up the base of the flower-stem for an inch or so with the knife immediately before putting the flowers in water, and then the blooms keep fresh for nearly a fortnight if they are required as long.

Megasea or Saxifraga Stracheyi is one of the most beautiful of the family, and a large mass of it was recently in bloom in Mr. T. S. Ware's nursery at Tottenham. It should not be planted in too exposed situations, as the flowers are too delicate to withstand keen easterly winds which

occur when it is in full bloom. The flowers are packed closely together in large heads, and are pure white with a pink centre. A spreading colony of it on the rockery is pleasing at this season of the year, and in a sheltered corner will make a brave display of bloom, the plants growing well between large stones. The Megaseas are a valuable class of hardy plants, handsome even when not in bloom for their rich green leathery leaves, quite crimson in tone, however, in the winter months. They are well worth planting in the wilder parts of the garden, and if the position is not too exposed, the large heads of flowers have a fine effect. *M. ciliata*, *M. crassifolia*, and other types are useful for this purpose. A very fine variety of *M. ligulata* is *speciosa*, and it makes a good pot plant for a cool or cold house early in the spring. The flowers are of a clear rosy pink colour and produced freely. *M. cordifolia purpurea*, which has flowers of a rose-purple shade, is a beautiful variety, and should be made a note of. It is a pity to keep the Megaseas under cover. They are so beautiful in the open in the early spring, that they should be well represented in every good garden, the great point being to keep the plants sheltered from keen winds, which play havoc with the flowers. But in every rock garden such assistance may be afforded.

FLOWER GARDEN NOTES.

THE various things alluded to in previous notes that should be sown at any time during the present month are specially suited to those small gardens where means are not to hand for wintering a quantity of bedding stuff, and propagation by seed would tend to obviate in a great measure the necessity for prosecuting the almost impossible task of keeping a small house gay through the winter months, and yet stocking it half-full of zonal Pelargoniums. Where frames on a slight hotbed are available this is the best method of raising what may be called bedding annuals, but they can also be advanced by sowing in boxes in a cool house, and as soon as the seedlings can be handled pricked off into a nice light compost and sheltered from frost and very keen winds by a few mats or cloths. Lobelias, Phlox Drummondii in variety, and the compact form of *Petunia* as well as Asters, Stocks, Marigolds, and Zinnias can be raised in this way. Calceolarias are not nearly so much grown as formerly, and the reason is not difficult of solution; they are miffy subjects, liable to go off at a critical time and leave gaps that are not easily filled with plants of a suitable colour. Flower gardeners of a past generation were in the habit of recommending for these a rich soil and firm planting, but I have always had the best results from open, well-pulverised beds into which a fair dressing of coarse red sand had been worked. A note or two respecting *Begonia Worthiana* reminds one that this as yet is not nearly so widely grown as its merits warrant. There would seem to be two distinct types, the one of loose, straggling habit and only fairly free, the other, which may be described with a considerable amount of truth as about the very best summer bedding plant in cultivation. If the stock is to be increased, tubers should now have been some time in a little warmth, and cuttings struck as soon as they can be handled. If nice little Fuchsias are wanted as dot plants for dwarf subjects and no small old plants are available, those from cutting pots may be pushed along for the purpose. It is not the most striking varieties from a florist's standpoint that are most serviceable, one of the finest examples of Fuchsia bedding both with large and small plants I ever saw being produced with such old-fashioned sorts as *Rose of Castile*, *Mme. Cornellisen*, and *Annette*. We shall soon be pricking off *Margarita* Carnation from the seed boxes into prepared beds with the view of securing nice stocky little plants by the beginning of May. This comparatively new race possesses in an eminent degree one special feature wanting in many so-called border Carnations—freedom of growth and an excellent constitution. It cannot be too firmly impressed on those who contemplate planting Carnations on a rather exten-

sive scale that it is far better to have a few really good things than a host of indifferent varieties. I remember looking through a collection once that boasted a tremendous number of varieties, but the proportion of weedy weakly plants was almost six to one, and I could not help thinking that, however good individual flowers might be, there was not a great number that could be classed as really good all-round sorts.

If any extension in the way of herbaceous perennial planting is in contemplation for another autumn, it is well to make careful and constant notes from the present time right through the summer with the view of becoming thoroughly acquainted with the habits, time, and duration of flowering, heights and other matters of the different varieties of the various species of plants with which it is proposed to deal, especially if large beds on Grass are to be planted up in this way. One can shift a clump quickly on a mixed herbaceous border, but large beds once planted should not be meddled with more than one can help, save it may be to restrict rambling tendencies in large or to lift for division dwarfier plants. It is very interesting, if space permits, to devote separate beds to one given plant in its several varieties, planting thinly and in sufficient bulk to give a good idea of each particular variety to carpet with something else if no dwarf members are to be found in a particular family, or in other cases to make the trailers perform this duty for their taller brethren. An instance of this latter style may be found in a bed of Campanulas. A really charming effect can be produced by first planting nice clumps of *persicifolia*, *p. alba*, *p. alba plena*, *urticifolia fl.-pl.* and *u. alba plena*, afterwards filling in with *carpatica* and *isophylla*. A very beautiful bed can be formed with some half dozen varieties of *Spiræa*, that would average from 3 feet to 4 feet in height, afterwards carpeting with tufted Pansies, which would also serve a similar purpose round bold clumps of Day Lilies or the Rose Campion. Another race of plants that might with advantage have a bed or beds devoted entirely to them are the Starworts, and if planted with due regard to height and succession of flower a brave show would be made. The increased interest in their culture is shown by the fact that some ninety varieties are catalogued this year, and really it is difficult to lay one's hand on a more useful race of plants, flowering as they do in variety for four months in the year. With a little overhead protection against frost we were cutting *diffusus*, *pendulus*, *vimineus*, and *Calliope* the second week in December. As the time for taking Violet cuttings will soon be at hand, it is well to make sure of a good border for them. A south-west aspect suits them best here; they get a fair share of sunshine. On a due south border I have known them a long time making headway, despite a good mulching, if a spell of hot, very dry weather followed planting. Many set out the runners at once where they are to remain until the following September, but, taking the average of seasons, plants are more quickly made by dibbing the runners thickly into a frame now and planting out in April. The most stocky, sturdy plants and the firmest, finest, and earliest developed crowns are obtained from fairly stiff soil, and if the border is rather on the light side, it is well to introduce something to give it a firmer and rather more holding consistency. A bit of deeply-dug, well-pulverised soil that would grow Strawberries well would be admirably adapted for Violets.

SUCCULENTS.—Many of these were first used as carpet-bedding plants, and because one was only in the habit of seeing them on the smoothly-plastered sides of beds or forming on a small scale an accurate representation of the Egyptian Pyramids with every sign of flower carefully removed, we are apt to forget what really nice beds they make if allowed to grow and flower at will. They may be associated with other dwarf-flowering or fine-foliaged plants, or, taking any species, form beds of the several varieties. *Echeverias*, *Sempervivums*, and *Mesembryanthemums* may be treated in this way, and form very attractive beds, of which not the least interesting part

is the careful examination of the curious flowers as they are developed. They may be planted in clumps with intervening spaces carpeted with one of the dwarfiest of the family, and an occasional plant of nice, light graceful foliage dropped in here and there to relieve (if it be deemed advisable) the formality of the beds.

E. BURRELL.

Claremont.

THE CULTIVATION OF VIOLETS.

THIS subject has been so exhaustively treated by "J. R." (page 157) that further reference to it may not be considered necessary or desirable, but one point uppermost in my mind, and not mentioned by "J. R.," forms an excuse for reverting to the subject again. Mild bottom-heat derived from fermenting materials is invariably adopted by many good Violet growers for stimulating a prompt and healthy movement in root, leaf, and flower bud. I know full well the aversion many hold in regard to the employment of artificial heat, believing it to be totally unnecessary in the cultivation of Violets, but while one gardener may secure a full supply by one method, another may gain the same ends by quite a different method of treatment. Possibly "J. R." is one of those good growers who consider bottom-heat undesirable, or reference would most assuredly have been made to such an important detail. We have two large four-light pits filled with the favourite Marie Louise; one of them was filled up to within a few inches of the glass with manure and leaves with the view of generating some slight warmth, and for the purpose, too, of raising the soil for planting in to the required close proximity to the glass. No other means would have been so expeditious or easily carried out, and the results gained are certainly far in advance of those secured by opposite treatment, namely, by employing no manure at all. At the present time there is no comparison in the state of the plants or the quantity or quality of the blooms gathered. From this same provision I have seen unusually fine and abundant blossoms in other gardens in past years, and I have, too, inspected equally good Violets grown in an unheated bed. Local conditions have so much influence in gaining a full and continuous supply of these sweet-smelling flowers, that it is difficult to estimate which is the best to adopt with certainty, and in adapting oneself to circumstances there is not always choice in the matter pertaining to the method of procedure. Deep pits, when employed for other purposes in summer, require a quantity of material of some kind to fill them to the desired height, and often litter and leaves can be had more conveniently than soil for raising the Violets close up to the glass.

Another point in which many growers differ is in the preparation of the young plants or runners for future work. "J. R." says, "Short runners are superior to divided crowns, and infinitely more so than cuttings." This may be true in his own case, but there are growers who, for various reasons, prefer those methods which give so little satisfaction to "J. R." Those who propagate them by cuttings must needs have a spare frame for their reception and after-treatment until the time when they are planted in their summer quarters. I once saw a very fine lot of plants in the Marston Gardens which Mr. Iggulden had grown from cuttings. Instead of these being planted outdoors for the summer months, they were allowed to grow in the pits permanently where they flower in winter. They were remarkable for the dwarf and very compact character of their growth and the production in their season of extra fine blooms. It is, of course, not everyone who can give up frame space in summer for the Violet, nor perhaps is it necessary that this should be done. Mr. Iggulden's plants might probably have done just as well if they had been subject to the usual routine of planting and replanting. The dividing of the old crowns offers facilities to the grower who has little time or opportunity for carrying out the details incumbent on the preparation of cuttings or runners. Good Violets have been and still are grown under each method, the issues resulting from either plan

depending very much on attention to detail and local surroundings.

Preparation of the ground and position of the summer quarters are other matters on which growers differ in like manner to that affecting the preparation of the runners. Some trench their ground deeply and apply manure plentifully, while others ignore this altogether, neither digging deeply nor manuring freely, each in turn supplying the one great aim of the cultivator—abundant blossom. Some argue that a sheltered border is desirable for obtaining a full grown and perfect plant, and in perhaps quite as many cases an open situation is chosen, the one answering the same purpose as the other, and so long as this condition of things can be maintained, it matters but little what is the cultural method pursued by anyone.

For growing in pots, the Neapolitan seems better adapted than Marie Louise; the latter I could get to remain in a free-flowering state but a short time in pots, either standing in cold pits or in cold houses. In pots they are much appreciated for room furnishing, but we were unable to keep them long in a satisfactory state. In Capt. Belfield's garden at Frenchay, the old Neapolitan I noticed recently in nice blossom, while Marie Louise showed no such tendency, although both were equally healthy in foliage and growing side by side. This to me seemed convincing proof of the value of one over the other for the purpose in question.

The Gardens, Rood Ashton. W. STRUGNELL.

Hardiness of *Eccremocarpus scaber*.—

This plant proves quite hardy against a south wall where Rose Devonensis has suffered severely and other Roses in a less degree. It is not only breaking up strongly at the bottom, but many of last year's shoots are green at the tips and growing. The plant is most useful for covering rather low walls or trellises in a warm position, as it is more easily trained and kept clothed to the base than are many of our strong-growing climbing plants. It bears a profusion of its orange-red flowers from July to the end of autumn. The large seed-pods form very quickly and should be constantly removed, or they will strain the plant and prevent it from flowering so freely as it should do. In raising seedlings the seed should be sown as soon as ripe and kept in a cool house till spring, when, if removed to warmer quarters, it will soon grow. If kept till spring before being sown, the seed will probably not germinate till the autumn, and in some cases not till the following spring, so losing a season's growth.—J. C. TALLACK.

Omphalodes verna.—What a pity this is not more often seen in gardens! No other flower gives the same colour as this Forget-me-not during the latter days of February and throughout the month of March. In a nook of the rock garden with a southern aspect this plant flourishes well, and is seen to advantage if clumps 2 feet or so in diameter can be accommodated. Small patches are not nearly so effective. Soil that is somewhat retentive is best for giving a sturdy and free growth.—E. M.

Carnation Leopold de Rothschild.—We were reminded of this fine garden Carnation by a quantity of flowers at Gunnersbury Park, Acton, where Carnations succeed well in the open. The large collection planted out in beds has apparently suffered little harm from the peculiarly trying winter through which we have just passed. This variety, which will doubtless be much grown in the future, was raised by Mr. Reynolds between a Clove-scented kind and Miss Joliffe—a very interesting cross. An award of merit was given to it by the Royal Horticultural Society on August 23 last year, when it was finely shown. The flowers are large, full, and fringed, the colour being similar to that of Miss Joliffe, although perhaps a shade darker. A great point is that the calyx does not split, a trait which, unfortunately, mars the usefulness of many of our finest garden Carnations for colour. The flowers are as sweetly scented as those of the old Clove, and thus we get

a combination of the two parents, the colour of Miss Joliffe and the fragrance of the Clove. Last year we tried to find a split calyx on the plants, but happily failed, and the flowers are carried well up on strong vigorous stems. It is a good pot plant owing to its vigour, and continues to bloom over a long season. The specimens were not shown last year until the end of August, and then they were in full perfection.

Border Carnations.—I cannot agree with the remarks of Mr. Young anent the planting of the newly-layered plants in the autumn. For years I practised that plan, but not with success, as many of the layers succumbed during the winter, although they have often been planted tolerably early and received a thin mulch of decayed vegetable soil also. This season I decided to allow the new layers to remain until the spring, where they now are, and much better they look, now growing nicely. I hope to replant them in a week or so now. The soil here is heavy and retentive; hence the loss of plants during the winter months in consequence of their not being sufficiently well established.—E., Swanmore Park.

Carnation showing.—We are glad to notice that the Midland Carnation and Picotee Society is making a slight move in the direction of encouraging a more artistic and natural way of showing Carnations at exhibitions. They announce a prize for

Twelve Carnation or Picotee blooms, exhibition varieties, but dissimilar, selfs and fancies admissible, to be staged in a space not exceeding 20 square inches. No wires, beyond a mere support, no paper collars or manipulation of the calyx allowed, and although a little dressing of the petals will be admitted, as little dressing as possible is desirable. The flowers must be so arranged that they stand well above whatever they may be staged in, so that the calyx may easily be seen; Carnation foliage and buds will be allowed. The object the donors and committee have in view is to encourage an artistic arrangement of the flowers, staged singly in group form, or otherwise, different from the usual arrangement on boards; the attention of exhibitors is particularly directed to this, as the setting up as well as the flowers will be considered in judging.

We are sorry to see that some little dressing of the petals is admitted. There can be no doubt whatever that a Carnation grown naturally in the open air is prettier than any dressed one whatever.

Scilla bifolia is flowering freely in gardens now, but we should like to see such a charming bulb grown in greater quantity. There are several varieties of it, and the majority were in full bloom a few days ago in the nursery of Mr. T. S. Ware at Tottenham. *S. b. grandiflora* or *taurica* is one of the best, the flowers of the deepest blue and produced freely in dense heads. *Alba*, pure white, is pleasing in large masses, and there are also rose and other coloured kinds—an interesting series. It is important to note that the Scillas are very proof against weather trials at this season. The flowers resist well, keen easterly winds, which seem to dry the life out of the Daffodils and many early treasures of the year. The blue and the white varieties mixed make an excellent contrast, and the bulbs thrive in ordinary soil, but it should be fairly light.

The Chionodoxas are in full flower now, and a collection of them is interesting. They are all in bloom in the nursery of Mr. T. S. Ware at Tottenham, the now common *C. Luciliae* springing up everywhere. It should be planted thickly on grassy slopes, as at Regent's Park. The white variety is in bloom at Tottenham, but it is not common in gardens. As regards the type, one gets great variety in the colouring of the flowers, some very pale, others large and of the deepest blue. One we noticed at Tottenham was quite an Oxford blue, almost self. *C. sardensis* is a form of the Glory of the Snow, introduced by Messrs. Barr and Son in 1883. The flowers are smaller than those of the type, more freely produced, and of a richer blue. *C. Luciliae gigantea*, or *grandiflora*, as it is now usually called, was represented by a coloured plate in THE GARDEN, Sept. 3, 1892. It is a very fine form, the flowers

large, violet-blue, with very little white in the centre, and constant. The whole plant has a remarkably robust aspect. *C. nana*, *C. cretica* and its variety *albiflora* are of interest, but for general cultivation *C. Luciliae* is the most useful. There are many named varieties of *C. Luciliae*, as *C. Tmolusi*, *Forbesi*, &c., but they are distinct in name only.

THE ROCK GARDEN.

CONSTRUCTION OF ROCKS FOR CHOICE ALPINE PLANTS.

REQUIREMENTS OF ALPINES.—I stated in the introduction to these articles that no class of plants is more suitable for the rock garden than alpine plants, especially the choice and neat growing kinds from the higher mountain regions, which, if the situation is favourable to their growth, should certainly predominate in every rock garden, no matter whether it be on the smallest scale or of the most extensive proportions. There is a peculiar charm about these gems of the mountain flora, which cannot fail to fascinate even the dullest traveller who has seen them in their native home. No country in Europe is favoured with climatic conditions more suitable to the wants of these mountain plants than the British Isles, which have the advantage of possessing one of the principal requirements, viz., a humid atmosphere. Yet it is astonishing how many people still adhere to the absurd notion that choice alpine plants cannot be grown successfully in this country. As a matter of fact they grow much better here than even in the lowlands of Switzerland, where the air is very dry. I was particularly impressed with the truth of this when visiting Geneva some eighteen months ago, on my return journey from a trip through the Alps. Here the courteous director of the Jardin Alpin d'Acclimatation was loud in his complaints against the dryness of the atmosphere in that district, which he sought to counteract by planting a number of his choicest alpine plants in Sphagnum Moss. In this country we have no need of such measures, as I tried to explain last year in notes on that subject in *THE GARDEN*. The moist atmosphere of the British Isles enables us to grow the choicest alpine plants, some of them attaining even more vigour than they do in their native mountains; and yet how few are the really good alpine gardens in this country. We have, it is true, several good nurseries where alpine plants are cultivated. We have also assortments of alpine plants in botanic gardens and in the gardens of a few enthusiastic lovers of mountain plants. These, however, are in most cases merely botanical collections not associated with a picturesque rock garden, as they should be, but mostly planted without regard to the effect of the rocks. I will endeavour, therefore, to show in the following pages how rock gardens might be constructed so as to meet all the requirements of choice alpine plants, not only without offending against the rules of taste and harmony, but heightening the picturesque effect through being associated with objects of natural beauty. Before, however, dealing with the subject of constructing rocks specially adapted for mountain plants, I will say a few words about

ALPINES IN THEIR NATIVE HOME.

It is always necessary to study the life of plants in their native home before we can be successful in their cultivation, and in the case of alpine plants this is, perhaps, even more important than with any other class of plants. The most essential requirements of the neat gems of the higher altitudes are:—

- (1) Abundance of light.

- (2) An even moisture.
- (3) Coolness of the roots.
- (4) Deep, but narrow fissures filled with well-drained stony or gritty soil.

I will deal with these requirements in the above order.

(1) **LIGHT.**—Even the most casual observer among alpine tourists cannot fail to have noticed the exquisite purity and brilliancy of the light which floods these districts. In the high mountain passes, in the pastures, the fringes of the snowfields, and in the moraines of the glaciers nothing but the very dwarfiest form of vegetation could possibly escape the destructive force of avalanches and intense cold. No tree could possibly exist and throw its shadow over these little mountain gems, which hold undisputed possession of the ground. They may sometimes be shaded by other rocks, but this is a very different matter from being shaded by trees. For a period varying from four to six and sometimes even nine months they are guarded from destruction by a thick covering of soft downy snow. Under the brilliant sunshine of spring and early summer, and under the influence of the "Föhn"—a regularly recurring balmy southerly wind—this covering is cleared away in an almost in-



Positions for great Silvery Rockfoil (*S. longifolia*) in rock garden.

credibly short space of time, and immediately all is life and beauty as if by magic. But even in the midst of summer these plants are frozen stiff every night until they are reached by the rays of a scorching sun. The result of such rapid expansion of the cells, as must necessarily take place in consequence of this sudden change from intense cold to extreme heat, would doubtless be fatal to the tender tissues of plants in the lowlands; but these sturdy mountaineers have very small cells and much thicker cell walls than other plants, and are thus protected against a tearing of their tissues by rapid expansion or contraction during changes of temperature. That plants in such localities can grow only during a very few hours in the day probably accounts for their stunted mode of growth and the extreme shortness of their internodes. It also accounts for the fact that plants like the Edelweiss, the Androsaces, and even the pretty little Cobweb Houseleek become more vigorous in these islands (where they can grow by night as well as by day) than in their native mountains. The leaves and occasionally even the flowers of some of those alpine plants which flourish best in an extremely sunny position are covered with white silky hairs, or with a white downy kind of wool. As white repels the rays of the sun more than any other colour, we must regard this covering

as Nature's armour, which enables the plants to withstand the fiercest rays of sunshine.

The lesson taught us by these hints of Nature is obvious and of immense value when applied to practical rock building. It shows the absurdity of building rocks for choice alpine plants near trees which might overshadow them. It shows that these plants require an open space and the purest light, with the exception of those growing naturally on the shady sides of rocks. It also shows that plants with whitish or silvery leaves (caused by a covering of silky hairs or downy wool) should have the sunniest place of all.

(2) **EVEN MOISTURE.**—This is amply provided by Nature in the mountain districts for the roots of the plants as well as in the atmosphere. Not only the highest peaks, but also the middle regions of the Alps are frequently swept by large clouds. In addition to this, continuous streams of water dash in roaring torrents from the melting ice of the glaciers. From the snowfields, too, there is a perpetual flow of water trickling over the hillsides during the summer months. The evaporation from these copious supplies of moisture on a bright day must be enormous and well calculated to surround the plants with a protecting veil of mist, which, though invisible, must be an effectual barrier against the scorching sun. Some plants, of course, like more moisture than others. For instance, *Saxifraga aizoides*, *Parnassia palustris*, *Gentiana bavarica* and many more may be seen growing with their roots actually immersed in the icy cold liquid, while others, like *Opuntia vulgaris*, *Aretia vitaliana*, *Androsace helvetica*, and many *Sedums*, *Sempervivums*, and *Saxifrages*, seem to clothe the face of dry rocks. It will be found on examination, however, that these places are by no means as dry as they seem.

Plants only an inch in height often send their roots to a depth of several feet into the narrow crevices, where naturally the rocks would be saturated with moisture in abundance, even though their outer surface may appear as dry as dust. Notably is this the case with plants like the great Pyrenean Saxi-

frage (*Saxifraga longifolia*), many *Androsaces* and other plants with leaves arranged in the shape of rosettes. These seem to enjoy a dry sunny position for their leaves, which we generally find growing sideways from the rocks, so that no water can rest in the centre of the rosettes, but their roots would be down ever so far, where soil and stones are perpetually cool and moist, no matter what may be the changes of climate.

Here, again, we must look to Nature as our great teacher, and the foregoing facts furnish us with the best practical hints for our rock garden. We learn from them that plants with rosettes of leaves like *Saxifraga longifolia* should be planted sideways, as shown in the accompanying illustration of that plant in the rock garden of Mr. Rawson, Bramhope, Torquay (engraved from a photograph kindly sent by Messrs. Veitch, Exeter). We may also learn from the above facts that an even moisture not only of the soil, but also of the atmosphere are most essential, and that, therefore, the roots of alpine plants in the rock garden should be encouraged to grow to such a depth that constant moisture would be assured. It will also be seen from the above hints, that for producing a moist atmosphere around the plants a sprinkling of the stones, which would absorb and afterwards evaporate the water, must be of as much importance as watering the plants in dry weather.

As an additional protection against drought I find it an excellent plan not only to cover the ground around choice alpine plants with small stones, but also to have somewhat larger stones projecting from the surface in such a way that they may throw a certain amount of shadow, not on the plants, which in most cases require the brightest light, but on the soil from which they spring, and which would thus be prevented from drying too rapidly under the influence of a bright summer sun. For plants preferring an exceptionally damp situation, the moisture-

The roots of these plants must have been in actual contact with the ice while their heads were exposed to a broiling July sun. The difference of temperature between roots and leaves must have been at least some 70° or 80° Fahr., and yet their blooms showed a brilliancy of colour I had never seen before. At a considerable distance lower down in the moraine I noticed many more of these and other charming plants growing among the huge piles of boulders, which bear grim evidence of the destructive forces of bygone ages. The crevices

means of providing both coolness and moisture for the roots of our alpine plants than by inducing them to penetrate as deeply as possible into the medium in which they are planted, so that the root tips would be far away from a surface exposed to the dangers of drought in summer or excessive wet in winter. Most people plant alpine plants in rich soil and in the ordinary way, like a bedding plant. The consequence is that such plants spread their roots close beneath the surface, where moisture and coolness would not be even, but constantly changing, and this is the reason why so many choice alpine plants perish in our gardens. Their modest requirements are by most people misunderstood and overrated. The lovely alpine Toadflax, for instance, refuses to grow in the rich soil of an ordinary border, but if sown on stony rubbish containing scarcely a scrap of soil, it will grow like a weed, because in such a position it would be obliged to send its roots to a great depth to find the scanty nourishment it requires, and at this depth the soil would naturally be cool and moist.

(4) DEEP, BUT NARROW CREVICES, well drained and filled with stony or gritty soil, must evidently be the best possible means of supplying alpine plants with the requirements enumerated above, and of this we have plenty of evidence in the Alps and other mountain ranges. Here we may see many thousands of the loveliest flowers apparently growing from the solid rock, but on examining such spots we will find that they spring from chinks and fissures, which often are so narrow as to be scarcely visible. That these narrow crevices must be of very considerable depth is proved beyond doubt by the flourishing condition of the plants, which, to be able to find the sparse food provided for their existence, must of necessity send their roots to a depth where neither copious rains nor scorching sunshine would be able to produce any material difference in the degree of coolness or moisture surrounding the roots, as the sun's fiercest rays could not be felt at such a depth, and any excess of moisture would be absorbed by the stone. The same conditions exist in the pastures of the Alps, where these mountain jewels adorn not the bare rocks, but a green sward. On closer examination we will often discover that the gritty surface soil in these localities is barely an inch or two in thickness, and that the plants have driven their roots so firmly into the numerous crevices of the rock below that it is quite impossible to dig them out without breaking them. At high altitudes in those enormous accumulations of grit and (now stationary) boulders and stones of all sizes called a "terminal moraine," and left behind in the track of a receding glacier, we have further evidence of the fact that alpine plants enjoy a position where their roots can penetrate into deep crevices. So luxuriant are their growth and so endless their variety in these localities, that the moraines by some writers have been styled "the botanic gardens of the Alps."

Here, then, we may once more draw conclusions from Nature's work, which will assist us in our practical work of rock-building. We may learn that deep and narrow fissures filled with small stones and gritty soil must be the best possible means for providing alpine plants from high altitudes with the conditions they require, and we may also learn that if alpine plants in their native home can flourish in a narrow fissure, which by chance has become filled with particles of decayed vegetable matter mixed with stony grit, it must surely be wrong



Alpine flowers.

holding capacity of the soil might be increased by an admixture of Sphagnum Moss.

(3) COOLNESS OF THE ROOTS.—This seems as important to alpine plants from a high level as light and moisture. When visiting the glacier of Valsoray, not far from the Gt. St. Bernard and near the Italian frontier of Switzerland, I noticed in the highest part of the moraine some lovely specimens of *Campanula cenisia*, *Aquilegia alpina*, *Linaria alpina* (the alpine Toadflax), and other plants, but when uprooting them with the "piolet," I struck, to my great astonishment, the solid ice of the glacier, covered by only a few inches of stony grit.

between these boulders must have been many yards in depth, but they were filled up by grit and stony *débris*, doubtless washed down from higher altitudes. It was here that the mountain gems seemed to flourish in greatest abundance. On carefully digging out a few of these plants, I noticed that their roots were of enormous length compared with their size, and I came to the conclusion that plants growing at a distance from a glacier are obliged to send their roots to an enormous depth before they can reach that degree of coolness and moisture so essential to their well-being. In practical rock-building, we have no better

to attempt their cultivation (as is so often done) in rich, well-manured garden soil.

Eceter.

F. W. MEYER.

(To be continued.)

ORCHARD AND FRUIT GARDEN.

HOW TO INCREASE THE VALUE OF LAND.

TO THE EDITOR OF THE GARDEN.

SIR,—Free trade and foreign competition have depreciated the value of land in this country from 25 to 50 per cent., and even now, at the reduced rents, in many instances, the land does not pay for the outlay and labour expended in working it. Thousands of acres are gradually going out of cultivation, and unless something is done, the land-owners and those who are struggling to get a living out of the land will be ruined, and one of the most important industries driven out of the country. A very serious and important question is to determine what is needed to bring about a change, and what manner of staple industry can be applied that will give a substantial return and be the means of rescuing the landed interest from the loss it has sustained, and afford employment to the working classes throughout the country. Innumerable suggestions are from time to time being thrown out; different methods of cultivation, different varieties of crops brought forward as adjuncts and substitutes, but all come far short and are not in any way likely to meet the difficulty.

What is required is an industry that can be taken up by the whole country upon a broad and extensive basis, an industry that will benefit the landowner, farmer and labourer throughout the length and breadth of the land. There is no mode of culture which can be applied to the land with like advantages for reclaiming it or giving such profitable returns as fruit growing. We have only to take for our guidance (to enable us to arrive at a correct conclusion on this subject) the quantity of fruit of all kinds imported annually. According to last year's returns, we find that over £9,000,000 worth was imported in addition to what we grow ourselves. This enormous sum is being paid away annually to the foreign growers. And why should this go on year after year, and our land be allowed to go out of cultivation and our industry to diminish when, if not all, the greater portion of this fruit could be grown in this country equal in quality, if not superior, to the foreign productions? If it pays the foreigner to grow and send over here this enormous quantity of fruit, it surely would pay us to grow it ourselves and supply our own markets. If this sum of money, instead of being paid away to the foreigner, went into the pockets of our landowners, farmers, and labourers, what a different face it would put upon the value of and returns from the land. But we must not stop at nine or ten millions' worth (or whatever sum it represents); more than this will be needed as time goes on and our population increases to enable us to provide a daily supply of wholesome and necessary fruit; and further, the time may not be far distant (after a proper system of culture has been established) when we may find ourselves exporters of fruit instead of importers, both in its raw and preserved state.

Fruit-growing, however, before it becomes universal will require to be taken up on much broader lines and in a much more systematic

and business-like manner than has ever yet been attempted in this country. It must be started and put into force by every landowner throughout the kingdom; some portions of every estate must be appropriated to fruit growing, not simply planting a few trees and allowing them to take care of themselves, but they must be grown well. I have had some thirty years' or more experience in fruit growing, and have watched the steady, though slow development, and I am persuaded that if it was carried out on a much more extensive scale, it would soon work a marvellous change in this country; not only would it bring back the land to its normal value, but profitable returns would be realised by the cultivator for capital and labour expended, employment given to the working classes, and their emigration to towns or to other countries through want of employment prevented.

To accomplish this, and enable it to be carried out to the extent it should be done, every landowner should allot and plant out at least one-tenth portion of his estate with fruit trees of all kinds; thus to every hundred acres of land there should be ten acres of fruit trees, and in the same proportion upon every estate, large or small. If this were carried out upon all cultivated land throughout Great Britain and Ireland, it would give a return which would astonish the novice in these matters. There must, however, be a system of culture adopted very different from what we are accustomed to see, and the farmer will have to combine horticulture with agriculture, and study the cultivation of fruit growing as he would other branches of his profession, and practise more the system adopted on the Continent, where the "petit culture" has been carried out for generations and has become the staple industry and the backbone of the country. Fruit societies should be formed in various centres throughout the country, factories erected for drying and preserving fruits, and auction marts for the sale of fruit established in all suitable and convenient localities. Local societies should also be formed in every village where all business could be organised and instructions given. Experts should also be engaged by these societies to give instructions for laying out and planting upon the best and most approved principles. When this work has been properly carried out and farms planted with the choicest fruit trees, they would readily command tenants at an advanced rental. A farm, say, of 100 acres, assuming the present rental to be 30s. per acre, would, with ten acres of the best hardy fruits and in good bearing, be increased in value at least 10s. per acre, and instead of 30s. would readily let at £2. To arrive at the results which would be obtained if this scheme were carried out, as I have proposed, throughout the entire kingdom, we must calculate upon the amount of land which would be available. Taking from the Board of Agriculture returns—the acreage under crops—we shall find that there are twenty million acres throughout Great Britain and Ireland under cultivation in crops of all kinds, and this does not include permanent pasture, mountain and heath, waste lands, or woodlands. Assuming, as I have suggested, that one-tenth of this cultivated land is allotted to fruit-tree plantations, this would give us two million acres for the cultivation of fruit trees. Now, it will be asked, what will be the return when properly planted and under skilled management? The only means by which we can arrive at a fair calculation is by taking what we know to be realised upon good land in favourable localities. In good seasons I have known instances where £30 or £40 per acre have been realised for

Apples, and £50 to £60 per acre for Plums, and in some instances considerably more. But we are now dealing with a very wide area, and although £30 per acre may be obtained in the more favoured districts, we have to take the bad and doubtful into consideration, which in some cases may not realise one-third of this. I will, however, for my calculation go far below what I consider might be obtained, and take the average returns throughout Great Britain and Ireland at £10 per acre. This upon two million acres would give a return of £20,000,000 worth of fruit to dispose of.

With such an enormous supply, it may be reasonably asked whether the market would not be glutted? When we consider, however, that thirty-seven millions of people have to be supplied with fruit for the year, it would amount to a very small proportion per head per day for twelve months. Again, we must not suppose that fruit to this amount will be ready to bring into the market the second or third year after the trees are planted, and under most favourable circumstances at least four or five years will be required before a full return can be looked for, and by that time we shall probably find that, with increased population, there will not even then be sufficient for the demand. JOHN CRANSTON, F.R.H.S.

King's Acre, Hereford.

Peach Alexandra Noblesse.—This is one of the best Peaches for a garden wall. There may be better market varieties, colour in this being rather deficient, but the quality is very superior. I have had four dozen fruit from a tree the second year after planting. Room may sometimes be found for Peaches between Pear and other wall trees, training them very low, as Peach trees will fruit near the ground, while Pears usually do not bear much the first year or so.—E. W. B.

Apple Maclean's Favourite.—This Apple that I am trying to obtain is described in Mackintosh's "Book of the Garden," published in 1855, as follows: "Colour yellow, form roundish, size medium, quality excellent. In use from October till March. Tree hardy, moderate bearer. According to Mr. Thomson, of the London Horticultural Society, a fruit of the highest excellence." I know one place where there is a small tree of it. The gardener knowing that I was fond of a good Apple gave me a few three or four years ago, saying it was the best English Apple he had ever tasted. I have been trying ever since to get a tree.—J. FRANCIS CUST.

* * This Apple was shown by Messrs. W. Paul and Son, Waltham Cross, at the Apple Congress at Chiswick in 1883, and it is also described in Scott's "Orchardist."—ED.

Imported Peaches.—If the sample of Cape Peaches sent by the importers to a recent meeting of the fruit committee at the Drill Hall are to be regarded as of the best—and presumably they were—that the Cape can give us, I think the only thing which our home growers have to fear is that these practically inferior fruits may render Peaches generally unpopular. I should very much like to have the opinion of so able a Peach grower as Mr. McIndoe on this point, for he was at the meeting and tasted the sample. On the other hand, these imported Peaches may lead consumers to regard our home-grown fruits with all the greater esteem. Apart from the fact that these Peaches come to us at a time of the year when we have no similar fruits, and therefore do not in any way compete with home produce, I do not see, beyond the first point I have submitted, that anyone need be for one moment concerned about them. It is a fact that the fruits are gathered long before they are ripe, and whatsoever of native flavour they may possess when naturally ripened on the trees, it is all taken out of them so much in transit,

that they are, judging by the sample I have referred to, of very little value. Mr. Groom refers to the prettily decorated way the fruits are set up in the shop windows. Just so; but why may not home-grown fruits be shown with equal attractiveness? Also, why should we be so far behind the foreigner in these matters of taste?—A. D.

Apple Baumann's Red Reinette.—Where space is limited this is a good kind. The habit is upright, the branches quite stiff, and as the fruit is of medium size, it should be a good sort to plant in a windy situation. With the exception of *Mère de Ménage*, the colour of Baumann's is the deepest of any. The fruit will keep with ordinary care quite well until the middle or end of February. As a late dessert Apple this sort should be planted freely; the flesh is firm, crisp and pleasing. The tree bears heavily in a young state.—E. M., *Hants.*

MULCHING FRUIT TREES.

I DO not think that the mulching of fruit trees is carried out always as it should be. Many persons put on a thick covering of manure over the surface of established trees in the autumn, leaving it there until decomposition has entirely taken place. I hold this is a great mistake and a practice likely to lead to bad results in many cases. Nine out of every ten that treat their fruit trees in this manner would be at a loss to give a reason for the practice beyond saying that others do it. Mulching is really carried out to conserve the moisture in the soil. Another object in mulching is to encourage surface roots, it being an acknowledged fact that a cool moist condition is the most favourable to this. When the soil is baked dry on the surface the roots seem to shrink from such unnatural conditions and dive deeper in quest of that moisture which is denied them on the surface. Those persons who practise mulching of established fruit trees in the autumn and winter cannot have any other reason for so doing than that of adding stimulating food to the trees. Mulching is not the best way to carry this out; the process of absorption is too slow to be efficacious. The evil of autumn and winter mulchings is great; by its presence the chief factor towards success is absent, that of the sun warming the roots and soil in the spring and early summer. Established trees, such as Peaches on walls, or indeed any kind, do not need assistance from mulching until the crop of fruit is assured; then this addition of food is useful to help to swell the fruit. The materials for mulching are not always well chosen. The constituent portions of the soil should determine in some measure the kind of manure that is best suited to give the greatest assistance to the tree. A heavy soil, which is naturally much colder than a light one owing to its greater retention of moisture, should not have the kind of manure laid on the surface that is calculated to render it still colder. I allude to cow manure, which is heavy and "closer" in its composition, therefore not calculated to suit heavy soil. Partly decayed horse manure with a fair amount of short straw amongst it is the best kind of manure for strong land, especially if a good quantity of wood ashes can be added to it. Light sandy soils are benefited by the addition of cow manure.

In the case of newly-planted trees it is the accepted rule in all well-managed gardens to apply some partly decayed manure to the surface soil directly the trees are planted, the object being twofold: to protect the roots from frost during winter, and to maintain the soil in a moist state during the summer months. This not only minimises the labour in applying water to the roots during very dry weather, but keeps the soil in a better state than when artificial watering is resorted to.

The evil of mulching is that the manure robs the roots and soil of the benefit that should accrue from the sun shining upon them at a certain time of the year. Many persons, I fear, do not think of this; if they do, they do not take the trouble to

remedy the evil. If the mulching was removed the first week in May or earlier, according to the state of the weather, being simply drawn off to one side and then allowed to remain for at least three weeks, when it could be replaced, provided hot and dry weather necessitated its employment for maintaining the soil in a moist state, better results would follow. Trees that are planted high—as they should be in soil which is at all heavy or wet—are much more likely to suffer from drought than those which have their roots deeper in the soil. If anyone will try the experiment of removing the mulching from newly-planted Apple trees and allow it to remain on others all the year without a break, he will quickly see the difference in the growth of the trees under the two methods. Where the removal of the mulching is neglected the growth is poor as compared with the other plan.

E. M.

SYRINGING IN FRUIT HOUSES.

QUITE recently I was appealed to on the subject of syringing in vineries, being asked whether it was necessary to syringe at any time. This inquiring friend was told last year by a gardener in charge of a large place that overhead syringing was never resorted to in the vineries under his charge, and the results being invariably exceptionally good, he also decided to discontinue the practice. Apparently it is not answering quite so well as could be wished, and it is very doubtful if the old practice of syringing once or twice a day will not be again resorted to. If all vineries were of similar size and construction, then some general rule might be laid down as to when to syringe and when merely damping down the walls and floors is necessary only. The houses where no overhead syringing is ever practised are span-roofed and far above the average in size, and there are no brick walls or pavements of any kind to reckon with. In such structures if the ventilation is properly attended to there is little or no likelihood of the atmosphere ever becoming parched and dry, and as a consequence there is no undue evaporation of moisture going on from the stems and leaves. Added to this the Vines are trained at a considerable distance from the glass, or, on an average, fully 2 feet, and this again is another advantage as far as the prevention of rapid evaporation is concerned, a good circulation of moist air constantly playing over the leaves. Not only is the air in such structures seldom, if ever, too arid, but there is more ammonia constantly present than is possible for any length of time in smaller houses. If this were not so, small seeds generally would not germinate so quickly and surely as they always do when placed in these large houses.

When, however, we come to compare the large structures I have just alluded to with the very large majority of vineries, we find conditions necessitate very different treatment. In these nearly everything tends to dryness. The heat from the pipes parches the atmosphere, the walls and floors adding to the difficulties with which those in charge have to contend. I shall not readily forget my first attempt to grow Cucumbers on the "express system," that is to say, without ever opening the ventilators. For a time everything went on well, the great heat, coupled with plenty of moisture in the atmosphere, causing the Cucumbers to grow with surprising rapidity. All the while the weather was only moderately hot the Cucumbers grew most satisfactorily, but in June we had far too much sunshine to suit our ordinary forcing house, and in spite of shading, syringing overhead hourly, and damping the walls and floors, red spider increased surprisingly, being also larger than I ever saw them under glass, and burning soon followed.

With those great ridge-and-furrow houses, with no walls and in many cases no boarded-up divisions or such as are favoured by many market growers, there is little or no necessity for shading, air-giving or very frequent overhead syringings. Naturally in these cases there are few drying influences at work, the air, highly charged with moisture, also circulating more than might appear possible. In small, or comparatively small vineries, the treatment of the contents must also differ considerably from what answers well in large structures. If the rods when started are not syringed, they will not break so strongly or evenly as they would do if regularly moistened. The same rule holds good in the case of the stems of fruit trees, these being capable of absorbing moisture as well as of evaporating it in a dry atmosphere. The moisture imbibed from the atmosphere and some of that supplied with the syringe actually serve to supplement that which the heat liquifies in the sap-vessels generally. It is advisable, therefore, to keep the house and rods or stems, as the case may be, uniformly moist, and this, coupled with gentle heat, promotes a strong and regular break. When leaves are forming heavy drenchings are objectionable, especially on dull cold days, enough moisture being supplied by means of damping down occasionally. If a clear dry day is anticipated, then a gentle early morning overhead syringing may well be given, this being repeated when the house is closed early in the afternoon. That ought to be sufficient, though if the walls and floors become dry, these may well be remoistened in the evening.

In addition to overhead syringing being good for fruit trees and Vines in their earlier stages of growth, it is also needed in very many instances for keeping down insect pests, notably red spider. Small, indifferently glazed and over-heated structures are particularly favourable to the increase of the troublesome insect named, and in many instances it is only while overhead syringing is resorted to that it can be kept in check. Nor will gentle dewing meet the case; the syringe must be used forcibly, not merely on the under-side of the leaves, but also, where possible, on the upper surface. The former is certainly preferred by red spider, this evidently being where it can best tap the moisture in the leaves; but if greatly disturbed on one side, it will quickly take possession of the other. Red spider is frequently seen on Peach and Nectarine trees before fruit is set, and there ought, therefore, to be no long cessation from syringing, no harm being done, but rather the contrary if the trees were syringed once daily, or, say, when the house is closed, during the flowering period. When the fruit is swelling, syringe freely and early on the mornings of clear days, and again when the house is closed early in the afternoon, and this being persevered with up to the time the fruit is nearly fit to gather, discontinuing then, red spider ought to be kept under. Not so very many years ago few thought of using the jet nozzles on syringes, but now-a-days these rather than the roses are mostly favoured as being more readily used for either gently dewing or forcibly syringing the trees or Vines. In the case of the latter, unfortunately, overhead syringing must in most instances cease after the bunches are in flower, or otherwise there is every likelihood of the berries being disfigured owing to the water used leaving a sediment behind. Especially is this the case with very hard water, and only filtered soft water can be really used with any degree of safety. There is also the bloom of the berries to be

thought of, an excess of moisture being prejudicial to this—the “pride and glory” of the Grape grower.

Clear rain water is always to be preferred for syringing and damping down, owing principally to the ammonia it contains, and which is beneficial alike to the leafy growth as well as the roots of fruit trees and Vines. Those, therefore, are most fortunate who have at their command large supplies of rain water stored preferably in the houses where used, the next best thing being large open tanks over or near to hot-water pipes in which to both warm and soften hard water. I am aware that market growers use cold, hard water very freely, but if this is economical, it is not what I would advise private gardeners to copy. W. I.

STRAWBERRY CULTURE UNDER GLASS.

A good deal of adverse criticism has appeared in the gardening papers with reference to Laxton's Noble Strawberry, and I shall now state some facts which will go to prove that we have in this fruit at least a valuable addition to our by no means extensive list of good Strawberries. Certainly the house I have, 36 feet by 25 feet and 16 feet high, would not have been erected if Noble had not been raised, for no other Strawberry would fulfil the conditions requisite for profitable culture in a cool house by the method I practise, and by the adoption of which anyone in possession of a greenhouse may have ripe fruit in May when Strawberries are very scarce and dear. For this purpose the plant must be prolific, and I have brought in runners from the open field, 98 per cent. of which have fruited. The berries must be large, and I have had some weigh 1 oz. each. The crop must come in early, and Noble is admitted to beat the record in that respect, at least according to size of fruit. As to quality, my customers never complain, and even late in the season when Strawberries are plentiful and Noble is about over I still have inquiries for more Noble, while British Queen and some other first-class kinds are comparatively unsaleable.

No doubt the soil has great influence on quality (mine is a sandy clay loam), and also artificial manures. I use kainit or German potash salts, which increases the colour and improves the flavour of the fruit. When carefully punnetted Noble is by far the most attractive Strawberry in the shop window, price wholesale varying from 3s. 6d. to 4s. per lb., according to season, and at home I find the early fruit very palatable. The best Strawberry preserve I ever tasted was made from Noble gathered in the wet. And now as to culture. I have the house fitted up with boxes, most of them overhead and running the whole length of the house. The boxes are made from plank-wide inch deal, being 11 inches wide and 10 inches deep, having holes $1\frac{1}{2}$ inches in diameter and $7\frac{1}{2}$ inches apart along the sides. The plants or runners are brought in direct from the field with a ball of earth attached, the leaves drawn through the holes when the box is half full of soil, and another lot planted above close to the edge of box. If quantity of fruit is the object a row may also be planted in the centre, but to get fine samples I find it best not to crowd the plants, so utilise the middle of box for some other crop. Tomato plants put in (not too early) and tied up to sticks till the Strawberries are over, then trained over box, have proved successful; Radishes will also do well. This season I have chiefly a dark strain of double Wallflower, blooms to be cut before the fruit comes on. Asparagus plants may be put in centre; in fact I have filled the wider floor boxes (or borders formed with slates) with these roots. In planting, the soil must be well pressed in and should not be of too light a nature nor too rich, the object being fruit, not rank foliage. Therefore I use plain soil with a good admixture of kainit and superphosphate, and a mulch on the surface of good rotten manure. Nitrate of soda I have

found to produce too much foliage, as in my rather crowded house, which has a capacity for 6000 plants, the light must not be impeded any more than necessary. Besides those on the floor, the house contains four boxes elevated 4 feet, six boxes 7 feet, and two boxes 12 feet above the floor, the upper ones being always the earliest, while some are directly above others. Yet the fruit will grow and ripen, for the structure is not only in a very favourable position, but entirely glass, back, front and sides, right down to the ventilators, 6 inches from the ground. In addition to these larger boxes, I have some 400 feet run of small troughs, 6 inches wide by 5 inches deep, fixed temporarily near the glass. These are specially for Strawberries, and are removed when the crop is over. They answer the purpose of pots, but require only one-third as much watering. If the larger boxes are not utilised later on for Tomatoes, flowers, such as Stocks, Asters, &c., may be grown, to be followed in October with Chrysanthemums, which do well in them. The side holes in the boxes may be filled with Lobelias, Pansies or Parsley. If such a plant could be found, I should prefer a second crop of Strawberries to come in during September. The Chrysanthemum plants are grown in an open border, with Parsley between the rows. All space between the Chrysanthemums may be filled in with this Parsley, which gives a refreshing appearance to the house and may realise as much as the flowers. Wallflowers follow well planted out on the Chrysanthemum ground, a bed having been sown in May for this purpose. Planted with Strawberries, the larger boxes will require watering about twice a week. These boxes may be made from 3 feet to 10 feet long, to rest on cross or X shaped legs, and you may then, without a greenhouse or even a garden, have early Strawberries by placing them under some sheltered wall where the sun has free access. For this purpose, of course, holes for plants will be required only on one side. February is a good time to get in the plants, though they will do up to the middle of March. Where there is plenty to choose from, a careful selection of runners with good plump crowns should be made. Noble has one great fault as a field crop, which is its liability to injury from late spring frosts, the blossom being particularly tender. This makes it all the more desirable that we should protect as many plants as possible, thereby ensuring a crop independent of the weather. E. W. BEAVEN.

Holmer, Hereford.

Peach Alexander.—Mr. Crump complains of not having been rightly understood when he made inquiries a year ago as to the reason of Peach Alexander being more prone to cast its buds prematurely than any other varieties under his charge, and with some reason. If I remember rightly, I was about the only one replying who did not read him a lesson as to what he ought or ought not to have done, but ventured to suggest that it is a constitutional weakness not merely of Alexander, but also of Waterloo and Hale's Early. All are American introductions and evidently of much the same parentage, there being a little bad blood in one of the parents. With me this season all are behaving better than usual. A considerable number of buds dropped, or more so than in the case of other varieties alongside them, but plenty held on, enough in fact to warrant me in removing all the worst placed ones before the flowers were fully open. This would almost point to the necessity for more sunshine to ripen the wood than is needed for English raised varieties. In any case, although the wood is considerably stronger than was the case last year the buds held on, all things considered, surprisingly well. Those outside, which grew rather vigorously last summer, are also in a more satisfactory state than usual, and I believe will flower well. Against this must be set the experience of another gardener in this neighbourhood. In a mixed house all the trees with the exception of Waterloo and Alexander are flowering well. The only two that dropped are these American varieties, and the crops on them will be light.

Yet the wood of these trees appears to be as well, if not better ripened than that of the rest, so that faulty ripening is not the only cause of the buds dropping. With Peach and Nectarine trees generally, bud-dropping all the while they are growing extra strongly is more or less an evil, but they right themselves eventually. It is very doubtful if the American varieties mentioned will not prove an exception to the rule.—W. IGGULDEN.

GARDEN FLORA.

PLATE 902.

DENDROBIUM PHALÆNOPSIS.

(WITH A COLOURED PLATE OF DENDROBIUM PHALÆNOPSIS SCHROEDERIANUM.)*

THE type was first named and described by Fitzgerald in 1880 from some plants said to have been collected in Queensland. If this statement is correct, it would appear to be only found in Australia in small numbers, and as quite an outlying species. It, however, has been found on some of the islands which serve to connect this part of Australia with New Guinea, where the plant appears to grow in great abundance and with unusual vigour. The variety here illustrated was introduced by Mr. Sander, of St. Albans, during the autumn of 1891. In its native home on the coast of New Guinea, we are told by Mr. Sander's collector that the plants grow on the bare, honeycombed limestone rocks, always exposed to the sun, or getting only very little shade during a part of the day, and that when the weather is rough they often get the spray of the sea water. Plants from such surroundings are usually found somewhat difficult to manage successfully when brought into cultivation, but this cannot be said of this plant, which has proved as easily grown and as free flowering as it is beautiful. I have seen this plant in many places, and in the majority of cases growing as vigorously as when at home, notably in Mr. Cypher's establishment at Cheltenham, where it had been flowering in abundance for months during the past year. It also does well in the collection of the Rev. Mr. Handley and various other places in the neighbourhood of Bath, and also with Mr. Crispin, of Bristol. Coming nearer home, I found this plant at Mr. Williams' at Holloway thriving well, and at Mr. Sander's nursery at St. Albans it was growing and flowering superbly. In one or two places, however, I have seen this Orchid quite spoilt by a small insect which would appear to have been imported with it. This eats into the stem-like pseudo-bulbs, reducing them to powder, and the only plan hitherto which has been found to prevent the ravages of this pest is to cut off the infected bulbs and burn them. This pest I have observed in one or two collections, but the worst affected plants were in the fine collection of Sir Trevor Lawrence, Bart. In the case of this Dendrobe, the pruning system is not one that improves its appearance. This plant has already established its claim to be called a very free bloomer, and the collector says that he has seen twenty-five flowers on a spike, the individual blooms varying from $3\frac{1}{2}$ inches to $4\frac{1}{2}$ inches across, and varying in colour from pure white to dark reddish-purple. They last two months in perfection.

This beautiful plant wherever it has done well has been grown in strong heat, and with an

* Drawn for THE GARDEN in Messrs. Sander's nursery at St. Albans by H. G. Moon, April 5, 1892.



ORCHID (L. L. CHADEN) (L. L. CHADEN) (L. L. CHADEN)

abundance of moisture in the atmosphere. At the same time it must be well exposed to the sun and light, keeping the house properly ventilated. During the growing season it delights in an abundant supply of water both overhead and to its roots; hence the necessity for good and thorough drainage. I think it would benefit this *Dendrobium* if the drainage were composed of small pieces of limestone rock; the roots should not be overburdened with soil. I would certainly advise that this *Dendrobium* be hung up near the roof glass, in order that it may obtain the full benefit of the sunlight. When the pseudo-bulbs have attained their full size and would appear to be made up, the plants should be removed to a cooler house with a drier atmosphere to rest. At this time syringing must cease, and but very little water is necessary to the roots, but do not allow them at any time to suffer through lack of moisture. Soon after the plants have ceased growing the spikes of flower will appear.

WM. HUGH GOWER.

Orchids at Forest Hill.—The Orchid houses in Messrs. Laing's nursery just now are very gay. On a recent visit I noted many nice varieties of *Cattleya Trianae* with large, heavily-marked lips, also some nice *Dendrobiums*, including such kinds as *D. Ainsworthii*, *D. primum* with its large pale lilac flowers, *D. Brymerianum*, *D. Jamesianum* with its ivory white flowers, *D. Wardianum*, for which this place has long been famous, and numerous plants of *D. crassinode*. Speaking of *D. crassinode*, the Messrs. Laing have a form of this plant which I believe they purpose calling *giganteum*. This has the growths a yard or more long. These are flowering the greater part of the way up, the blooms being large and well coloured, but quite in the normal manner. *Oncidium sarcodes*, with its rich yellow and chestnut flowers, was also conspicuous, as were also some very good varieties of *Cymbidium Lowianum*, with its rich apple-green flowers relieved by the band of velvety chestnut-brown round the margin of the lip. This flower, I have observed, this season, has been much in demand for button-holes, sprays, &c. There were also good varieties of *Cypripedium barbatum* and the much brighter *C. Lawrenceanum*; *C. callosum*, a very similar flower to the last-named, but with deflexed petals; *C. villosum* and its near ally, *C. Boxalli*. *Vanda tricolor* in several forms was diffusing a sweet perfume in company with *Dendrochilum glumaceum*, whilst the fine white flowers of *Cœlogyne cristata* made a nice finish to the whole in the warm houses. In the house set apart for the cool plants were numberless forms of *Odontoglossum Alexandrae* and *O. Pescatorei*. *Cypripedium insigne* in variety, *Odontoglossum aspersum*, and good forms of *Masdevallia* were also worthy of note.—W. HUGH GOWER.

***Dendrobium Wardianum* at Gunnersbury Park.**—This species was in full bloom recently at Gunnersbury Park, Acton, and the plants bore exceptionally fine flowers, almost approaching those of the variety *giganteum* in breadth and substance. The bulb was over 3 feet in length and wreathed in bloom, whilst in every case the plants were well flowered. They are grown in baskets and kept near the light, the specimens, when in perfection and hanging in a row from the rafter, filling the house with bright colour. All Orchids vary more or less both in size and colour, and *D. Wardianum* is particularly conspicuous in this respect. There are few more useful Orchids than this, and the varieties as a rule are very fine.

A very beautiful *Odontoglossum* was that shown by Mr. White, gardener to Sir Trevor Lawrence, Bt., at the Drill Hall on Tuesday, March 14. It is one of the finest forms of *O. Ruckerianum* that we have seen and well named splendens. The type, it will be remembered, is a native of New Grenada, and named after Mr. Rucker, in

whose collection it first flowered. The variety splendens was represented by a fine plant bearing a raceme of fourteen flowers, each of very fine shape, large, and washed with a pleasing rosy shade, over which appear spots of deep chocolate-brown, whilst the lip is yellow at the apex and with a blotch or two of the same brownish colour at the front. It was most worthily given an award of merit, and is certainly one of the finest *Odontoglossums* in the collection at Burford Lodge.

***Odontoglossums* for names.**—J. Muir sends me three forms of *O. Alexandrae* for names. These are specially good flowers and deserve special notice. No. 1 appears to be the form known as *fastuosum*, the sepals and petals being flushed with rose and bearing a few spots of chestnut-brown; the lip is white, with a few spots of rich brown midway between the crest and the point. I do not think there can be any doubt about this name. No. 2 is a pure white flower of great beauty, having large and deeply toothed petals, making quite a round flower. This I look upon as being a superior form of the original and typical *Alexandrae* named and figured by Bateman. No. 3 is a remarkably richly marked variety of *O. cirrhosum*, the sepals and petals being heavily spotted with dark chocolate. These varieties all deserve great attention.—W. H. G.

Orchids at Syon House.—The collection of Orchids at Syon House, Isleworth, contains a large number of species and varieties. At this season of the year *Lycaste Skinneri* is of note, and several excellent kinds are in bloom, the flowers of large size, robust, and delightfully coloured as regards the lip. If one gets a good strain, so to speak, of this Orchid, considerable diversity in the lip-colouring is conspicuous, in some varieties deep crimson, pink, or freckled with white on a rose-coloured ground. This variability of colouring is conspicuous in the forms at Syon House. A very interesting *Lycaste* in bloom here is *L. leucantha*. The flowers are not showy, but attractive, the petals ivory-white and the sepals of a soft greenish tint—a quiet association of colour. One specimen of *Cymbidium Lowianum*, representing a very fine variety, carried eleven good spikes, and *C. eburneum*, one of the most beautiful of Orchids, was blooming with unusual freedom. *Cattleya Trianae* in variety, the sweet-scented *Trichopilia suavis*, *Oncidium sphacelatum*, and *Phaius grandifolius* were of note. The *Cypripediums* are remarkably fine in this collection, and, considering the low-lying situation of the place, thus liable to severe fogs, it is surprising that the plants are maintained in such health. Few districts are more foggy than the neighbourhood of Syon, and it occasionally happens that the spikes of *Calanthes* get cut off through this cause. *Cypripediums* are amongst the best plants to stand this enemy to plant growers near very large towns.

SHORT NOTES.—ORCHIDS.

Odontoglossum Rossi.—H. Ross sends a nice gathering of forms of this plant, all varying in size and colour. Nos. 1, 2, 4, and 8 are excellent varieties.—W. H. G.

***Cypripedium javanicum* (W. A. C.).**—This is the name of the specimen you send. *C. japonicum* is a large-flowered terrestrial plant, which has a large lip and which I used to have in quantity, but I have not seen it in cultivation for some few years. *C. javanicum* will do well in the intermediate house.—G.

Odontoglossum Edwardi.—From Mr. Ransom, of Streatham, comes a very elegant variety of this. The flowers are not large even for the species, but they are of a very deep violet-mauve, the base of the lip and the crests deep yellow. It has the additional recommendation of yielding a perfume resembling that of *Violets*. This plant requires to be kept very cool and moist.

Odontoglossum ramosissimum.—From Mr. Ransom, gardener to Mr. J. T. Gabriel, of the Palace Road, Streatham, comes a spray of a magnificent variety of this species. The flowers are large, the sepals and petals prettily undulated, pure white, and much freckled with small spots of lilac-mauve. The lip is

stained on the side lobes with lilac-mauve and dotted with the same colour towards the front, where it is pure white. This fine variety is well worth looking after. The species was first discovered by M. Linden just fifty years ago in New Grenada.—W.

Dendrobium Wardianum.—From Mr. Broome, of Llandudno, come two flowers of a fine form of this species, which in richness of colouring much resemble those of the *Assam* form. The flowers sent appear to be much brighter than those of the form figured in "Select Orchidaceous Plants," t. 19. Mr. Broome tells me this plant was sent him some ten years ago from Rangoon by a friend, and that, like the *Assam* plant, it is much more slender than the ordinary type from Burmah. Whilst admitting that it is a splendid variety, I cannot believe there is any hybrid origin about it.—W. H. G.

THE WEEK'S WORK.

PLANT HOUSES.

THE CONSERVATORY OR SHOW HOUSE.—What with forced shrubs and bulbs as well as greenhouse plants now flowering in a natural manner, there will be quite an abundance of material for keeping any house gay. There is, in fact, the tendency oftentimes just at this period to have really more flowers out than can conveniently be disposed of unless there happens to be a free outlet for cut bloom. This is caused by plants coming on so rapidly to what they did a month back and by the accession of spring-flowering subjects. To remedy this there need not be so many plants forced into flower, such, for instance, as Indian and hardy Azaleas and Rhododendrons. These and others a few weeks later on when opening their blossoms in a natural manner will render good service. An even supply as far as practicable is far better than a glut at one time and a scarcity at another. This is best done by bringing on early a few things at the time, rather than larger numbers at wider intervals. Plants now in flower should have every attention bestowed upon them with regard to watering; once a day will not now be sufficient for this work while the weather is bright, warm and sunny. None should be retained when faded, for such an one spoils the effect of others. In some places it is a practice to rearrange once a week; this is a very good plan as far as it goes, but it does not go far enough, for at more frequent intervals additions may be made with advantage. In the weekly re-arrangement it is a good plan to shift plants from one part to another for variety as well as to benefit the plant if it has been overcrowded. This has more particular reference to hard-wooded plants which are impatient of overcrowding. They may have been grown hitherto in a light, airy house; to crowd them together afterwards whilst in flower is obviously detrimental to their health. When dealing with such things this fact should be borne in mind, and the plants then will not have the character of being unfit for the purpose, when all that is really needed is more rational treatment.

In the conservatory at the present time the climbers will claim attention; some will be coming into flower and others starting into growth. The most should be made of the former, whilst the latter will want attention to prevent the young shoots from becoming entangled. I am no advocate of formal training of climbing plants; it is both hideous from a natural point of view and decidedly irrational also. Upon these and other plants as well a close watch should be kept for insect pests, the green-fly being now increasingly troublesome. In a house with a quantity of flowering plants light fumigations as a check are far preferable to stronger doses at more lengthened intervals. In such houses where Roses are grown there will now be another enemy to contend with in the form of mildew. It is just at this season, when there is the prospect of a good show of flower in a few weeks, that this fungoid growth will appear. The sulphur remedy is the best, and the plan advised in a recent calendar should be acted upon by tak-

ing time by the forelock and adopting the remedy in advance of the pest. There is nothing rational in allowing it to get a foothold before measures are taken to circumvent it. It is far better to apply the sulphur whilst there are still no signs at all and warm the pipes fairly well once or twice a week. I am fully persuaded that injudicious ventilation is a great and aggravating source of evil as regards mildew in Roses at this time of the year. Where the cold chilling air strikes immediately upon the plants, or where sharp currents are allowed, there it will first be found. Care in ventilating, with great caution as to admitting air when an easterly wind is blowing, will do a deal towards keeping it in check.

Such climbers as *Lapagerias* will require looking after closely, as it concerns the young shoots yearly pushing up from the base and top-growth in the tender stage. Slugs are the great enemies of the former, whilst the latter should not be allowed to entwine themselves together, free liberty of growth being at the same time permitted. More water will now be required for the climbers. Those that have been dormant, as deciduous kinds, should have a good soaking given when starting into growth. If this cannot be done effectually in one or two waterings, others should follow, for if dry at the roots from now onwards, the growth will be weakened. It is not at all a bad plan to pierce a few holes into the soil, so that the water can better percolate to the roots in dry spots. Top-dressings, where not already given, should then be applied. These are essential for such plants, using only the best of soil with the addition to a moderate extent of an artificial manure such as bone-meal, which is an excellent manure for nearly all plants of this description. Late *Camellias* now in flower will require shading to preserve their beauty. Shading, in fact, will now have to be generally used in conservatories around the sides if not upon the roof, the latter being probably draped with climbers. *Camellias* starting into growth should be encouraged wherever possible to make a quick growth by keeping them a little close, by syringing, and by liberal attention to watering. Care just at this stage must be taken not to injure the tender foliage; it is very susceptible to injury, and remains afterwards as an eyesore.

JAS. HUDSON.

FRUIT HOUSES.

EARLIEST GRAPES.—Where pot Vines were started extra early and have been kept well on the move ever since, the ripening period will soon be reached. When the berries commence colouring a drier atmosphere should be maintained, making the change gradually, and rather more air ought to be given, taking care, however, that cold draughts are avoided. Very early closing must not be resorted to, and a chink of air should be left on all through the night. A circulation of warm, dry air constantly maintained is favourable both to the colouring and to perfect ripening, faulty colouring being most noticeable if the ripening takes place very rapidly, while if the temperatures are comparatively low, the chances are the colour will be more perfect, but sweetness be wanting. Cease giving liquid manure after the colouring has become general, but do not let the soil about the roots become dry. A close look out should be kept for red spider and thrips, these being kept under by means of a careful and thorough sponging of the leaves with soapy water. Successional crops will in many cases be near the stoning period, and while the stoning is taking place the Vines must not be unduly excited, the night temperatures not exceeding 65°. Increase to 70° and 75° with air, closing early enough to run up the heat for a time to 80°. There ought to be no fixed times for watering, especially where the Vines have their roots confined to narrow and perhaps heated inside borders. These should never become dry, but ought to be watered whenever approaching dryness, the border being frequently probed and examined to a good depth. A mulching of good leaf-soil or old Mushroom bed manure will always

save the watering-pot considerably, and further serves to keep the roots active near the surface. Probably the bulk of forced Grapes is now just past the flowering period, and all such should be early gone over, with a view to selecting the best placed and most perfectly-formed bunches. Only a few more than will be eventually left on the Vines should be saved, and these only in case of accidents with the selected crop. In addition to early thinning out of the bunches, the berries also should be thinned before they are larger than the seed of Sweet Peas. The only exceptions should be made in favour of the Muscat of Alexandria, Muscat Hamburg, or any other shy-setting variety, these latter only being lightly thinned out till it is seen which are well furnished with stones, and those which will fail to swell to near their full size owing to faulty setting.

LATER VINES.—Those started early in February are now growing rapidly. None should be allowed to form many superfluous shoots, but the disbud-ding ought not to be severe in the case of Muscats, as in this instance the bunches sometimes fail to develop properly on the earliest breaks. Should this be the case pull off the earliest laterals and depend upon the back buds for giving plenty of bunches. Attend to the stopping daily, the growths near the upper end of the rods in particular having their points taken out at the second leaf beyond the bunches directly they can be got at. This will divert the flow of sap to where it is most needed. Be very careful in tying down the laterals, or some of the strongest and best of them may be pulled out of their sockets. If the wires for training the rods are somewhat near to the glass, rather than run any risk by tying down the laterals too soon, drop the rods 6 inches or more from the wires, this giving the requisite amount of head room. At or about the flowering period the laterals have become firmly attached, when the rods may then be tied in their usual position and the laterals brought down without any losses. The Vines in the latest houses, starting early in March under very favourable circumstances, invariably break very strongly, very many more shoots being formed at every spur than are needed. These should be early thinned out, only those best placed and showing good bunches being reserved. Also remove the smaller of the double buds that are produced at nearly every joint of strong young rods. Old rods break regularly enough even if tied up to their full length at the outset, but the younger canes, more especially of Lady Downe's, are apt to break most irregularly, and the usual course of depressing or coiling the ends, early disbud-ding, and stopping of shoots that take the lead should be resorted to in these cases. Keep all steadily growing, retarding them at this time of year being most unwise. Keep the borders moist and also maintain a moist atmosphere, and the growth will be stronger accordingly.

MELONS IN POTS.—The aim should be to get these to fruit as quickly as possible. If the first laterals or breaks fail to produce fruit, the chances are the crops will be very light and later than desirable. Early and cleanly remove all side shoots as fast as they form up to where the plants reach the roof trellis, but take good care not to damage the leaves, or the stalks may decay right up to the stem and injuriously affect the latter. Train the plants up the roof a length of 2 feet or rather more, and then pinch out the points. If side shoots are crowded, quickly thin them out and stop those reserved at the first joint beyond the fruit. Towards mid-day impregnate the female flowers with dry pollen, as many as possible on one day, and do not syringe over-head for a day or two after. Plants in 15-inch or rather larger pots ought to be capable of bearing three fairly large fruits, but if less than that number continue to swell, the rest coming to a standstill when near the size of Walnuts, it is advisable, for reasons already given, to be content with these. Feed them freely at the roots and maintain high temperatures, or, say, from 70° by night to 80° or rather more in the daytime. On sunny days syringe lightly over-head and keep the atmosphere moderately moist by damping down the walls and floors of the houses occasionally.

MELONS PLANTED OUT.—Melons delight in a strong clayey loam, or the very opposite of what Cucumbers usually do so well in. All that need be added to this loam is a sprinkling of bone-meal and newly-slaked lime. If heavy loam cannot be had in quantity, mix a little pulverised clay with the best loam procurable and add a sprinkling of nitrate of soda. In order that the roots should have the full benefit of all the heat and moisture going in the house, it is customary to place single small heaps for each plant or else to plant the Melons in a narrow ridge, adding more soil in either case as the roots stand in need of it. There is not the slightest necessity to ram the soil into a hard solid mass, but it ought to be well fixed about the roots, a moderately firm root-run being conducive to short-jointed fruitful growth. On no account sink the plants deeply into the soil, keeping the collars constantly above the level of the rest of the soil being one of the best preventives of canker. Whether the plants shall be put out 2 feet apart more or less must depend on circumstances, some growers favouring close planting, others giving them much more room, setting them out not less than 4 feet apart. Sow more seed in order to have a good succession of fruit in June and July.

PRACTICAL.

THE KITCHEN GARDEN.

POTATO PLANTING.—The drying winds which we are now having are putting the soil into fine condition for Potato planting, and I suspect by the time these notes appear many will have been planted. Not that it is advisable by any means to get in the bulk of the first earlies until April is well in, as if so, and well-prepared sets are planted with a strong primary sprout attached, there is danger of their being cut down by late frosts. This being the case, it is not wise to run any risks by being in too great a hurry. Planted at the early part of April they grow freely, and are enabled to be dug and out of the way before the disease generally puts in an appearance. Late Potatoes may well be planted now, and should certainly be in the ground by the first week in April. Late-planted late Potatoes do not yield so well as earlier planted ones.

PLANTING MAIN-CROP VARIETIES. Too much care cannot be taken in planting the main-crop, or late varieties, as they are sometimes termed. The Potato delights in a free-working soil, and heavy or rough land which is not sufficiently pulverised may be much improved at the time of planting. For instance, instead of planting the sets with a dibber, the rows should be cut out with a heavy and wide hoe. The rows having been cut out, the sets should be laid in the drills, at the same time adding some fertiliser if it is intended to apply any. The soil having been chopped back again, the sets will be surrounded with fine soil. Close planting must be avoided, anything less than 3 feet between the rows for this section not being enough, the sets being placed 15 inches apart. This will allow of the sun having free access, and in some measure prevent the disease.

PLANTING FIRST EARLIES.—Although I have stated that the first week in April is early enough to risk the bulk of the crop, yet a portion of a south border should be planted, so that, weather permitting, there is no likelihood of a break in the supply, as in the advent of a favourable season the early planted ones would turn out well. The rows should be cut out not less than 2 feet apart, an extra 3 inches or 4 inches being an advantage where the ground can be spared. The sets having been well prepared, these must be laid carefully in the drills, rubbing off any smaller sprouts, except one, or at the most two primary ones. A little old Mushroom-bed manure and burned refuse sprinkled in the drills will be of great assistance. It is very unwise to plant sets covered with sprouts, however small, as these cause a crowded growth and a quantity of small and under-sized tubers. On heavy land the sets should be placed nearer the surface than on light soils, but they must be well moulded over with soil drawn from between the rows.

PLANTING SECOND EARLIES.—As it is more amongst these that the disease is apt to appear, and as wide planting is one of the best antidotes against the Potato murrain, this should be adopted. Although 30 inches between the rows may do for short-topped varieties, yet 3 feet would be better, especially if double cropping has to be resorted to.

TOMATOES FOR THE OPEN AIR.—To be successful with open-air Tomatoes, it is very essential that strong and well-grown plants be prepared for the purpose. Unless strong plants are ready for planting by the time the weather is safe to trust them in the open, the season is too far advanced before they commence to fruit; consequently they are not enabled to ripen before the autumn. One of the most essential points is to sow the seeds very thinly in well-drained pots, standing these in an intermediate temperature. Plants raised in a strong heat very quickly become drawn. As soon as the seedlings are through the soil, elevate them well up to the glass, as the more light the better. By growing the plants on in an intermediate temperature, also standing them well apart, good results will follow. A. YOUNG.

ORCHIDS.

My plants of *Cattleya Trianae*, although they made fair growth last summer and autumn, have fewer flowers on a stem than usual. This, I believe, may be attributed to two reasons; one is, that if a plant is allowed to bear a superabundance of flowers one year, and these are allowed to remain until they fade, even a vigorous specimen may, to a certain extent, get exhausted and not recover again sufficiently to make up the bulbs perfectly for next year. To this some may reply, that in a state of Nature the flowers not only remain, but seed-pods are also formed, which must be more exhaustive still. Travellers tell us that in a state of Nature out of doors the flowers do not last very long. But we cannot compare the plants in their native habitat with the same under glass in England. The conditions are so different, and even under natural conditions Orchids may be much exhausted by over-flowering. I have observed also that the flowers of some varieties of *Cattleya Trianae* will last in good condition for five weeks, while others will pass away in two or three weeks. Another cause of few flowers on a stem may be owing to the plants having made few roots the previous summer and autumn, through dull, cold weather or bad potting material; for if few roots are formed, few flowers will be the result. Most of the plants were potted last year, and this also gives them somewhat of a check. With bright weather, which growing *Cattleyas* like, they will probably flower well next season. *Dendrobium superbiens*, an Australian species which produces its flowers in the autumn, is now starting into growth and should be repotted. All the North Australian species, of which *D. bigibbum* is the type and *D. Phalenopsis* the most beautiful, require the same special treatment. Many persons do not succeed well with them, but this can only be owing to the treatment. They are apt to decline after a certain number of years. When they start into growth, place them in a minimum temperature of about 70° and let them have all the sunlight possible, using only a light shade on very hot days. The plants succeed best in pans or teak baskets placed near the roof glass. The excessive heat may cause the leaves to be attacked with red spider, which ruins the constitution of the plants if it is not checked in time. The right thing is to rest the plants well in winter, keep them dry at the roots and in the *Cattleya* house. Grow them well in summer and do not spare the tepid rain water; they have not, of course, much peat and Sphagnum about the roots. *D. speciosum*, of which there is a variety usually grown under the name of *D. Hilli*, is a distinct species and useful for flowering at this season.

Instructions were given as to the treatment needed for the deciduous Indian species last week. It is important to see that all such plants have a good start and are repotted if they need it as the new roots are forming. The deciduous late *Calan-*

thes should also be repotted when they have had enough rest. Now that the flowering time extends over a much longer period, the time for repotting the bulbs must also be extended. *C. vestita gigantea* does not flower until midsummer sometimes. From midwinter to midsummer is a long period for one species to continue flowering. In the evergreen species, of which the pure white *C. veratrifolia* is a well-known useful Orchid, the spikes of flowers of this as well as those of *C. masuca* will continue in good condition for a couple of months, although they perish in a day after they are cut from the plant. The spikes of flowers even before they open are liable to be attacked by a species of aphid of a yellowish tinge, which has a habit of running down the stems the moment the plant is shaken. It is curious to see the hurried manner in which they troop down to hide in the plant, returning again when the alarm has passed away. This pest we have now got rid of by dipping and fumigating. These also should now receive a fair supply of water at the roots, and a surface-dressing throws renewed vigour into them. The surface-dressing consists of sandy loam and decayed cow manure.

Much of success or failure in Orchid culture consists in the way the plants are watered; add to this the ventilation, and it is perhaps safe to say that the man who is the master of these two details of the work will seldom fail to get good results. *Cattleyas* require considerable supplies of water when the roots are in active growth, but recently potted or repotted plants might be seriously injured if they were watered as freely as established plants. Much depends also upon the form of the bulbs. Large solid bulbed species and varieties, like *C. Trianae*, *C. Mendeli*, *C. Mossiae*, &c., are not likely to suffer from lack of a little water so soon as those with long slender bulbs. The *Laelias* come under the same routine of culture as the *Cattleyas*. The distinct and pretty *Laelia harpophylla* may be said to have slender stems, which cannot in any way come under the designation of pseudo-bulbs. This species during the growing season is watered as freely as *Odontoglossum crispum*, and it seldom fails to do well. I observe by notes of this species from Mr. A. Young, of Abberley Hall, that it succeeds admirably in the garden there, and I have no doubt he treats it the same as we do, for he had charge of the Orchids here when this species was introduced to the collection. The same remarks apply in a less degree to the species with thicker stems, some of them much longer, such as *Laelia elegans* and the allied species and varieties, *Cattleya Leopoldi*, *C. Harrisoni*, and all this section. They need not be pushed up so near the roof-glass. The house has all to be shaded alike, and we can only obtain more light and air to some varieties and less to others by placing them in another part of the house. The same remark applies to all the houses. In the warm house, for instance, certain plants would be quite spoiled if they were exposed too near the glass roof, even if well shaded. The *Phalenopsis* and some of the smaller-growing *Angræcums*, such as *A. Sanderianum*, *A. citratum*, *A. bilobum*, *A. Ellisi*, &c., seem to suffer if they get too much sunshine through a light shade; therefore I place them on the side of the house that gets the least sunshine. Our span-roof runs east and west, and I place such plants on the north side. Some of the *Cypripediums* require much shade, especially at this season of the year. *C. superbiens* and all the varieties raised from it must be well shaded, especially in the early part of the year, as even a little sunshine will cause the leaves to lose their colour. *C. Stonei*, *C. Lowianum*, *C. Elliottianum*, and others of the long green-leaved species like rather more sunshine. It is a great point in successful Orchid culture, the proper distribution of the plants in either of the houses. J. DOUGLAS.

***Callicarpa purpurea*.**—Amongst indoor plants grown for the beauty of their fruit, *C. purpurea* is of note. Although the usual way to grow it is in pots, a good plan is to plant it out in

a bed of peaty soil, as in the Royal Gardens, Kew. In the stove there is a large specimen rising to a considerable height, the shoots laden with the clusters of bright purple berries, and bending down gracefully and loosely. We have never seen a finer example of this neglected plant, and every shoot is crowded with the attractive berries. Of *C. purpurea* a coloured plate was published in THE GARDEN, Vol. XXIII., and it deserves to be grown well for the beauty of its berries in the winter season. One cannot get a true idea of its value from small examples, as the growth is too straggling, but when as a bush its full character is revealed. The purple colouring of the berries is remarkably distinct and gives variety to fine-foliaged and flowering plants, and one wants variety in the stove in the winter months. Old plants should be cut hard back to promote new and vigorous growth, whilst cuttings will strike readily in the spring months.

KITCHEN GARDEN.

CAULIFLOWERS FOR AUTUMN.

The introduction of Veitch's Autumn Giant Cauliflower marked a new era in the routine of successional Cauliflower culture, as previous to this it was with difficulty that any could be produced in the late summer or early autumn months. Now, however, under one name or another there is abundant material to select from. At this time Peas are getting scarce in the majority of gardens, and a supply of good Cauliflowers which will turn in at the time stated will be very acceptable. Although I have stated that formerly good Cauliflowers during the late summer and early autumn months were produced with difficulty, it must not be surmised from this that they were not forthcoming, as under a high system of culture the old Walcheren was made to do this. As regards delicate flavour, there is no autumn Cauliflower that can be compared to it, and it should now certainly find a place, even with the now recognised autumn kinds, in all gardens where Cauliflowers are grown. Deep cultivation and free manuring with suitable manure are necessary for poor and gravelly garden soils, as unless these are deeply worked, good Cauliflowers cannot be expected. In these what is termed "club" is often very prevalent, and nothing short of good cultivation will lessen attacks. A worse enemy to contend against is the maggot, which is just as likely to attack plants growing on deep and well-worked soils as in those where the cultivation is not very high. The maggots will cluster about the roots and skin them; consequently the plants collapse. Sometimes the plants emit fresh roots above the point of injury, but they never become healthy or vigorous again. These maggots are caused by a fly (*Anthomyia brassicae*), which lays its eggs at the base of the plant. I have known this insect appear suddenly where any had not been seen for years previously, and so, consequently, no pupæ could have been in the soil. Unless it is of annual occurrence, it is rarely that preventive measures are taken. The worst attack I ever had to contend against was with plants raised early and pricked out in soil overlying a layer of rotten manure, this course having been adopted to enable the plants to be lifted with a ball. Whether it was the manure which attracted the flies I do not know, but a successional lot sown in the open and planted direct into their permanent quarters was not affected in the least. If Cauliflower plants are troubled with these maggots to a serious extent, the best course is to dust the soil

lightly over with soot after the plants are pricked out, and although it is advisable to lift with a ball, yet this should not be troubled about if there is the least suspicion of maggot. Shake the soil carefully from the roots and dip them in a puddle formed with soil, lime, and soot, sufficient water being added to make it adhere to the roots. These autumn Cauliflowers, unlike the summer kinds, are not very likely to button. Where they are likely to fail it is through the plants being raised thickly in a crowded seed-bed, and then left to grow to a large size before being planted. There is another cause which leads to the plants not succeeding well, and that is raising the seedlings in a flower box, or rather seed box, and then not being careful in the watering. In this case the plants are attacked with gangrene just above the surface of the soil, and although Nature tries to assert herself when the little plants are pricked out by emitting roots above the point of injury, yet they never do well.

A kind which has come to the fore of late years, although it was known to many growers previously, is the variety Eclipse. This is an excellent Cauliflower, and comes into use quite a fortnight before Autumn Giant, although sown at the same time. Autumn Mammoth also now has many admirers and is a splendid Cauliflower. Pearl is also an excellent Cauliflower. The plants must already have been prepared by pricking them out into holding soil, so that they will lift cleanly with balls of soil attached to the roots. Instead of planting on the level, cut out fairly deep drills, in which set the plants. This forms a receptacle for the water, and later on for liquid manure. As time goes on the soil must be drawn into the drills and also about the stems just after an application of liquid.

The plants for the earliest plantings will already have been raised from seed sown in February on a gentle hotbed, but no doubt strong seedlings will also be had this season from open-air sowing. The early part of March, and indeed up till the middle of the month, the weather was quite genial for open-air sowing. But most cultivators will or should have two strings to their bow, pricking off the first lot raised under glass when large enough for transplanting for the early autumn crops, and sowing others in the open air for succession. The secret of success with autumn Cauliflowers is to keep them growing steadily from the time the seedlings appear. Others raised in the open if in rows at a fair distance apart, as they should be, and also sown thinly, may be carefully drawn and planted direct into their permanent quarters, that is if the site should be ready for their reception. If not, then prick them off. Time is certainly gained by planting out direct as soon as the plants are ready. To plant on other than deeply-worked and well-manured soil is only to court failure. The heads of these autumn Cauliflowers grow quite large enough—in fact more often much too large—without any assistance from liquid manure. By planting on well-worked and manured ground, watering, if the weather should be dry, would only be needed to establish them, as they will grow well enough afterwards without such assistance, taking the generality of seasons.

A. YOUNG.

Potatoes, yellow-fleshed.—I am unable to give the why and the wherefore of yellow-fleshed Potatoes having a more decided Potato flavour than whiter fleshed kinds, yet such is undoubtedly the case—at least it is so on most soils. Take, for instance, the Ashleafs, Myatt's, for example; how

vastly superior they are in flavour to handsomer and finer whiter sorts; so much so, that it is useless for me to send any other, forced or naturally grown, to my employer's table. I am fully alive to the great merits of Sharpe's Victor as a first early, a splendid forcer, and equally meritorious out of doors, and also a good cropper, and as such have grown it since its introduction; still, the tubers even, although not of the purest white, seem to lack solidity and firmness. Take, again, second earlies. What have we to surpass such as the yellow-fleshed Sutton's Seedling? None of the whites that I am acquainted with. In later varieties we have more choice in kinds that are of this colour and correspondingly superior in flavour. Why is this yellowish tint generally, I may say invariably, accompanied by superior eating qualities? Perhaps some of our Potato specialists can enlighten us on this point, and also if there is a floury white sort which I may be unacquainted with that equals these in flavour and firmness; for if so, I would certainly cultivate it in preference, owing to its better appearance when cooked. There are, again, the black Potatoes Cetewayo, The Congo, and such like. What a real Potato flavour they possess! I do not suppose these will ever be cultivated other than as curiosities; still, they make a pretty and uncommon dish on the table, cooking, as they do, a bluish black, and should any of the diners feel inclined to taste, even if they object to the appearance, no fault will be found with the flavour, and the grower will have no complaint on that score at all events.—J. R., *The Gardens, Tany-brich.*

HARDINESS OF BROCCOLI.

ANOTHER winter has passed, leaving only a small remnant of the Broccoli to give the supply during the next two months. I regret to say very few kinds are hardy; indeed I may say with confidence, as far as my experience goes, none are quite hardy, as it will be found there are gaps even in those which have stood the test. Early in December I sent a note to THE GARDEN on the advantages of laying or heeling over, and this season a small portion of the plants thus treated has been saved, but even heeling over is not sufficient to arrest decay in the case of the mid-season or early kinds, but these latter may often be saved by lifting even if they have only just formed the head. It will be found the taller the variety the more it suffers, so that a sturdy hard stem resists frost better. The Broccoli crop of late years has been a precarious one. This is a serious matter to those expected to supply vegetables in quantity and of varied kinds. The nearest approach to a medium sized Broccoli is Model, and the hardiest I have yet grown; indeed it is the only one left to us out of many rows for some years; though, as I have previously stated, there are some gaps, still the loss is not serious. It will be found that Model owes its frost-resisting power to its hard sturdy growth, having scarcely any stem, and the foliage being more erect than spreading, thus throwing off excessive wet. It has a small or medium-sized head, and in late Broccoli larger growing kinds are the first to succumb. I have tried many varieties and found none better than Model, but in recommending any kind, a hard and fast line should not be drawn. In the matter of early kinds there is a wide choice, often bewildering to the young beginner, and in such cases a small selection of those kinds noted for their compact habit and close heads should be preferred to coarse kinds. Again, the season of sowing requires close attention, as if sown too early and allowed to get drawn in the seed-bed good results cannot be expected. I have seen late Broccoli sown in March when the first or second week in May would have been better in every way. Even early varieties may often be sown much later than is frequently practised, as if sown in April they are quite large enough. For early winter use I rely largely on Veitch's Protecting Autumn Broccoli, and make two sowings, one in March and the next a month later. This variety is not so tender as some. It lifts well and may be stored in a cool place, keeping good for months.

Snow's Winter White follows this, and Model brings up the rear; this last is sown twice, in April and May, and if ground is not at liberty to plant out when ready, the seedlings are pricked out into lines for a short time till the ground required is vacant. G. WYTHES.

THE TIME TO SOW ONIONS.

THERE will be diverse opinions on this subject, and much depends upon individual circumstances; but in every case I would say the earlier the better. At p. 169, Mr. Fish gives us his experience of early sowing, and I am pleased he has supplemented my note with additional cultural notes. Mr. Fish also asks if the seed is sown early for large bulbs, why not for the main crop, and asserts that the large Onions keep quite as long as the medium-sized ones. I quite agree with him; the keeping properties of the bulbs do not depend upon size. It is chiefly the manner in which they are stored and the way the bulbs are matured before storing. This last remark brings me to the subject of this note. Early sowing tends to thorough ripening. When I sent my note on sowing for a few large bulbs, my idea was to point out the importance of securing such, if only in small quantities, to use as a vegetable. I thought many could grow a pan or box of seed who would not go to the trouble of sowing the main crop. By sowing as I advised, the grower would be furnished with good bulbs, and a valuable addition to his somewhat limited stock of vegetables in the winter months. There are other advantages in early sowing which Mr. Fish did not allude to, viz., the freedom from fly or grub, as the bulbs are of a good size by the time the fly appears, and thus often escape its ravages. The fly makes its appearance in the early summer; if the seedlings are at all weak, they soon become infested. By sowing early and feeding during growth, the fly is warded off and heavy crops are the result. I have been in gardens where every precaution was taken to secure a crop, but failures occurred owing to late sowing, and then not on firm ground. This last reason brings to mind Mr. Fish's question as to the importance of a hard bed for this crop. I attach a great deal to this, especially on light soils or in old gardens that have failed to give good results. On light soils I do not think too much trouble can be taken in making a hard bed, doing the work in favourable weather. I make the ground firm before sowing the seed and roll it afterwards, give a heavy dressing of wood ashes, also soot, before sowing the seed, and get the ground prepared for the crop as early in the winter as possible. G. WYTHES.

Potatoes hollow.—What is the cause or are the causes of Potatoes having a vacuum in the centre, or, as is commonly called, being false-hearted?—N. G. Z.

Celery and the frost.—"S. H. B.'s" experience of Standard-bearer Celery (page 147) coincides exactly with mine. Since this fine Celery was first sent out I have used it for main crop entirely, as I can find none other to equal it at all points. I always adopt the plan as far as possible of planting direct from the seed-bed into the trenches, thus saving one check to growth and a lot of extra watering in the busy season. Treated in this way, not one plant in 500 will bolt or become "pipy." I put 2 inches or so of soil round the plants when they are about 1 foot high; this gives the leaves an upright tendency and is all the moulding the plants get until quite late in the season, so the plants are as hardy as it is possible for them to be, and resist frost, as "S. H. B." points out, much better than if moulded earlier. I never protect the Celery in any way, but lift enough to go on with, and lay it in by the heels in a sheltered spot before the ridges get too hard frozen for digging. I see no need for protection on a light soil, no matter how hard the frost may be, and I quite believe that it often does more harm than good, except when first covered with inverted trough-shaped boards that will prevent the litter or whatever may be used from coming into direct contact

with the plants. The flavour and colour of our Celery were never better than at present, and though the usable portions of the sticks are not quite so long as they were, there is not the slightest sign of rotting in the hearts.—J. C. TALLACK, *Licemere Park*.

TREES AND SHRUBS.

ZENOBIAS.

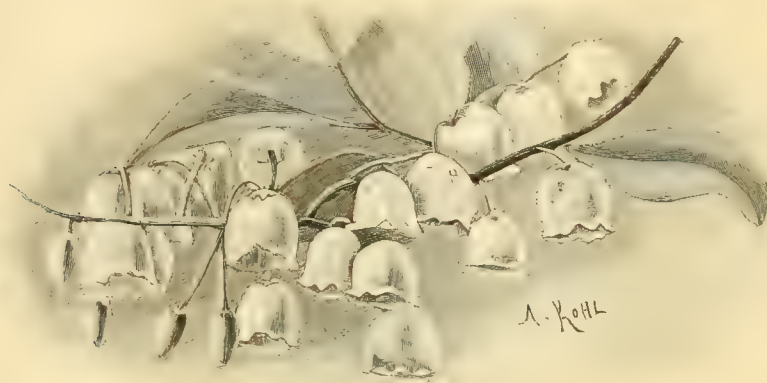
THE genus *Zenobia* contains but a single species, a native of the Southern United States. Perhaps its nearest ally is *Andromeda Mariana*, the Stagger Bush, a plant of considerable beauty, which like the subject of this notice, is far too seldom seen in gardens. A large number of the introduced shrubs from the United States, presenting great variation in habit, size, in the colours of the flowers, and in the time of blooming, could be readily procured by planters, and charming effects produced with but little trouble. In far too many gardens, however, scarcely anything else is to be seen but the Laurel, Box, Aucuba, and such like, and in many even peaty or boggy districts, where the natural conditions

also in size of flower, &c. The beautifully scented white Lily of the Valley-like flowers are produced in clusters or racemes from axillary buds on the wood of the preceding year.

Z. SPECIOSA PULVERULENTA.—A glance at the accompanying cut, which faithfully represents a flowering spray of this beautiful shrub, will be sufficient to prove it one of the most lovely of all garden plants cultivated in the open air in Britain. When treated as a pot plant and kept clear of hard frosts, the silvery leaves remain on the bush until new ones are developed. Even without the snowy white flower-bells, this variety is almost worth growing for the sake of its pretty frosted foliage.

Z. SPECIOSA NITIDA.—In this form the foliage is of a bright green colour on both surfaces. In other respects it is like the form here figured. N.

Rhododendron parvifolium is an interesting species, a native of Siberia, and worthy of note to those who wish for collections. An example of it is in bloom in the Cape house at Kew, and it reminds one strongly of *R. racemosum*, of which a coloured plate was given in THE GARDEN, Oct. 8, 1892. *R. parvifolium* is a pleasing little species, the flowers produced in clusters and white, mar-



Zenobia speciosa pulverulenta.

obtain under which plants such as the *Zenobia* thrive best, the choice of the owner seems to be restricted to *Rhododendrons* or *Azaleas*. We often see this in many of our public parks and private domains. There may be masses of bedding plants, good collections of herbaceous and rock plants and ferneries, together with pinetums, and perhaps beds of *Rhododendrons* and *Azaleas*; but what is the shrubbery like? We turn down a side walk, and there we find a few common Laurels, Lilacs, Snowberries, and other common plants, with Hollies stuck about, and perhaps some Box trees, an Aucuba, or a common *Rhododendron* or two. Yet a number of plants not less useful and ornamental than any of these would succeed perfectly well under the same conditions if allowed a chance of doing so. The *Zenobia* in its native haunts affects boggy spots, but under cultivation in this country it answers well in any fairly cool place. If planted in peat and leaf-mould, it grows vigorously and soon makes a dense bush 3 feet or 4 feet in height by as much through. Where, however, peat cannot be readily procured, a plentiful supply of decayed leaves, mixed with loam, answers very well. In all probability it is hardy in most places in Britain; it thrives well in many places in Scotland. Where it is desired to propagate any particular form, it is desirable to have recourse to layering, seedlings varying excessively in habit and foliage characters, and

gined with rose, leaves deep green, small, and ovate in shape. When in full bloom it is not the least attractive of the smaller species. We hope such kinds as *R. racemosum* will be frequently seen on good rockeries, as a group of it when in flower is charming. It grows only about 9 inches in height, and the leathery leaves are of a bright green colour, whilst the flowers are an inch across, white or very delicate pink, margined with a rose colour, and sweetly scented.

Fabiana imbricata.—What I wrote regarding this shrub (p. 138) was exactly in accordance with my experience of it here. Five years since I struck many cuttings of the original plant growing here in the centre of a small Heath bed partly sheltered from north and easterly winds. The young plants grew very well on the rockery and about the shrubberies. The severe frost of 1891 killed the lot, including the original plant, which was fully a dozen years old. The position of this place is a high and tolerably dry one, being 390 feet above sea level.—E. MOLYNEUX, *Seamore Gardens, Bishop's Waltham, Hants*.

Forsythia viridissima differs chiefly from the better-known *F. suspensa* by its stiffer and erect growth—a considerable distinction, as the last-named spreads about in a graceful way; is, in fact, more a climber than a bush. *F. viridissima* was a few days ago bursting into bloom in the gardens of Syon House, where we are pleased to see Mr. Wythes has been grouping many of our most beautiful shrubs to show their beauty thus arranged. When grouped, the *Forsythias* are very

showy. The flowers, in each case of a rich golden yellow colour, are produced with great freedom. *F. viridissima* grows about 5 feet in height when given ample space to develop its characteristic habit, and is perfectly hardy, never suffering even in the severest winters. It is not particular as to soil, if it is not too heavy. Both species may be planted without fear of introducing sameness in the landscape, as they differ so markedly in habit. *F. suspensa* is a delightful shrub for clothing a wall or for rambling over the rougher parts of the rock garden. It is very charming when planted in a group on the outskirts of the lawn and the shoots permitted to fall over naturally. When in full bloom they are like a stream of gold, the flowers smothering the graceful shoots. Unfortunately, such shrubs are not largely planted in gardens, although very hardy, easily grown, and thriving in almost any soil. There are several varieties of *F. suspensa*, but they much resemble the type.

Kalmia angustifolia for forcing.—This shrub is very useful for forcing into bloom, and is used largely for this purpose by Mr. Wythes at Syon House. The clusters of flowers, which come white under glass, are produced freely and are delightful for cutting, being a change from the usual run of forced things. The forcing must be very slow, as too much heat is ruinous, and two batches may be potted up to provide a succession, the first in October, the second later on, and thus a display is maintained through the winter months.

Cytisus Andreanus.—When this shrub was first introduced from France it was grafted upon the common Laburnum, and for a time grew and flowered very well here. I first had it in a pot; it was then planted out in a nursery with other shrubs, where it grew and flowered beautifully, but when again shifted to a permanent situation, although done with the greatest care and watered when necessary, it died. I gather from this that as a grafted plant it is not satisfactory, but as it strikes root under the same conditions as many other hardy shrubs, I see no advantage in grafting. I have several plants now growing in 4-inch and 5-inch pots, which were rooted in the following manner: Deep seed-pans were well drained and filled with sandy soil; cuttings were then taken from the parent plant, chiefly small side shoots about 5 inches in length, and firmly planted; they were then placed with other shrub cuttings, such as Holly, Desfontainea, Raphiolepis, Euonymus, &c., in a cold frame in a shady position and kept close, but not given too much water. The cuttings were taken in autumn. When our expert shrub propagators know better how to strike it and are able to do it by the thousand, I think this shrub as a market plant has a bright future.—W. O., *Fota, Cork*.

Magnolia fuscata.—This is an old-fashioned plant which I had not seen for years, but I was agreeably surprised to see a fine stock of it in Mr. Williams' nursery at Upper Holloway recently. This flower when quite small, but the blooms are not attractive, being of a dull brown, but the scent given off by them is exquisite. The plant was introduced from China more than a century ago.—W. H. G.

The Venetian Sumach.—The note that accompanied the charming cut of this shrub which appeared in THE GARDEN of February 25 (p. 145) does not say enough in its favour, and understates the dimensions it will attain to if isolated and kept free from other things. The finest specimen that I have ever seen is that upon the lawn at Betteshanger Rectory. The note (p. 145) says that the Venetian Sumach rarely exceeds 8 feet in height, but the specimen in question is fully 10 feet high and 50 feet in circumference. It has been in its present situation for a considerable number of years, rarely fails to flower freely, but in some seasons is particularly profuse, and makes a delightful picture which lasts for weeks. The soil is poor and shallow, overlying chalk. I have observed elsewhere good thriving specimens in gardens on the chalk, but sandy and clay soils do not appear to come amiss to it, and therefore it is

a shrub for general planting. But when the note says "it is almost evergreen," I am led to wonder, in what way. It has nothing of an evergreen character about it, considering that it is destitute of leaves for nearly six months of the year. Were it almost evergreen we should lose one of its best charms, for the leaves, as a matter of fact, begin to fade early in autumn, and take on most glowing shades from yellow to rich crimson. If I were asked for a selection of shrubs specially beautiful in their autumn tints, the Venetian Sumach would certainly be included. As a proof of its attractiveness I may mention that in a large garden where a public fête is held once a year, there are several examples of this shrub. This shrub is always in flower at the time of the fête, and whilst in a general way nothing is touched, it has to be specially watched to prevent its being injured.—A. H.

Grafting Lilacs in France.—I would remind "G. J. L." that I did not positively assert that the grafting of Lilacs is never practised in France. I merely expressed an opinion based on my experience in that country. Hundreds, perhaps thousands, of Lilacs are probably still growing in French gardens which I know were struck in the way mentioned in my former notes on this subject. During the time I was in France I never saw a grafted Lilac, and I am therefore surprised to learn that this way of increase has found favour with the French propagators. As is well known, the French force immense quantities of Lilac, the annual demand for budded plants being very large. Probably grafting on the Privet has been taken up as a means of supplying plants for forcing at a cheap rate.—J. C. B.

STOVE AND GREENHOUSE.

POT MIGNONETTE.

MIGNONETTE is always acceptable, but never more so than in the winter and spring months, when it cannot be had out of doors. Only rarely and in dry weather does Mignonette smell so sweet out of doors as it does when well grown under glass, where the flowers can be kept dry and grossness of growth is checked. To have a good stock for cutting all through the winter and spring months requires some forethought and care, for though the plants must be kept growing, very little fire-heat checks the development of the flower-spikes and causes them to become blind, while it forces new shoots to develop from just under the spikes, only to become blind in their turn. Any attempt to force the plants on is sure to result in failure, but if grown along steadily, fine spikes may be had all through the dull season. I have seen good batches of plants ruined by being kept for only a few days on the shelves of early vineries after these have been started either from neglect in removing them into cool quarters or from a desire to help the plants on a little.

Growers for market bear the palm for producing good pot Mignonette all the year round, and only in rare cases do we see anything at all equal to their productions in private gardens. This no doubt is partly owing to the unsuitability of the large houses common in private gardens and the mixed collections of plants which have usually to be grown in them. Fancy-trained specimen plants, such as standards or trellis-trained, are of very little use for producing spikes for cutting, the best plants for this purpose being grown three in a 6-inch or one in a 4½-inch pot. I prefer sowing the seed directly into the pots in which the plants are to flower, as repotting, unless done with great care, often gives the plants a check from which they never recover. If the proper soil is used, the pots well drained, and watering carefully carried out, there is no fear of the soil becoming sour or stagnant. The soil I prefer is half loam and a quarter each of well-dried and decayed cow manure and lime rubble from some old hair plaster if possible. The loam should be at least six months stacked, free from common worms, which would on block the drainage, and from wireworms and

other grubs. Lime in some form is an absolute necessity, and no kind seems so acceptable to the plants as that from old plaster. Two sowings, one made about the third week in July and the other a month later, will be sufficient for winter and early spring flowering. Of varieties, I like Miles' Hybrid Spiral best of all, though Garraway's White is also an excellent kind. These two branch out and give useful spikes in addition to the main growths. Machet is a great favourite with all who like very large spikes, but it is not nearly so useful as the others, as it does not branch freely and is practically over when the leading spikes are past their best.

When the plants are flowering freely a little weak manure water will be helpful to them, but it requires more care in its application to Mignonette than to most things. Soot is sometimes recommended for mixing with the soil, but is scarcely necessary, and should be left out unless it has been formed from good coals and stored for some considerable time before using. New or bad soot burns the roots and injures the plants.

J. C. TALLACK.

Thomsonia nepalensis, from Nepal, is new to cultivation, and those interested in Aroids will find several plants in full beauty in the stove at Kew. It bears a strong scape, and one notices the variety of colouring in individuals; sometimes the scape is mottled with silver on a deep chocolate ground, whilst the spathe is pale creamy yellow; the spadix stout, upper half of this colour, the lower portion more of an orange tone. It is interesting, but not to the same extent as *Arisæma speciosa*. The *Thomsonia* is, however, worth growing, as the colouring of the scape is pleasing and the spathe is bold and handsome.

Anthurium Scherzerianum.—T. Reed sends me one of the finest spathes of this plant I have ever seen. It measures upwards of 6 inches in length, and more than 4 inches in breadth, thick and fleshy in texture, and brilliant dark scarlet in colour, the spadix being orange-yellow. This differs materially from the first plant that ever came to the country, and which flowered with me at Kew in 1863. Mr. Reed says it is by far the best of the seedling forms which he has raised.—W. H. G.

Tropæolum Ball of Fire.—This is a delightful climber for the plant house in the winter months. The flowers are produced in great profusion, and their vivid scarlet colour creates a brilliant effect. At Syon House it is grown largely, and this variety is useful not only for the mass of colour, but the individual flowers may be cut with advantage. There are not too many such showy things in plant houses in the winter months. Select strong shoots for cuttings, and never neglect the plants during the summer months. The examples at Syon were a few days ago a mass of scarlet, scarcely a leaf visible. Unfortunately, *Tropæolums* get much hurt by fogs, but they are not peculiar in this respect.

Thibaudia acuminata.—It is about twenty-five years since this greenhouse shrub was introduced, but it was very little grown till a few years ago, when Messrs. Low took it in hand so successfully that it attracted a good deal of attention, and several notes concerning it have since then appeared in THE GARDEN. This *Thibaudia* is a very useful plant in many ways, for it may be employed to furnish the pillars or cover the wall of a greenhouse, while it can also be kept in bush form, and in this way will flower as well as when allowed to grow with greater freedom. Its usual habit is to form a vigorous, somewhat loose growing shrub, whose long arching branches are clothed with deep green shining leaves, ovate in shape, and from 2 inches to 3 inches long. The flowers, which are borne in clusters on the points of the shoots, are tubular in shape and about 1½ inches long, of a bright red tipped with greenish white. The flowers, of a thick wax-like texture, remain fresh a considerable

time. Besides the flowers, there are other notable features, viz., the pretty pink tint of the young foliage, and the large boat-shaped bracts which cover the flower cluster before expansion, and which remain persistent for some time afterwards. These bracts are of a bright pink, and consequently form a very ornamental addition to the floral display. This *Thibaudia* will strike readily from cuttings if treated much as the tube-flowered *Rhododendrons*, and afterwards the plants should be potted in a soil principally composed of peat. It is a shallow rooting subject, and one that needs a good supply of water, especially during the growing season; therefore, whether in pots or planted out ample drainage must be given it. This *Thibaudia* is a native of the Andes of Ecuador and Colombia, and most of the other species that are known inhabit the mountainous districts of South America. *T. acuminata* is also known under the generic names of *Proclesia* and *Cavendishia*.—H. P.

Amaryllis formosissima is an old-fashioned flower, as it was introduced from North America as far back as 1658. It is a useful bulb for blooming in the spring, and a large number of plants is commencing to flower freely in the gardens of Syon House. The same treatment is given as for the ordinary *Amaryllis*, the soil being kept dry during the winter, but abundance of water is supplied during the season of growth, supplemented with liquid manure before the scapes begin to rise freely. There is considerable demand for the flowers, as they are of distinct aspect, very rich crimson self colour, and effective either on the plant or when cut. Give the plants a light position, a shelf near the glass in a warm house during the growing season being a suitable spot. Always drain the pots well and use a fairly light loamy soil. When a very warm sunny position out of doors can be secured, such as a narrow border running by the side of a plant house, a good display of flowers may be expected. But the soil must be light, well drained, and the position unusually favourable as regards warmth and shelter.

Calla Little Gem.—We have seen this miniature *Calla* in gardens lately. The flowers are, from their size, useful for arrangements where the bolder blooms of *C. æthiopica* are out of place, and plants in full flower can be used for decorations even for the table, such as a centre adornment. It requires the same treatment as the ordinary *Calla*, and flowers freely, whilst the growth is rapid and robust. We should think that it will be as much grown as any of the much-praised yellow *Callas*, as the flowers are ivory-white, as in the type, and therefore suitable for positions for which the large-growing form is too large. Possibly it would make a good window plant and be serviceable also for small conservatories.

Greenhouse Rhododendrons.—These plants require a trifle more warmth than one usually finds given them through the winter and spring months. This is given them in Mr. Williams' nursery, and the following kinds were recently very beautiful: *R. Favourite*, flowers of a soft satiny rose, the throat white, which is finely set off by its crimson stamens; *R. President*, large flowers of a rich yellowish buff, tinted with rose towards the margins; *Princess Alexandra*, with a long slender tube of a pure waxy white; *Taylori*, with bright pink flowers and white tube; and *Williamsi*, a fine showy hybrid, with large trusses of pure white flowers.—G.

Primula obconica.—It is interesting to notice how greatly this *Primula* varies from seed. In the gardens of Gunnersbury Park, Acton, it is grown largely and the plants are in full bloom, displaying considerable variety both in size and depth of colour. Some of the flowers approach very closely in size those of the ordinary Chinese *Primula*, and in time, we think, they will be of similar fulness and breadth. A good selection is of much value for blooming throughout the winter months, and the fine forms in cultivation now are very different from the small pale-coloured flowers that one saw a

few years ago. *P. obconica* is very easily grown, exceptionally free and continuous in bloom, and the flowers are also useful for cutting.

Primula floribunda.—This pretty little Indian Primrose, the subject of a coloured plate last year in THE GARDEN, will, in a greenhouse and away from the dense sulphureous fogs of the London district, flower nearly, if not quite, throughout the winter and continue for months afterwards. This, combined with its other desirable features, renders it worthy of a place among the best of the tender Primroses. The specific name of *floribunda* is well bestowed upon it, for though the flowers are not large, they are borne in the greatest profusion. It will continue to flower till quite exhausted, after which the better plan is to throw the old plants away, as young seedlings will give far more satisfaction. Seeds are very freely produced, and if sown as soon as ripe they germinate readily; so much so, that if they are not gathered, the young plants may be often seen growing in the soil of the neighbouring pots.—T.

Viburnum plicatum forced.—The Guelder Rose may be occasionally seen forced into bloom, at which time the globular masses of pure white blossoms are very distinct from anything else so treated; but a second species, the Japanese *Viburnum plicatum*, is also equally suitable for the purpose. True, neither of them must be hard forced, but in little more than an ordinary greenhouse they will be in flower by this time, while the Japanese species arrests the greater share of attention by reason of its being far more uncommon than the other. *V. plicatum* is characterised by a spreading habit of growth, deep green wrinkled leaves, and by the profusion in which the balls of creamy white flowers are borne. It is one of the most beautiful of our outdoor shrubs, as well as a desirable plant for flowering under glass.—H. P.

AZALEA CALYCIFLORA.

THIS is a wonderfully pretty little Azalea, and at the same time a very uncommon one. From a botanical point of view it is regarded as a variety of *A. amœna*, and except in colour it very much resembles that form known as *A. amœna* Caldwelli, which is distinguished from the ordinary *A. amœna* by being of more vigorous growth, while the flowers are about double the size. *A. calyciflora* has just the same Hose-in-hose conformation of the flower, but the colour is a bright orange-red, of much the same tint as *A. obtusa*, another pretty little form. In this the calyx is not particularly prominent, so that it is perfectly distinct from the other. There is a form of *A. obtusa* with white blossoms, which are, however, occasionally striped with red. These little Azaleas together with the various hybrids, between some of them and the larger-flowered kinds form a very pleasing change from the numerous varieties of the Indian Azalea, which are now very prominent in many gardens. Whether grafting is necessary or not, the fact remains that nearly the whole of the Azaleas sent here from the Continent are grafted on to stems 6 inches or 8 inches high, which, especially in some varieties, give them a very stilty and artificial appearance, while in the case of these small forms grafting is much more reprehensible, unless it is done close to the ground, and for this there is no actual need, as cuttings strike root very readily and quickly form neat bushy plants. If the plants have after flowering been placed in a little gentle heat to encourage their growth, the shoots then produced will strike root with even greater freedom than those which are grown in the ordinary greenhouse or out of doors. The shoots should be taken when they are in a half-ripened condition and dibbled without delay into well-drained pots filled firmly with sandy peat, as if the cutting is allowed to flag it is often very difficult to freshen it again. As these smaller Azaleas are not strong growers, the entire shoot is usually of a very convenient length to form a cutting, and it is better when pulled from its socket with a side twist than if cut off with a knife. After the cuttings have been inserted they should have a thorough water-

ing, and must then be kept close either in a propagating case or by covering with a bell-glass till rooted. Till this takes place they should be kept in at least the same temperature as that in which they have grown, and if a few degrees warmer the action of rooting is greatly hastened thereby. When struck they must be inured to the air of the house and then potted off into small pots, using as a compost sandy peat. If kept in a growing temperature they will form nice little plants before winter. H. P.

SHORT NOTES.—STOVE AND GREENHOUSE.

Plumbago capensis alba.—This is a useful greenhouse climber, and when treated to a little stove heat in the winter months, it blooms freely when white flowers are highly desirable.—W. H. G.

Begonia glaucifolia splendens is an excellent variety for growing in a basket for the greenhouse. The growth is remarkably compact and hides the basket, the flowers being produced in dense racemes, and of a light crimson colour, margined with white. If it has a fault, it is a too rigid growth, but in a basket plant that is required when the plant house is none too large. This *Begonia* is used thus in the greenhouse at Kew.

Burchellia capensis.—This is an old stove evergreen shrub from Cape Colony, not much grown, and little known, I suppose, by the majority of gardeners, or we should assuredly see it more frequently in collections. At this season of the year its scarlet flowers are most welcome. The plant is a near ally of the *Gardenia* family and thrives well in rough peat and turfy loam made sandy.—W. H. G.

CHRYSANTHEMUMS.

SPRING WORK AMONG CHRYSAN- THEMUMS.

THESE plants have made surprising progress through the mild weather of the past week or so, and if the collection be large, there is much work in doing the necessary potting. It is advisable to give a shift onwards before the small pots become filled with roots, and also to give a thought in the early stages as to the size of pot each plant is to flower in, so that the successive sizes may be right. Thus a plant which is to have a 9-inch or larger pot in its final stage may at first have a 3-inch pot, then a 6-inch pot. One that is to finish in an 8-inch pot may go into a 4½-inch pot, the next shift being its last, and if it be decided to grow more than one plant in a pot, place two at once in the 6-inch size. Loam should form the greater proportion of the compost, with leaf-mould to lighten it, as well as a bit of good rotten manure. Charcoal, broken small, is capital material to keep the soil sweet and open; the same may be said of brick rubbish from the builder's yard. I find road grit equal to sand to mix with the above, and if soot, bone-dust or artificial manures be used, do not be too free with them, or far from satisfactory results may follow. Soot is a first-rate fertiliser, but if the soil be over-charged with it, the roots will not run freely. A 5-inch potful to two bushels is ample. Twice that quantity of bone-meal will not be too much, and do not by any means go beyond the quantity recommended by the respective introducers of what are known as artificial manures, for which most growers have a particular fancy. After potting has been done, keep the frames closed and shaded for a few days, sprinkling the leaves each morning and evening, then gradually give air until the plants can have the benefit of all sun and air, just protecting them

from much wet, cold draughts, or frosts. In this way a sturdy growth will be encouraged. The time that quite open-air treatment may be given depends upon the weather, but I think it is not generally safe to dispense with the frames until the end of April, and even then the plants should be so placed that protection at night may be easily provided. A very good plan is to take away the frames and put at each corner an inverted flower-pot on which to rest the glass lights only in case of ungenial weather. Watering must, of course, not be neglected, and an occasional sprinkling over the leaves is beneficial to the plant's health. The question of stopping is one that requires some thought thus early in the season. Where the cultivator is desirous of growing bush plants for a quantity of cut bloom, all that is necessary is to pinch out the tip of every plant when about 6 inches high, but when the choicer exhibition sorts are grown, and the wish is to obtain blooms of large size at a given time, then the affair becomes more serious. The raisers of Chrysanthemums, and especially those from America, are producing kinds of noble build and colour, which, if cultivated on the natural method—that is, a certain number of shoots to grow unchecked except by the formation of flower-buds—will award the grower with anything but a perfect bloom of the florists' type. Take for example the oft-mentioned Mrs. F. Jameson, or Mrs. E. W. Clarke. If grown on a single stem up to the first break resulting from the appearance of a bloom-bud, and then selecting three shoots to give crown buds in their turn, the first of these varieties will give an almost single flower and the last a flower certainly double, but comparatively small and very late. But if they be grown as single stems and the first bloom bud secured during July, they would be (unless struck late, say in March) so early as to become useless for November shows. To aid us in this matter the tip of the plant may be taken away during April, the requisite number of shoots be selected, and we may hope for the flower-bud at a useful time. Sorts likely to succeed in this way are, Lord Brooke, Harry May, J. S. Dibbens, Robert Flowerday, The Tribune, Waban, Ruth Cleveland, in fact any of the Japanese kinds which have a tendency to produce flowers with a scanty number of florets. I hear from the raiser of Beauty of Exmouth that a similar treatment to the above is likely to give the larger bloom of this now noted sort. Some varieties, again, may be headed back in April for an opposite reason, that of retarding naturally early bloomers. A very good example is Refulgens. In the ordinary way a crown bud results in an October flower, and a late bud one that is too small. Pinch out the tip as advised, take up one stem and the first break becomes delayed. The next may be expected to appear at a very good time, namely, August.—H. S.

—The earliest batch of plants, which range from 4 inches high to 1 foot, should now have a position in a cold frame placed in a sunny spot away from east and north winds. Here they will grow more robust than in a cool house, no matter how close they may be placed to the glass. Where the plants are drawn up weakly in their early stages the best blooms cannot be expected from them. In our case a thick bed of coal ashes is placed inside the frame to raise the plants near to the glass, and as growth proceeds the ashes are lowered accordingly. I attach great importance to this detail, and think the small amount of trouble involved is repaid in having the plants more stocky in consequence. The altered conditions of the plants in the frame as compared to

those in the cool house necessitate care in supplying them with air sparingly for a few days until they become accustomed to the change. For instance, no one would think of opening the lights wide the first day the plants are placed in the frame, nor would he think of admitting air freely on the same side as that from which the wind is blowing freely, especially if it be from the east, as is so often the case at this time of the year. Air should be admitted cautiously at first, or the leaves will lose some of that density of colour so pleasing to the cultivator. Water, too, must be applied to the roots judiciously; on no account allow the plants to suffer from want of it. In all cases it should be tepid. The plants now growing in $3\frac{1}{2}$ -inch pots will very soon require a shift into larger; those $5\frac{1}{2}$ inches will suffice, as from these they will be transferred to those in which they are to flower—9-inch—this size affording ample root space for any variety. The compost should consist of two parts loam as fibry as possible, one part of leaf-mould, or the materials from a spent Mushroom bed, sand and crushed charcoal according to the state of the loam, heavy or light. To every bushel of the compost add 2 lb. of some tried artificial manure.

Pot the plants firmly, and if the soil is moist when used, as it should be, water will not be required for two or three days. Keep the frame rather close for a few days after potting until new roots have formed in the new soil. Abundance of space should be allowed between the plants. A sharp look-out must be kept for aphides and mildew; the former, both green and black, infest the points of the plants, and if neglected quickly cripple the growth.

Now is a good time to top varieties like Mrs. Falconer Jameson and Mrs. Alpheus Hardy, which when managed on the usual let-alone system do not bloom at a time suitable for all shows. If the plants are managed on both methods, no difficulty will then be experienced in securing good blooms. In some seasons certain varieties exhibit a tendency to premature bud formation. When the plants are but 6 inches high a flower-bud will form at the point of the shoot, thus checking the free growth. No time should be lost in removing the cause of the irregularity and thus inducing other growths to push from the nodes below. The plants this season seem very free from this trouble. Those representing the Queen family are generally the worst in this respect. The dwarf growing sorts like Avalanche, for instance, show the first bud much earlier than those of taller growth like Belle Paule or Fair Maid of Guernsey. Where the plants are struck early in December some will make their first break in the early part of April. Prompt attention in removing the bud at the point of the plant and selecting three of the most promising shoots are necessary, so that the plant is not weakened by making so much superfluous growth. Too many persons neglect the early disbudding of the shoots; whereas I prefer to take them out directly they can be handled, thus concentrating the whole energy of the plant into the selected shoots, which in time will produce the blooms, one on each branch. The plants selected for bushes and which had their tops removed a fortnight since are now pushing out vigorous side growths. Unless extra large bushes are required, it is well to restrict the growths to about four on each; these will in time multiply considerably and produce a number of branches, thus obviating the necessity of crowding while the plants are in a young state. —E. M.

Chrysanthemum Mlle. Lacroix.—This Chrysanthemum alluded to (p. 183) well deserves all that can be said in its favour, for it is of good free growth, retains its foliage well, and if it is not disbudded the heads of blooms are very beautiful, as the partially drooping florets impart a light and elegant appearance to the whole. For cutting it is one of the best, as the stems are sufficiently stout to maintain the flowers in their proper position, instead of bending over, as many varieties do. The variety in question was distributed by Lacroix in 1880, but at that time Chrys-

themums had not attained the popularity of the present day, and consequently it took, as a rule, two or three years for any particular variety to become generally known in this country. Such being the case, the fact that it was not certificated by the Royal Horticultural Society till November 13, 1883, is thus accounted for. It was on this occasion shown by Messrs. Jackson, of Kingston, who at that time used to prove a good many of the new French varieties. The following year, under the name of La Pureté, it again obtained a certificate from the Horticultural Society. This variety has been pretty prolific in sports, the first to which general attention was directed being one in which the white of the normal form had given place to a pleasing shade of mauve-pink. This appeared in 1889, and was known by the names of Pink Lacroix, Annie Clibran, and J. R. Pearson, the first mentioned having the preference in the catalogue of the National Chrysanthemum Society. It is, of course, very useful for the sake of variety, but will never attain the popularity of the type. Last year a yellow sport was distributed under the name of Mr. Charles E. Shea, which bids fair to be a very useful variety; while in the autumn I saw a pretty form in which the partially expanded centre was far more suffused with sulphur than in the original, and the contrast between the yellow and the pure white of the exterior of the flower was strongly marked.—T.

HAIRY CHRYSANTHEMUMS.

UPON perusing the American and Continental lists we may very confidently assume that hairy varieties are destined to be the new craze. Next autumn, no doubt, a large number of those announced for distribution this spring will have been introduced into the nurserymen's collections here, and if they flower at all satisfactorily and please the public taste, will be freely distributed to the general body of growers during 1894. We may reckon that the total at present cultivated in this country does not exceed seven varieties, viz., Mrs. Alpheus Hardy, Louis Boehmer, W. A. Manda, H. Ballantine, Miss Annie Manda, William Falconer (syn., Patrick Barry), and Spatel, all of which have reached us from America. The French, however, have now taken up this section, and are offering a goodly assortment, to which reference may be made in fuller terms at some future date. My object at the present moment is merely to place on record a few facts concerning a further instalment of American hairy Chrysanthemums, and the first to receive attention is Zambesi, which is stated by Messrs. Nathan Smith and Co. to be one of their own seedlings, resembling W. A. Manda in its hairy petals, colour yellow, like W. H. Lincoln, with foliage similar to that of Mrs. Alpheus Hardy. In Messrs. Pitcher and Manda's set of 1893 novelties there is a pink hairy variety called Mrs. William Trelease, described as one of the finest of this type. An illustration of it is given in the English edition of their catalogue, and also in the *Rural New Yorker* for 25th ult. Unlike the French raisers, the Americans offering varieties with hairy petals are in the minority. A miscellaneous collection, however, which appears to have been made up in Japan and California for an eminent American importer contains several sorts specially mentioned for their hairy peculiarity. These are named King of Ostrich Plumes, yellow; Virginia, purple; Golden Ostrich Plume, yellow; Oriental Beauty, pink; Pacific, silvery pink. The mere names of some of the flowers in this collection suggest their genuineness, and indeed it looks almost like starting on a new road—I mean the adoption of the real Japanese name for the flowers in English. Thus, Harvest Moon, Golden Gate, Imperial Favourite, Silver Brocade, Royal Brocade, and Master of the Garden have a distinctly Oriental flavour about them. Surely there is no valid reason why the Japanese name should be entirely wiped out and new American or English names be given in their stead. Some of the Eastern names are so pretty and fanciful, that it would be far

better were they retained on that account if for no other. If my suggestion be adopted, we should have much less confusion in the nomenclature of plants imported from Japan, many of which having been introduced through three or four different agencies have been given as many names.

Most of the hairy sorts enumerated in this American list are described as being very fine examples of the section to which they belong. It will be noticed that the colours of the new-comers, so far as can be judged by verbal description, differ very little, if at all, from those varieties with which we are already familiar.

C. HARMAN PAYNE.

Chrysanthemum Volunteer.—I note in your issue of December 10 an article signed "H. S.," whom I believe to be in error, as Volunteer, imported from Japan by Messrs. Henderson and Co., was named and distributed by them before it appeared in England, and never went under the name of White Elephant; neither is it a white. His other disparaging remarks regarding it are unfortunately too true. To the discredit of the trade, there are one or two firms on your side that almost every year take up some two or three varieties sent from here a year or two earlier, re-name, and distribute at high figures. For instance—

American name.	English name.
Mrs. F. Thomson	W. G. Drover
Robt. Bottomley	Lady Lawrence
Christmas Eve	Mrs. Cannell
Mrs. J. N. Gerard	Mrs. Dunnett
Thistle	Miss Carter
Nineveh	Wm. Tricker
Mrs. F. A. Spaulding	J. S. Dibbens

—F. H. SPAULDING, *Castlenood, Orange, N.J.*

Chrysanthemum Mrs. Falconer Jameson.—Mr. Young (p. 183) mistakes what I say regarding the method of growing this variety, but perhaps I was not quite plain in speaking of this Chrysanthemum and its peculiarity. I really meant the "ordinary method" for this particular variety, which is that of allowing each plant to produce one bloom only, securing the first bud that forms during the month of July. Three plants are grown in each pot very often; therefore the loss of one bloom only to every pot is not felt. This is the "ordinary method" practised by many cultivators, and is the best for producing the finest blooms of this particular variety, but, as stated, they are, as a rule, too early for the shows, in the south at any rate.—E. MOLYNEUX.

A black Chrysanthemum.—We have all heard of the blue Chrysanthemum, and know that a green one is cultivated in Japan, having originated there about a quarter of a century ago. Mr. F. T. Piggott, in his book called "The Garden of Japan," remarks upon it as follows: "At one of the shows in the neighbouring village I have just seen the very latest triumph of horticultural art, a Chrysanthemum with a small flower of vivid apple-green. This was its first appearance in public, and larger flowers are promised in a season or two." It, however, has never yet occurred to any of us to expect a black Chrysanthemum, yet such a novelty has been imported from Japan—at least, so says one of our American growers. A variety called Black Gem is stated to be a rare sort imported from Japan as a black Chrysanthemum. It is only fair to warn hunters after novelties that it is only black or almost black when opening and changes to deepest crimson when fully expanded.—C. HARMAN PAYNE.

Stopping bush Chrysanthemums.—I agree generally with "H. J." in his advice to "A. E." re growing plants for conservatory decoration, but differ from him in the matter of pinching the shoots. I have to provide a good general show of Chrysanthemums, and bush plants for conservatory decoration form no mean part. Now, instead of taking out the "tips" of the shoots after they have grown 6 inches high, I take off a good portion, the breaks being all the stronger

for it, and the same course is taken at the next stopping. By treating them in this manner the shoots are stronger and are kept nearer the base before starting into their final growth. By taking off merely the "tips" the growths will elongate considerably before branching out, and when they do they are fewer and not so strong as when shortened well back. By merely taking out the "tips" the plants do not assume such a nice habit of growth. If I were growing large trained plants for exhibition, the tips only would be taken, but at the time these were taken the growths would be brought down, and consequently more shoots would break further back. —A. YOUNG.

AMARYLLISES AT THE ROYAL EXOTIC NURSERY, CHELSEA.

FOR the past three weeks there has been a magnificent display of this gorgeous spring flower in these nurseries, and for weeks to come it will continue, as there are many spikes that are as yet only partially advanced. The remarkable progress from year to year in the quality of the flowers, in the distinct colours and in the vigour of the plants is simply astonishing to those who can call to mind the best varieties of ten years back. It would hardly be possible to point to any class of plants in which such an advance has been made. The triumph of the hybridiser is so plainly shown, that all must acknowledge the success achieved. One noteworthy feature of the plants now flowering is that some 90 per cent. are doing so for the first time, the bulbs being from three to four years old from seed. The seedlings have been flowered in less than two years, but this is exceptional; a fair number can be had in bloom under three years (about two years and six months), but it is all the better, in my opinion, for the future well-being of the bulbs if this even does not occur. Supposing the seed to be sown in August or September, the best results are to be ensured when the bulbs flower at about three years and six months from that time. This permits of the bulbs attaining that vigour so necessary to aid in the development of fine spikes of flower without weakening the future leaf-growth. Having seen this magnificent exhibition of Amaryllis now for several seasons in succession, we have no hesitation in saying that the present display is the finest yet seen, fine as others have been. There is a marked advance in the vigour of the plants both in flower-spikes and leaf-growth. Some of the former carry as many as five flowers to a spike and two spikes to the plant; several have four flowers each and two spikes. With respect to the foliage, the marked feature is the short, but broad leaves that the majority possess. In all there are now some 3000 or more spikes in various stages of development, making such a display as can be hardly described.

The following are a few of the finest as seen a few days back, viz. :—

Pompadour, brilliant scarlet shaded with orange, having broad petals, and each flower 9 inches across, with a distinct green star in centre; Lustre, another brilliant scarlet with a well-defined white star; Nyanza, deep scarlet shaded with rose, the flowers of fine form; Vedette, an extra dark velvety crimson self, with bold flowers; Smollet, a scarlet self, darker at base, a very brilliant colour; Phormis, crimson with distinct large starry centre, very vigorous; Calabar, a deep crimson self with large flowers; Cortona, bright orange-scarlet with greenish white starry centre; Talleyrand, velvety maroon self, very fine and remarkably distinct; John Ruskin (an older var.), orange-scarlet with green eye and very bold flowers; Sardius, dark crimson of very superior form, with green eye; Inimitable, light scarlet with large flowers; Coracle, dark scarlet with darker star and finely-formed flowers; Orion, of extra large size, dark crimson, with green star; Vandyke, vermilion pure self colour, deeper at base; Rownon, carmine shaded orange, distinct star and of superior form.

The foregoing are of the darker colours. Of the lighter and light ground forms particular note should be made of Rosalind, with light centre and orange-scarlet veins; Princess Mary, veined crimson, with light star running out through the centre of the petals, a vigorous and bold variety; Sylph, veined pale orange-scarlet on light ground, having eight flowers to two spikes; Princess Marie, a distinct pale primrose, with dark crimson veins on upper petals; Phyllis, large flowers, lightly veined with scarlet on a pale coloured ground; Titan, salmon-pink, quite distinct in its colour, with a light starry centre; Lavinia, almost white ground colour, with faint trace of green and maroon veins; Meteor, a very bright variety, with light ground and orange-crimson veins; Cherub, a light variety, veined with dark crimson, bearing two spikes and ten flowers. Besides these, note should be taken of the five splendid seedlings to which certificates were awarded at the last meeting of the Royal Horticultural Society, for which see last week's issue.

The plants at Chelsea are plunged in spent tan as soon as they are repotted in the spring; a little later on a gentle bottom-heat is given by means of pipes under the plunging bed. The top heat or temperature of the house is only what may fairly be termed that of a temperate stove, with no excess of moisture either in the atmosphere or at the roots.

NOTES OF THE WEEK.

Daffodil Golden Spur is in full bloom at Kew. It is one of the earliest of the trumpet section, the flowers very large and of a rich yellow colour. A large bed of it near the pond facing the Palm house shows the value of Daffodils when planted in a mass of one kind.

Shortia galacifolia is flowering in the hardy plant house at Kew. We hope to see this beautiful plant become common. It is very charming for pots, the leaves almost crimson in colour, the flowers white, like those of an enlarged Soldanella, and freely produced. A coloured plate and full description of it appeared in THE GARDEN, Aug. 30, 1890.

The new **Filmy Fern house** at Kew is an additional feature of interest to the Royal Gardens. It is not yet open to the public, but will, we believe, shortly be so, and those who care for this class of Ferns will find an interesting collection. One notes with pleasure the increased attractiveness of the indoor department at Kew. Several distinct improvements have been made in quite recent years, and the old-fashioned, unsuitable houses are giving way to better structures.

Dowlingia pulchella is a charming plant in bloom in the temperate house at Kew. It is one of the most delightful things we have seen, and flowering, we believe, for the first time. The flowers are very much like those of a bedding Lobelia, distinctly lobed and rich blue, the centre yellow, with a broad band of white outside, the colouring remarkably well defined. On the yellow centre appear three rich lake-coloured spots. There does not seem to be much leafage, but the flowers are sufficiently attractive. It is a useful pot plant and a native of Chatham Island.

The **Tenby Daffodil** is well worthy of a note as one of the very best kinds for planting in the Grass, or, indeed, naturalising anywhere. About seven years ago a large group was planted on a rather steep slope beside a lake, and since that time it has never failed us; whilst during the past week the rich glow of colour the group has made is delightful. A favourite market kind, it is no doubt plentiful and cheap, and this favours its being more extensively planted. The truth seems to be that spring flowers are trifled with in most gardens. The few that are planted are in positions where they must be rooted out or mutilated to provide for a summer succession; whereas, they should be planted by hun-

dreds and thousands in the Grass and elsewhere, being quite able to take care of themselves. The flowers of the Tenby Daffodil are longer in the stalk and finer towards the bottom of the slope, where the soil is richer and wetter. It is one of the first kinds to make a great display.

Rhododendrons in the temperate house at Kew are of note, *R. arboreum* being in full bloom; also its variety *roseum*. The type is represented by a very fine specimen, the dark crimson flowers in rich contrast to the bold and abundant leafage. It varies greatly, but the form called *roseum* is one of the most attractive. Even this varies in individuals in the shade of colour, some paler than others. *R. Veitchianum* is also in full beauty, its large waxy-white flowers, backed with greenery, standing out boldly.

Crotalaria longirostrata may be seen in bloom in the stove at Kew. It is a thoroughly useful plant for flowering in the winter months, and the specimen there has kept up a gay display for over two months, notwithstanding the fogs, which are peculiarly trying to stove subjects. This species is still in full bloom, bearing at the ends of the long slender shoots clusters of large, bright yellow, Pea-shaped flowers, which make a great show of colour in the winter season. It is easily propagated by cuttings, and all who wish for something distinct and attractive in their stoves during the so-called dark months of the year should make good note of it.

A rose-coloured form of *Chionodoxa gigantea* we noticed a few days ago on the bulb border against the herbaceous ground at Kew. It occurred in a breadth of the type, the flowers quite as large as those of the finest selection of the latter, and of a very tender rose-lilac shade, with the merest trace of white in the centre. The leaves are fully twice as broad, longer, and display great robustness. We hope this beautiful departure from the normal form will remain true to its present character. Variation in the shades of blue occur, of course, amongst *Chionodoxas*, particularly with *C. Lucilæ*, but this rosy form of *C. gigantea* is decidedly distinct and pleasing.

Spring flowers in Regent's Park.—This park in March looks as well as at any season of the year. It is full of flowers even now, and of those not usually seen in public places, such as the Winter Aconite, sheets of Snowdrops mixed with Scillas, and *Chionodoxas*. Not only are they mixed together with exquisite taste, but each kind is represented by bold breadths, Crocuses (purple, gold, and white) hiding the Grass with their flowers, but without garish effect. This kind of planting might be easily overdone, or made ugly by injudicious association of the several things, but in Regent's Park the whole is well carried out, and deserves high praise. This is the only park in which the edgings to the beds are different from those usually seen. Good use is made of the London Pride, mossy Saxifrage, Stonecrops, and other edging plants of distinct character and beauty.

Morisia hypogæa is one of the most interesting hardy plants in bloom at the present time. A specimen of it may be seen in the hardy plant house at Kew. It was through M. Correvon, of Geneva, that this comparatively unknown species was introduced to notice, although first sent over about the year 1833 from its native home, Sardinia and Corsica. It forms a rich green tuft of Fern-like leaves, which are stemless, and form a rosette-like arrangement on the surface of the soil. The flowers, produced from the centre on short stems, are of a brilliant golden yellow colour, in rich contrast to the leaves. It may be got from self-sown seedlings, or the seed can be sown under glass, whilst cuttings taken in the summer months strike freely. A delightful alpine for pots, but it is quite hardy on the rockery. A coloured plate of it was given in THE GARDEN, September 12, 1891.

Bauhinia candida is a lovely flower, and may be seen in the Palm house at Kew. It is an old plant, having been introduced from the East Indies as far back as 1777, but is very rare. The genus

Bauhinia belongs to the Leguminosæ, and one species, *B. variegata*, has been in English gardens since 1690. The flowers of *B. candida* may be compared to those of a *Pelargonium*, as they are much like those of an enlarged bloom of that plant, and they resemble somewhat those of the *Fraxinella*, but much broader and bolder. The specimen at Kew is blooming freely, and carries its flowers in clusters produced from the leaf axils, whilst the largest we measured was fully 4 inches across, pure white, except for a suffusion of green on the central upper segment and a delicate veining of the same colour on the other segments. This rather adds to than detracts from the beauty of the flowers, which also exhale a very delicate fragrance. The leaves, not unlike those of the *Tulip Tree* in character, are of a pale green colour.

Poppy Anemones from Ireland.—Miss Reeves sends us a handsome bunch of these from Tranmore. The south of Ireland seems very favourable to their good culture, and they are very showy and delightful; but we think it would be much better to pick out select races of good colours than be content with the usual mixture, some of the colours in which are not pretty from an artistic point of view. People now-a-days are very particular about colour, and will not admire everything because it happens to be big or showy. These are called "giant *Victoria Anemones*," and we often get them by other sorts of names, but they are really the old *Poppy Anemone* of our forefathers, which do not want any new name. The notion of giving such plants new names is quite fallacious. It is the common single *Poppy Anemone* varying a little, but simply through difference of cultivation or the raising of seedling or other plants in fresh rich ground. We hope none of our readers will again deviate from the true name of this *Anemone*, one of the oldest flowers in our gardens—*A. coronaria*.

Chionodoxa Alleni.—We send you blooms of the new *Chionodoxa Alleni* found and so named by Mr. Edward Whittall, of Smyrna, last year. The flowers sent you, large as they are, are from small collected bulbs planted last autumn, and therefore cannot be fairly judged. There is no doubt, however, that it is a finer variety than *Chionodoxa gigantea*. Some of the blooms even this first year measure about 2 inches across. We hope to send you still finer specimens of this next spring when the bulbs are established.—BARR AND SON.

—The above *Chionodoxa* is flowering for the first time this year, we believe, and promises to become a leading variety. It was collected by Mr. Whittall, of Smyrna, and named in compliment to Mr. Allen, whose name is so closely identified with the *Snowdrops*. Of course it is not fair to judge of the plant from small collected bulbs, but the flowers are larger than those of *C. gigantea* or *grandiflora*, the petals somewhat narrower than in that type and lighter in colour. It is in flower with Mr. Ware at Tottenham. We should think that this will prove to be a most beautiful form, bright in colour, large, and in every way a thoroughly useful garden bulb. We should like to hear reports from those who have it as to its merits.

Senecio sagittifolius.—This, now in bloom for the first time at Kew in the Cape house, is likely to prove one of the finest species in this vast genus. Mons. Ed. André introduced it from Ecuador into France, and he described and figured it in the *Revue Horticole*, 1892, t. 16, 17. The specimen at Kew is small, but displays great vigour and distinctness of character. The whole aspect of the plant is one of extreme vigour, the leaves of large size, according to descriptions over 3 feet in length, 12 inches in width, of sagittate shape, and toothed at the margin, whilst the midrib is distinct. The leaves on the plant at Kew are not, of course, of these dimensions, but they are of great length and breadth. The flower-stem rises from the centre of the rosette-like arrangement of the foliage, on which appear erect leaves; the stem is downy. The flowers are crowded thickly into a corymb, and in the mass are very beautiful, although the colour is not striking. They are broad, something like those of *S. pulcher* in form, and creamy white

with a bright yellow disc. A description of it from Mr. Watson appears in *Garden and Forest*, Feb. 22, 1893 (p. 90), where he mentions that a specimen grown in the open air in Touraine last year developed leaves a yard long. It was removed into a temperate house for the winter, where it produced a stem 8 feet high. This had a corymb of one hundred and forty flowers.

Notes from Almondsbury.—Looking to-day at clumps of a small double *Daffodil* in an old garden in this district, the owner told me he got them all out of a wood here eleven years ago when they were all single. I saw also clumps of *Snowdrops* from the same wood, which is rich in the wild *Hellebore*. *Hepaticas* have been most beautiful this year; the size of my blooms is very marked. Many are larger than *angulosa*, of which my experience is that it will ramble and bloom but sparsely. Ten blooms on a plant is a good average with me; whereas one hundred blooms on my seedling plants is quite a common number. For the encouragement of those who wish to try these most lovely flowers, let me say that, unlike Mr. G. F. Wilson, I find any position suits them. I have some in shade, some that get all the morning sun, some all the afternoon; only one thing is essential: a deep root-run. Out of a few blooms just gathered I find some cover, *i.e.*, the tips of the petals touch the rim of a four-shilling-piece, but the average flower covers a penny-piece. As these flowers have long stalks, hold their heads up, have pure colours, some perfume, and come early, I think all should try to obtain them. The label question is still a serious one with me. When I last looked at the Kew labels—zinc, with a coat of paint and enamel—I did not think they were lasting well at all. May I suggest one of my own: $\frac{3}{4}$ -inch wood labels planed smooth, written on with a poker. The poker with all necessary apparatus costs 10s. 6d., and is much used at the present time for ornamenting wood. I find it very easy to write any name with, and I should hope the name would remain legible as long as the wood will last. Any wood would do, Ash or a white wood for choice.—C. O. MILES.

Notes from Upton Rectory.—The double blue *Hepaticas*, such as I sent you, are of great rarity with us, and I am not aware of any garden but my own where they are to be found. They are very fickle and impatient of removal. I had four clumps; two died out, as has been the case in two other gardens where they used to be found. I gave Mr. Peter Barr a fine clump two years ago, and advised him to be very careful with it. He was delighted with it, and said he had never seen anything so beautiful. Whether he has been successful in dividing it or in keeping it alive, I cannot say. I have only one very fine clump left, but I dare not touch it, as if I lost it, I do not suppose I should be able to replace it. As the day is fine, I am going to a garden some six miles from here, on the Downs, where there used to be some plants, but I am not certain whether I shall be successful. There are other double blue *Hepaticas* sold by florists, but none so fine as these. I find that the blooms expand greatly in water. Two years ago I had some bulbs of *Crocus Imperati* sent to me from Italy. This year they have been singularly beautiful. A month ago my cousin's gardener from Ravello, overlooking the Bay of Salerno, sent me a box of golden Ivy, *i.e.*, the berries are bright orange. I am striking some. It is very handsome. I suspect it is *Hedera baccis aureis*, which Pliny says was used to crown the poets. I hope it will fruit in England. I have several kinds of Ivy.—R. HOOPER.

* * * Very beautiful and large double blue *Hepatica* blooms came with this.—ED.

Mr. Hooper writing to us again on the 21st says: "I went yesterday to the old garden on the hills, but the master was dead, and the double blue *Hepaticas* had died out. There was one little sprig with one flower and no leaves, and that will soon disappear. I was disappointed in not getting you some roots. However, I had a delightful walk, and went down Streatley Hill to Goring

Station, and came home by train. The day was beautiful, and the hedges bright with *Celandine* and *Violets*. I thought how beautiful the *Celandine* would look in a wild garden; it is far brighter than *Winter Aconite*. Have you white *Borage*? I had some seed from Italy, and it is very pretty as a variety. A neighbour in this village has raised several plants of the Deptford Pink (*Dianthus Armeria*) which he found in the neighbourhood of Ashampstead Common."

Good Apples in spring.—We have been eating Newtown Pippins of the finest quality after Saint Patrick's Day has passed. They are crisp, like a fresh Apple gathered from the tree. This Apple does not come to us from England, which is so well adapted for Apple culture, but far away in America. It cannot be grown here, but will make its mark in our fruit quality for all that, unless people can take no lessons in such matters. This Apple is of the highest quality, has splendid keeping properties, is good in every way, and it should lead us to select the very best of our own Apples and be no longer content with a lot of early sorts which are really only useful for a few weeks. True, a careful man may keep them after their natural season, but they never (however fair outside) have a tolerable flavour. We should revise our lists and be no longer content with little-known and experimental Apples, so to say. Such kinds as the Sturmer and Wellington and first-rate late Apples should be thought of more, and much attention of quite a different kind be given to the keeping. Costly, elaborate, and well-aired fruit rooms, of which we have heard so much, and with which people take so much pains are useless. A much simpler way is the true one, *i.e.*, to take a barrel or box to the tree, fill it carefully with the best fruit, graded in equal sizes as far as possible, then set the barrel or box in a cool dark cellar, if possible on the north side of a hill or house or where the fruit will get neither light nor warmth. But before coming to the barrel or the box we must get rid of the worthless kinds of Apples which waste the space of more than half our orchards and gardens.

Two beautiful winter-flowering Begonias are *Gloire de Sceaux* and *Triomphe de Lemoine*. The former of the two was shown finely at the January meeting of the Royal Horticultural Society, when a first-class certificate was deservedly awarded to it. The first time we saw this fine *Begonia* in true character was last February in the garden of Sir Trevor Lawrence, Bart., at Burford Lodge, where we noticed its rich effect in the plant house. The plant is of excellent habit, which cannot be said of all winter-flowering *Begonias*, the leaves large and rich chocolate in colour, studded with a bronzy tone—a splendid contrast to the trusses of deep rose flowers, with buds of a deeper shade. It is a bright, attractive *Begonia*, and continues to bloom freely over a long season, whilst cuttings struck in the summer will produce good flowering plants with liberal treatment by the following winter. *Triomphe de Lemoine* is another beautiful kind in the Burford Lodge collection. As in the other case, the plant has a good habit of growth and produces a profusion of crimson flowers, which, if not large individually, make a bright display in the aggregate. Winter-flowering *Begonias* are not, as a rule, either well represented or creditably grown in English gardens, but they are of the utmost value, not alone for contributing colour to the plant house, as the flower-trusses are useful when cut.

Pernettya mucronata and its many varieties are very charming in the winter season, and a good group of them adds colour to the garden. We have seen them planted in a few places well, but they are not used so much as they deserve, although not very difficult to grow, rich in aspect, and interesting for their variously coloured berries that follow the white flowers. Near London they succeed well and berry satisfactorily, the shoots being useful for indoor decoration in the winter season. It is possible to cut a fine quantity with-

out lessening the beauty of the shrubs. Purple is the colour of the berries of the type, but there is a very delicate rose-coloured form, also rich crimson, white, pink, and almost black forms. Apart from the berries, the leafage is evergreen, profuse, and pleasant to see in the winter months. The chief point is the soil, and light fibry loam is very suitable, also peat, but in loam the shrubs will succeed well. As far as we have noticed, the finer growth is made by plants somewhat sheltered, but it is not much in this way that they require. A good group should be in every large garden, and Lilies or such things as the *Galtonia* may be planted between the shrubs, as the rich green leafage provides a fine contrast of colour with the flowers of the Lily, and affords also protection to the rising stems of the latter in the spring months.

SOCIETIES AND EXHIBITIONS.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.

MARCH 22.

THE greater portion of the exhibits was, as usual, staged in the long corridor, a most suitable place for shows of this description, the remainder finding a place in the large conservatory. The present show was perhaps hardly so extensive as on some former occasions. At these early shows a class might well be provided for Orchids now in flower; a group for instance would add to the display. Taking the schedule, the following were the main features: For six greenhouse Azaleas, Mr. Scott, The Holme, Regent's Park, was first with plants of medium size, freely, but not over-flowered, and in good condition. Helen Carmichael, a semi-double white, and Duc de Nassau were two of the best. Mr. Eason, Hope Cottage, Highgate, was second with plants of similar size, but with smaller flowers. For six forced Roses, Messrs. Paul and Son were first, being the only competitors with half specimens in good condition, *Magna Charta*, *Beauty of Waltham*, and *Celine Forestier* being the best. For six *Deutzias*, Mr. Douglas, Great Gearies, was easily first with large densely-flowered plants of *D. gracilis*, Mr. Eason following with the same variety. The class for twelve *Cyclamens* brought out a good competition; the two best lots were really grand plants, large and full of bloom. Mr. Mowbray, Fulmer, Slough, was first, having both light and dark-coloured varieties in good condition, Mr. Pestrige, Brentford, following closely with a splendid strain of white. The best Lily of the Valley came from Messrs. H. Williams and Sons, Fortis Green, Finchley, who had large masses freely flowered, the plants not having been grown in excessive heat. Mr. Morle was second with good examples. In the amateurs' class for twelve Hyacinths much the best plants were shown, Mr. Douglas being an excellent first, the spikes large and robust; Mr. Eason followed with smaller examples. For twelve pots of Tulips Mr. Douglas was again first with first-rate examples, Joost van Vondel, Keizer Kroon and Proserpine being the best sorts. For twelve pots Narcissi the same exhibitor again won, *Bazelman major*, *Grand Monarque* and *Jaune Supreme* being very fine. In each case Mr. Scott followed, showing well. Mr. Douglas was also first for twelve pans of Crocuses in very fresh condition and densely flowered, Mr. Morle following with fairly good pans. In the class for twelve Amaryllises, the competition was very keen between Messrs. Paul and Son and Mr. Douglas, these well-known exponents of Amaryllis culture being placed equal first. In Messrs. Paul's lot, *Princeps*, a very fine and distinct seedling, dark crimson ground colour distinctly margined with white, the flowers of medium size, and Rembrandt, with light-coloured flowers striped with claret, were noteworthy. The latter had *Vespaian*, a very bright scarlet, with distinct starry centre, and

Knight Templar, veined with crimson on a light ground—two very superior kinds. Mr. Douglas was the only exhibitor of twelve Freesias, showing large plants profusely flowered. For a collection of hardy herbaceous plants, Mr. T. S. Ware was first, showing *Dielytra spectabilis*, *Spiræas* and *Doronicums* in good-sized plants, with smaller ones of *Anemone Pulsatilla*, *Primula rosea*, &c.

Miscellaneous exhibits constituted an important feature in the show, and were remarkably varied in character. Messrs. Veitch and Sons showed several of their choice seedlings of the Amaryllis of very superior quality, *Renown*, *Smollet*, *Princess May*, *Princess Marie*, and other distinct and superior kinds being included (see separate notes thereon). Messrs. B. S. Williams and Son made a most extensive display of Hyacinths (some 13) pots) of uniform excellence, comprising the best kinds, as *King of the Blues*, *Macaulay*, *Von Schiller*, *Marquis of Lorne*, and *Lord Derby*. Of Tulips also a fine show was made, *Van Spandöck* (feathered), *Chrysolora*, *Van der Neer*, *Cerise*, *Gris de Lin*, *Van Vondel*, and other good sorts, all well grown. Lily of the Valley and Narcissi in fresh condition were also included. Clivias were also grandly shown with huge trusses of flower, the best being *Meteor*, *Ambrose Verschaffelt*, *Robusta*, *Aurantiaca*, *Lindeni*, and their fine new variety *Scarlet Gem*. *Caragata cardinalis* (shown at R.H.S. last week), and *Rhododendron Williamsi* were also included as well as a few good Orchids, of which *Dendrobium infundibulum giganteum* with bulbs 4 feet in length, was one of the finest, the flowers being also of extra large size, of the same character as the type. A few good Cypripediums were included the best being *C. Pitcherianum* and *C. Petersianum*, two fine hybrids (silver medal). Messrs. Paul and Son had a few good additional pot Roses, of which *Paul's Early Blush*, delicately scented, pale blush colour, with large shell-like petals, was the best, being a promising new kind. Pot Lilacs were also shown here, and comprised *Mme. Le-grange*, a splendid pure white, and two double forms, of which *Leon Simon* was the finer (bronze medal). Messrs. H. Williams and Sons staged Hyacinths and Tulips of medium growth (silver medal). Messrs. W. Cutbush and Son put up a group of miscellaneous plants in flower, comprising *Azalea mollis* and other forced plants and bulbs as well as early flowering Cape and New Holland plants in profuse bloom, *Boronia*s, *Ericas*, and *Epacris* all being in first rate order (silver medal). Mr. T. S. Ware showed several pots and pans of bulbous plants (hardy) and other early flowers, amongst which the early species of *Primulas*, as *P. verticillata*, *P. Clusiana*, *P. viscosa*, *P. nivalis*, and *P. marginata*, were very good (bronze medal). A large number of *Cyclamen* were shown, the finest group being that of the St. George's Nursery Co., Hanwell, the plants of medium size bearing large flowers, the dark and other colours very rich and pure, and the whites a superior strain (silver medal). Mr. Odell also had a group from Hillingdon of excellent quality (silver medal), and Mr. Pestrige staged a finely grown lot of extra-sized plants (silver medal). Messrs. James and Son staged a grand lot of their well-known strain of *Cinerarias*, the individual flowers larger than ever, whilst the growth and habit were all that one could desire (silver medal). Some well-grown and very freely flowered *Lachenalia tricolor* came from Mr. Eason. Messrs. W. Paul and Son showed a splendid lot of cut *Camellias* and dwarf Roses in pots of their newer kinds, as *Corinna* and *Lady H. Grosvenor* (silver medal). Messrs. Barr and Son sent a number of Daffodils in good condition, a pretty pan of *Cyclamen ibericum*, and other early flowers (silver medal). A novelty in table decoration was contributed by Messrs. Ryder, Court florists, in floral decorations around menu cards, such flowers as Daffodils, Roses, Violets, and Lily of the Valley being used. This idea is worthy of more notice, and is capable of extended use. Messrs. Veitch and Sons showed a good example of *Cypripedium macrochilum*, a choice hybrid after, but distinct from, *C. caudatum*.

A complete list of awards will be found in our advertisement columns.

Gardeners' Royal Benevolent Institution.—May I ask you to kindly give publicity in the pages of THE GARDEN to the following communication, which I have received from a gentleman who has long been a subscriber to the institution:—

Sincerely sympathising with the case of John Butler and Jane E. Nichols, who have been unsuccessful candidates for the pension of the institution at the last five annual elections, it is my intention to place at the disposal of the committee, and I hand you a cheque for £36 herewith, the amount necessary to provide for the present year the allowances to which they would respectively have been entitled had they been elected in January last. At the same time I earnestly hope that special efforts will be made to secure their election on the next occasion.

I need scarcely say that this anonymous gift has been very gratefully received. Will you also allow me to say that another gentleman, who desires his name to be withheld, has handed me £5 5s. for an exceptional case of suffering and distress which was recently brought to the notice of the committee.—GEORGE J. INGRAM, *Secretary*.

Royal Horticultural Society.—The next meeting of the Royal Horticultural Society will take place at the Drill Hall, James Street, Victoria Street, Westminster, on Tuesday, March 28. At 3 o'clock Mons. Henri de Vilmorin will deliver a lecture on "The Flowers of the Riviera."—JOHN WEATHERS, *Assistant Secretary*.

The weather in West Herts.—During the past week the days have been mostly very warm, while the nights, on the other hand, proved as unseasonably cold; consequently, the difference between the day and night temperatures has been very great. For instance, on Tuesday last the highest reading in shade was 58°, but during the previous night the thermometer in the screen fell to 27°, or 31° below the maximum. This is the greatest range in temperature for any one day that I have yet recorded here in March. On four nights the thermometer on the lawn showed from 13° to 17° of frost, but no harm was done to vegetation, except to the young shoots of the Tea Roses, owing to the great dryness of the air. Notwithstanding the calm weather and brilliant sunshine, the ground at 1 foot deep is now (Wednesday) 4° colder than it was a week ago. It is also becoming dry, no measurable quantity of rain water having come through either of my percolation gauges for ten days.—E. M., *Berkhamsted*.

A note from Glasnevin.—We are looking bright now. Daffodils, Hellebores, Scillas, Saxifrage, *Dentaria*, and *Erythroniums* are blooming freely. The *Chionodoxa* has never been so good as it is this season.—F. W. MOORE.

Insects on leaves.—I am sending a few leaves with a kind of black scale on, and should be pleased if you would tell me what it is through your paper. It made its appearance about a month ago in two of the vineries. I thought at first that it must have come with the manure that I top-dressed with when I cleaned all the houses out, but what puzzles me most is that some of the other houses where I top-dressed some Orange and Rose trees with the same manure are not infected. I top-dressed with cow manure from the farm.—J. DAVIES.

* * The leaves forwarded are not attacked by a scale insect, but by a fungus, the name of which I cannot give now, but will do so next week, I hope. I should cut off as many of the infected leaves as I could to prevent it spreading. I do not think the manure had anything to do with the attack.—G. S. S.

Names of plants.—*M. Milne*.—*Dendrobium Wardianum*.—*J. D.*—*Linum trigynum*.—*S. Elliot*.—Apparently *Iris cristata*; send in flower.

WOODLAND.

THE WEeping SPRUCE.

(PICEA BREWERIANA.)

It had been my desire for the last three years to visit the group of Weeping Spruce (*Picea Breweriana*) growing on the summit of the Siskiyou Mountains, in Siskiyou County, California, and having learned this year that the other conifers in the northern part of the State were seeding, I determined to visit the grove and obtain seed if possible. In company with my father, Mr. Robert Douglas, of Waukegan, Illinois, we went to Grant's Pass, Oregon, the nearest railroad station to the grove, where we procured horses and drove the first day to Andersons, about 20 miles from Grant's Pass. Owing to heavy rains, we did not reach Waldo until about 4 o'clock next day, where we engaged a guide, saddle-horses and pack-animals, and left for the trees early the morning after, reaching the "Big Meadows," on the summit of the Siskiyou, about 4 o'clock, having travelled about 21 miles in a horizontal direction and more than one mile in altitude. Waldo is about 1500 feet above sea level, and our camping place was about 7500 feet. The trail over which we came was made by a Spanish packer for the transportation of provisions from Waldo, Oregon, to Happy Camp, a mining town in California. It is a fair trail for such a rough country, but it is not a macadamised road. We slept that night with some evergreen boughs under us and the blue sky over us part of the night, and the most dense fog I have ever seen for the remainder of the night. The next morning we walked up the trail about a mile and a half to the few scattered Weeping Spruces, about sixty in number, which had attained a height of 25 feet, at which size they begin to bear seed; but we found that most of the trees under 50 feet had very imperfect seeds. The cones are from $2\frac{1}{2}$ inches to $3\frac{1}{2}$ inches in length and three-quarters of an inch in diameter, of a fine purplish colour. They mostly grow on the extreme top and ends of upper branches. The beauty of the trees far surpassed my expectations. They have the true Spruce form, tall and symmetrical, with horizontal branches and a beautiful green colour. In their general features they resemble a well-grown Norway Spruce, but their distinguishing beauty is in their long, pliant, pendulous branchlets, which hang straight down from the branches to a length of 6 feet or 8 feet on the older trees, while they are no larger round than a lead pencil. They have a stately grace in calm weather, but their characteristic impressiveness is only seen when the long flexible branches are undulating in a light breeze or streaming before a gale. The bark of this Spruce is thin, smooth, and reddish in colour; the wood is white and very tough. The tree felled several years ago by Mr. T. S. Brandegee for the Jesup collection shows no sign of decay as yet. The largest tree in this grove—if grove it can be called, where the trees are scattered over a space of 50 acres, mixed with Firs and Incense Cedars—we found to be by actual measurement 121 feet 6 inches high, with a trunk 2 feet 11 inches in diameter $7\frac{1}{2}$ feet from the ground. Below that height the trunk swelled to a much greater size. Other trees were more than 90 feet high, with about the same diameter. My father left for San Francisco on the second day, but as the trees were seeding heavily, I remained ten days longer and collected 800 lbs. of cones, out of which we will get some 20 lbs. of fine clean seed, the first, I believe, ever collected. I found another grove of about twenty trees some two miles from this one, but could see very few seedlings in either place. In both groves the trees were growing on the north side of the highest peaks, where the snow lies 15 feet or 20 feet deep, as the mail-carriers' signs show, and I can therefore believe the Weeping Spruce will be hardy in most parts of the east.

Later in the season I made another trip to these groves to get as many seedlings as I could, and

hunt up more trees if possible. Hunters and prospectors reported that they grew in various parts of the mountains, but when these men saw the branches I brought down they admitted their mistakes. Mr. Orrin Russell, who has lived in this part of the country for more than 20 years, and who is exceptionally well informed, reported that a few Weeping Spruces grew on the coast-range in Oregon. I visited him at his mines after I had collected and shipped the few seedlings I could find on the Siskiyou Mountains, and in company with his brother, Mr. Joseph Russell, found the trees at the place indicated—on the summit of the coast-range, on the divide between Cañon Creek and Fidler's Gulch. This is the first time, so far as I know, that any record has been made of these trees in Oregon. We also discovered a few more about a mile south-west of the first grove. They are widely scattered, and in a dense forest of Firs and Douglas Spruce and taller than those on the Siskiyou Mountains, but have a smaller trunk diameter. We spent two days collecting the seedlings. Mr. Orrin Russell informed me that he knew of about a dozen trees at the head of Sucker Creek, in the Siskiyou, which I would have visited had I not been prevented by heavy snow.—THOMAS H. DOUGLAS, in *Garden and Forest*.

*** Messrs. Thorburn, of New York, have seed of this interesting Pine, and we have to thank them for some of it.—ED.

THE WOODS OF BRITISH GUIANA.

The United States consul in Demerara, in his last report on British Guiana, gives some interesting information respecting the timber of that colony. The varieties of lumber are numerous, in colour from dark red to almost pure white, and in specific gravity from nearly double that of water to less than half. The principal building timbers are Green-heart, Mora, Wallaba. The first is a most valuable wood, being classed with Teak in the regulations at Lloyd's, while its durable qualities are placed on a level with those of Oak. It is heavy, very close grained, grey with a greenish cast, and may be obtained 50 or more feet in length, and squaring 12 inches to 18 inches. Under water and in the tropics it is superior to all other timbers, house frames a hundred years old having been found still unperforated by worms. The Mora is not quite so close grained as Green-heart, but it is classed with it at Lloyd's, and is almost equally durable. Its colour is reddish, and it may be obtained as large as Green-heart. Wallaba is a dark red wood, with an unpleasant odour when new, very durable, but not obtainable in such large-sized logs. Being easily split, it is commonly used for making shingles, palings, cask and vat staves, &c. The wood of other trees is particularly suited for special purposes, such as that of the Bullet tree, which was once considered the only timber fit for the arms and shafts of windmills. Then there is that of the Silver Bally, which is light, and suitable for boat-building, because it contains a bitter principle obnoxious to worms and barnacles. The woods suitable for furniture, of which there are about a hundred different kinds, will no doubt be appreciated in many other parts of the world when known a little better than at present. The wood of the Cedar (*Cedrela*), which is quite different from that of the Pine family, is useful for wardrobes and cabinets, its scent tending to keep away insects. Mahogany is not native to the colony, but the wood called Guiana Mahogany is that of the Carapa, commonly known as Crabwood. It is neither so dark in colour nor so hard in texture as Mahogany, and being more easily worked, is used for all kinds of furniture. Letterwood is, perhaps, one of the prettiest, but as the peculiar dark marks are only found in the heart, only small logs rarely exceeding 6 inches in diameter can be obtained. Purple-heart is unique in being of a pretty violet colour when fresh or new; it, however, turns to a dark brown after being worked up. If it were possible to prevent this change it would be a most beautiful wood, but even as it is the furniture made

from it exactly resembles that made of Rosewood. Every colour known is represented in the Guiana woods, from almost black, through brown and red to deep and pale yellow, and almost to white. They are curiously free from irregular veining and knots, the marks being uniform and in parallel lines; nevertheless, they are by no means wanting in beauty. For panelling nothing can excel the nearly black Wamara, contrasted with the pale Green-heart, or the lighter and more easily worked white Simarupa. At present the demand is so limited that many of the fancy woods are difficult to procure, the woodcutters looking only for such timber as they know will command a market. If, however, a market were opened, these could be collected as easily as Green-heart, Mora, and Wallaba are at present.

Distances of planting Larch.—The common way of planting Larch thickly is far from happy in its results. We long hoped to see some reason for planting trees as thickly as Coleworts, but now we begin instead to see reasons why it should never be done. In most cases people do not thin their young trees, therefore it would be better to begin by planting rather thinly. The idea is that the early thinnings are useful for stakes, but they are really of very little value. It is impossible for the young trees to make a strong "plant," or get stout enough to carry their own bulk, in the way they are generally planted. In the natural woods there are many vicissitudes and great differences of surface, which make it impossible for the young trees to come up as thick and even as a bed of seedlings. Besides, there are the old trees, which have possession of the ground to a great extent. Larch should not be planted closer than 4 feet in the lines and between the plants. If people made experiments in that way or with greater spaces, and with healthy little plants, they would probably be rewarded with good strong trees, that would not give way with snow or wind, but even these would require to be thinned in good time. It is not an uncommon thing to see a feeble plantation of Larches with the stems 18 in. apart; yet the Larch in its wild state is a noble tree, as, indeed, it often is cultivated, though not where the absurd close planting is the rule.—*Field*.

The common Ash is a bright-looking tree in winter, the bark being of a silvery-grey or light brown tint. This tree ought to be more generally planted in the suburbs than it is, for as a town tree it is immeasurably superior to either Elm, Lime, or Chestnut, all of which suffer from drought and red spider during hot summers, and lose their leaves or become rusty towards the end of July. The Ash is rather late in leafing, but, like the Planes, its foliage keeps fresh and green until the sharp frosts of autumn cause it to fall.

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No. 1115. SATURDAY, April 1, 1893. Vol. XLIII.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—Shakespeare.

ORCHARD AND FRUIT GARDEN.

MELONS FAILING.

It may appear a somewhat bold assertion to make that the majority of Melon plants grown annually fail to produce fruit that is really fit to eat. What I term Melons fit to eat are those which require no artificial aids to make them palatable, and which do not leave a disagreeable taste behind. A properly ripened Melon should require no powdered sugar to sweeten it or disguise a poor flavour, nor a glass of wine to "get rid of the taste." French tastes may favour varieties of the Cantaloup type, which, to the English palate not educated to such coarse fruit and condiments in the form of pepper and salt, are of little or no value, and we have, therefore, to pay the penalty, that is to say, must grow choicer, more richly flavoured forms requiring very much more cultural skill in their production. Frame culture has of late years given way to house culture, and this, again, is largely responsible for the introduction or numerous varieties more remarkable for the appearance and quality of the fruit than for their robustness. Not so very many years ago the Melons most generally grown in pits and frames, if not always so fine and perfect in form as those produced by plants in houses now-a-days, were yet fully equal to the latter in point of quality, and it is my belief also that there were comparatively fewer failures twenty-five years ago than there are in these presumably more enlightened times.

If we discuss the causes, under glass more especially, it is to be hoped this will serve to prevent fewer failures from taking place than formerly, mistakes made at other times being guarded against this season. It is an undoubted fact that the kind of soil used has a marked effect upon the quality or flavour of the fruit. In former years the most successful, to my knowledge, with Melons in frames were those men who used little else but rather strong loam dug from immediately below the turf in an old pasture, and whenever I have been fortunate enough to procure similar material, my success with Melons in houses has been more certain. Very few owners of meadows care for gardeners to strip portions of these of their turf, but they do not so much object to the removal of what I may term the "under-cut." At any mild time during winter and the early spring months strips of thin turf may be cut and rolled back, one end not being separated, and from immediately below this be dug a layer 3 inches deep probably of virgin loam, afterwards replacing this with ordinary garden soil, the turf being returned to its former position and well beaten down. In this manner some really good Melon soil can often be obtained without detriment, but rather otherwise, to the pasture. Supposing there is a little clay in this soil, and it is needed by Melons, all that is further necessary is to add a 6-inch potful of bone-meal and a like quantity of newly-slaked lime to make it perfect. There must be some "body" in Melon soil, fibre, to which so much importance is often attached,

counting for very little. As a matter of fact, better Melons can be grown in soil largely or wholly composed of the loamy subsoil to be obtained in very many kitchen gardens in preference to fibrous soil or partially rotted turf from light land. Some of the latter is of a far too spongy nature to suit Melons. Either it holds moisture only too well and quickly becomes sour, or it retains scarcely anything applied to it. The former is most deceptive and very difficult to deal with, but light or fibrous soils not liable to become sour in a few days can be rendered fit for Melons by a free addition of some of the aforesaid subsoil, or pulverised clay should be mixed with it to the extent of about one-sixth of its bulk. Clay can be prepared for use by being chopped up into small pieces, then thoroughly baked or else dried in full sunshine and drying winds, and then reduced to a powdered state by a gentle rain or the application of just enough water to quite re-moisten the lumps.

If Melons planted in light fibrous soils are likely to fail, what other result can be expected when the very opposite kind of soil is brought into such a condition as to make it next to impossible to keep roots active in it? Numerous cultivators are evidently well aware that a rather strong clayey loam is most suitable for Melons, but quite spoil the effect by ramming this down heavily. Melons thrive very well in a solid root-run; they ought to have something in fact that will cause the production of numerous fibres rather than rambling Cucumber-like roots; but how is it possible to retain those narrow, much-exposed ridges of soil in a sufficiently moist state to keep the roots alive after the first few weeks? When those much-rammed heaps become dry, they soon crack badly, and in any case watering them is of very little avail. Melons are really moisture-loving plants, or as much so as Cucumbers, and if the roots cannot be kept active nearly or quite up to the time the fruit is quite ripe, what must be termed a failure is the inevitable result. Those so-called dried-off plants, water being presumably withheld at the ripening period with a view to improving the quality of the fruit, were in very many instances dried off unintentionally much earlier in their career, and could not be kept alive long enough for the fruit to ripen properly. Fruits cut from these plants are positively nasty, neither sugar, pepper, nor salt making them palatable. When hotbeds are formed for the purpose of giving the plants an early start, the roots are liable to leave the soil for the heating material underneath, and this loose rich root-run causes a rank growth for a time, but usually ends in an early collapse, owing to the roots not long surviving their abnormal activity. I hold that the soil used should always be formed into square heaps or ridges, and, where possible, should be kept up together by means of a loose 4½-inch brick wall. The latter can be added to or set out wider for the purpose of giving a shift, a breadth of soil being added all round or along one or both fronts, and, in addition to greatly facilitating watering, also serves to keep all the roots alive that reach the outside. Once this plan of enclosing and keeping the soil up together has been given a fair trial, few would think of returning to the older and far less reliable system of planting in exposed ridges.

Very many plants are sure to fail owing to being planted too low, this inviting an attack of canker. When the collars or that portion of stem immediately above where the topmost roots spring is kept high and dry it is not often that Melons are affected by canker. Decay might set in owing to damage done to the stalks of

primary leaves, or the too-long-delayed removal of lower and unnecessary side shoots, but this is merely a spread of the decay from the affected or damaged parts to the stems, and very different to the ordinary canker of the collar. In my opinion Melons ought always to be planted sufficiently high to admit of subsequent top-dressing and additions to the heaps being made without bringing the mass up to the same level as the collar of the plant. The soil immediately about the collar should be conical, and the rest nearly or quite on a level. It will then be an easy matter to keep the latter well watered without moistening the tiny mound in which the plants were first started. A MELON GROWER.

MANURING.

AN ample application of manure has always been considered essential to the successful growth of vegetables, but it is only in recent years that the manuring of fruit trees, more especially with chemical fertilisers, has been found to be beneficial, and in some cases quite necessary for the production of heavy annual crops. It is true that an Apple, Pear, or Plum tree planted on good ground, or in a garden where the soil is manured for other crops, will generally grow well and bear occasional crops, but a tree that commences to bear heavily after being planted a few years (and with the choice now before us of so many free-bearing varieties, these are the ones to prefer for profit) will certainly pay for special attention in the way of manuring to supply the drain of potash and phosphates which a full crop of fruit naturally draws from the soil. It is very certain that an ample supply of this fruit food within reach of the roots will enable a tree to produce heavier and more regular crops, and there is no better way of doing this than by the judicious use of chemical fertilisers, as we can apply them in the various forms and admixtures suitable to the requirements of the different varieties of fruit and the special need of the tree.

For instance, a tree forming plenty of wood, but no fruit, will need potash and phosphates (with possibly lime in some soils), while one bearing freely, but not growing, must have nitrogen in addition to stimulate the formation of wood. Nitrate of soda is about the best form of artificial manure to supply nitrogen.

I have seen a wonderful increase of growth, especially in starting Black Currant bushes from cuttings, through the application of this useful fertiliser. Nitrate should always be applied in the spring so that the moderate rains may gradually convey its nourishing properties to the roots during the growing season; if used in autumn it would be more or less wasted, but ordinary liquid manure can scarcely be put round a bush or Apple tree at the wrong time unless perhaps just when the fruit is ripening. I like to dress an Apple or Pear tree with potash immediately after bearing an unusually heavy crop, and wash it in with liquid manure. This gives the tree strength to form fruit buds, thereby securing the chance of a crop next season. Without this assistance there will frequently be a lack of blossom, especially after a dry season.

Anything in the way of slops or soapsuds is never wasted poured round fruit trees on turf during winter.

Besides artificial manure, a mulch of stable manure is of the greatest benefit to bush fruit. If Black Currants receive a mixture of superphosphate, kainit, and nitrate, and afterwards (when this is washed in) a mulch of stable manure, a full crop may fairly be relied on whatever the season or on any class of soil. Certainly spring frosts sometimes do damage, but blight need hardly be feared. Artificial manures alone would give sufficient nourishment, but on light soils either mulching, liquid manure, or watering is absolutely necessary in a dry season, for the Black Currant to thrive must have moisture.

Green Gooseberries being an early crop, the bushes should be manured betimes; if left till late

in a dry spring the berries will not derive much benefit. Green manuring is occasionally practised with advantage, and is of lasting benefit. The roots also of some plants, such as Clover, are well known to contain a large percentage of nitrogen, and no better and more durable foundation can be laid for a profitable fruit plantation than Clover ley with a good bite of herbage dug or ploughed in. If a heavy coating of manure can be turned under at the same time, you will have a compost capable of producing the very heaviest crops of Strawberries, vegetables, or bush fruit.

When planting Apple, Pear, or Plum trees on land treated in this way, take care that the roots do not come into direct contact with raw manure, but after the first season they will reach out and revel in it. I have been very satisfied with the results from a steep bank of comparatively shallow soil, prepared and planted after this plan some five years ago. The Gooseberries—Whinham's Industry—are now good-sized bushes, and have been very prolific, while the Strawberry plants—Héricart de Thury—where not cleared out to make room for the spreading bushes, still produce profitable crops. This bank lying very warm, one season during November gave us a second crop of Strawberries which sold at a good figure.

When sowing artificial manures, especially nitrate of soda, see that none of it falls on the foliage of plants or trees, and on that account a dry day is always to be preferred. Soot is a safe and valuable stimulant applied to Strawberries and bush fruits during winter. A good dressing amongst Gooseberry bushes is a pretty certain preventive and cure for the caterpillar pest. E. W. BEAVEN.

Holmer, Hereford.

RETARDING PEACH BLOOM.

It would have proved of much greater interest to readers of the discussion now proceeding between Messrs. Iggulden and Young had the former but shown that he had dealt with some of his trees on the same aspect in one way and some in the other, and then have shown how far those removed from the wall were later than those not removed, and still further later how far they had proved to be the more fruitful. It may not be forgotten that whilst the practice of removing trees from walls for the purpose of retarding the bloom is rarely practised, yet we had last year generally good crops of Peaches outdoors. Apart from that, there is the undoubted fact that there is no set time for sharp spring frosts, and although we have this year had some, if very dry, yet very severe, during the blooming time, it very frequently happens that such frosts as we get in March are earlier or later, and that in the latter case the retarded trees are very likely to suffer most. But whilst it is possible—indeed very easy—to give trees that have been kept close-nailed to the wall all possible protection at night from frost, that protection cannot be given to trees that still are tied out from the wall some 2 feet or 3 feet. Then whilst the wall, as was the case during recent hot days, became very warm and refracted that warmth for the benefit of the bloom at night, such warmth was quite lost in the case of trees that were tied some distance from the wall. But apart from that, the question is, after all, how much is Peach bloom retarded by this tying out? and, if it be really retarded, is not the practice more useful in helping to secure a succession of fruits from the same kind than in helping to save bloom from injury?

It really would be useful did outdoor Peach growers generally give a return of their results this year, because it is very rare that we have had at the Peach blooming season such brilliant weather, the days so hot and sunny and the nights so clear, still, and frosty as has marked the recent bloom period. It is all very well to quote Mr. McIntosh in favour of the practice of so-called retarding, but after all, has the practice been commonly followed? I take it for granted that if it were in McIntosh's day, it was soon found to be of no avail, and was allowed to fall through.

Practically, in horticulture in many ways as well as in other things preaching and practising are very dissimilar, and efficient means of protecting trees in bloom have, as a rule, long since superseded the old notion of removing branches from walls as advised. Then there is the certainty that when the branches remain thus tied until the buds have largely plumped or swollen, re-nailing can only be done even by the most careful-handed at great risk, and much of the bloom must be injured. Still further, it renders needful the re-nailing just when other work is getting abundant, and compels treading on the borders perhaps planted with some early crops. If the re-nailing be done too early, no retarding results. If done later, then much harm results. And still further, as I have before shown, so erratic are the frost visits, that it is just as likely the earlier bloom would escape and the retarded or later bloom be lost. Apart from the subject of this discussion, reports as to the general effect of the recent frosts—happily, very dry ones—on the Peach bloom will be looked for with great interest. Perhaps the full effects, whether disastrous or otherwise, cannot be fully discerned for two or three weeks, but it seems absolutely certain that the frost caught the bloom when at its best. That the bloom was of a robust nature there seems to be no doubt.—A. D.

— I am very much surprised that Mr. Iggulden should take his stand upon the system he advocates, simply because it is the recommendation of an old author. Why should this be put forward as a definite standard to go by? I am strongly of the opinion that if Mr. Iggulden were to visit those gardens where open-air Peaches are largely grown, he would find that very few growers follow the plan he advocates. A system, however old, is always capable of improvement, and I think that any method of culture which can be improved upon so as to lessen labour in a garden should certainly be given a fair trial. Like Mr. Iggulden, I have taken the trees from the walls, but found that the supposed advantages of retarding were so small for the labour involved that I gave it up, and I strongly advise Mr. Iggulden to do the same if labour is a consideration with him, as I expect it is.—Y. A. H.

Young wood on old Apple trees.—No form of training exhibits the wisdom of extending the growth of Apple trees more than closely-cropped pyramid-shaped trees. This system I look upon as the least productive of any, and one, I am glad to say, that is fast becoming obsolete. Whenever I get the opportunity of advising persons to allow their established trees to extend where space will admit, I never fail to do so. If trees, bush or standard, have their roots properly pruned at planting time, and space will admit of the extended growth of the branches, no tree will ever need root-pruning. This is not only a saving of labour, but adds decidedly to the crop of fruit, I may almost say annually, because, with the exception of low-lying districts where late spring frosts are prevalent, I think the method of pruning the trees does much towards obtaining, or otherwise, a crop of fruit every year. My opinion is that many varieties that are looked upon as being shy bearers are pruned on the wrong principle; for instance, *Mère de Ménage*. This handsome, richly-coloured Apple does not obtain favour in many places, owing to the shy manner in which it fruits. Here on the extension system of pruning it has not failed to give a full crop for the last ten years. So highly is it in favour that two years since I planted forty more trees in an open field. Last year they bore a really good crop of fruit extremely high in colour. The freedom with which bush or standard trees fruit on the comparatively young branches, resulting from extension methods of pruning, should convince the most sceptical on this point.—E. M.

Pear Louise Bonne of Jersey.—"E. W. B." speaks of this Pear as though it will succeed anywhere and under any form of training. This cannot be other than misleading, seeing that here in

our somewhat heavy soil in the open, first as a pyramid and afterwards as an extended bush, it has been a failure for the last ten years. Although the fruit sets freely it never swells, eventually cracking and becoming totally useless in spite of repeated attempts to improve the trees by lifting them and feeding them well at the roots. In soil that is light in character I think, with "E. W. B.," that this is a splendid Pear, but in the open and growing in heavy soil it is certainly a failure.—E. M.

Peaches for profit.—"J. C. B.," in his last contribution on this subject, says, "He cannot understand how anyone with 'Y. A. H.'s" experience as a fruit grower can fail to perceive that the skill which produces such fine Peaches in this country in the open may be employed with equally good, or even better, results where the climate is so much more favourable." I am strongly of the opinion that Peaches can have too much sunshine, especially during the latter or ripening stage. It brings them on too rapidly for the flavour to become fully developed, and instead of being vinous they are woolly. A brilliant sunshine, such as experienced in the countries "J. C. B." mentions, is accompanied with a very high temperature, and however beneficial this may be for ripening the wood, and so enabling the trees to produce heavy crops, the fruit is, nevertheless, of poor quality. If this be so when the fruit is fully ripened upon the trees, it cannot be but more pronounced when consigned to this country.—Y. A. H.

PRODUCTIVENESS OF GRAPE GROS GUILLAUME.

THIS variety is sometimes described as being shy-bearing, the long-rod system of training being advocated as the best means of obviating the difficulty. On its own roots, and also when grown under conditions not favourable to perfect ripening of the wood, Gros Guillaume is occasionally disappointing, bunches being very sparingly produced; but if worked on the Black Hamburgh, Lady Downe's, or other moderately strong growing, yet productive variety, and started rather early every season, there is little or no likelihood of too few bunches being produced. I have a strong rod, which was originally inarched on to a Black Hamburgh stock eight years ago, that has never once failed to show plenty of bunches. It is pruned to the second or third prominent bud and usually started during the first week in February. It is not often, however, that bunches are so plentifully shown as they are this season. Scarcely a break has failed to show a bunch, and there are fifty or more to select from. If I want large bunches, weighing, say, from 6 lbs. to 9 lbs., then only three or four of the best placed and most promising "shows" are left to develop, and these run out and branch to a surprising extent, light thinning and any amount of "shouldering up" being practised in order that every berry shall have a good chance to grow to its full size and colour well. Medium-sized to small bunches, however, are the most serviceable, and if the smallest "shows" or embryo bunches only are reserved, a strong rod 14 feet in length ought to be capable of carrying eight bunches weighing from 3 lbs. to 4 lbs. well. These comparatively small bunches if only lightly thinned, just enough berries being taken out to prevent undue crowding, can be had as compact and handsome in form as any Black Hamburghs, the berries also being nearly or quite as large and black; in fact, might pass for Black Hamburgh, but for the rather strong stem and the thinness of bloom on the berries. Started about the time stated, this fine Grape ripens to perfection by the end of August, and if it fails to keep very late, no fault can be found with the quality, well-ripened Gros Guillaume being superior to any of the late black varieties other than Mrs. Pince. I.

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A BOLD ROCK GARDEN.

AMONG rock gardens formed of recent years, the most extensive, picturesque, and, take it all in all, the best we know is that at Batsford Park, of one of the prettiest corners of which we publish an engraving. There are many other parts of it quite as pretty. It differs from any rock garden we have seen in the close association of various types of vegetation, trailers, shrubs, and even low trees. It in fact represents very prettily a rocky valley with a great variety of charming scenes, a miniature Val Anzascas, and not such a miniature either! Many things grow in it beautifully—alpine flowers, rock shrubs and climbers, delicate Ferns and creepers, bog flowers and water plants. Many Bamboos come

was very effective in covering banks. In such a place the smaller Rock Roses (*Helianthemum*) are happiest of all, and the alpine and Iceland Poppies are very effective and pretty. One little rock plant seldom made good use of is charming beside the water here, viz., the little Rock Knotweed (*Polygonum vacinifolium*). The Meadowsweets are delightful for association with rock streams of this kind, forming groups handsome in leaf and flower, the shrubby ones coming well in the back-ground. Among the many hardy plants grown, some of them, like the Rubi and the showier St. John's Worts, are particularly suited for a rock vale. Excellent use is made of the fine double-flowering Gorse in bold groups for associating with *Pinus montana*,

excellent effect the delicate little American *Ourisia*, which, though a long time in our gardens, is seldom used to good effect. Here it creeps about in most delightful ways in the angles of steps and moist corners, and is very beautiful. In the formation of this rock garden many thousand tons of stone were brought from the Bourton quarry on the estate, some of the pieces weighing seven tons each.

There is a very full collection of conifers at Batsford Park, but as the subject of this note concerns the rock garden only, we need merely say of them that the dwarfer and bushy Pines of Europe are used near the rock garden, and also some of the dwarfer forms among American Pines. There is a very large collection of Bamboos, between forty and fifty kinds, and about a thousand plants. This



In the rock garden at Batsford.

near and are scattered over the grounds, and delightful breaks of the red Oriental Poppy and other hardy flowers are seen in summer. The background is formed of alpine Pines, Bamboos and shrubs, and as we get near the stream by the rocks these are replaced by many beautiful rock shrubs and flowers, such as the various kinds of Thyme and Sandworts, alpine Pinks, which are charming in broad tufts on the rocks; Mountain Avens, which droops over them; the Pyrenean *Erinus*, which clothes their faces and finds its own foothold; Rockfoils (*Saxifraga*) in delightful variety; purple Rock-cress, Houseleeks, Stonecrops, Gentians, alpine Phlox, Indian and other Primroses, the Welsh Poppy, delightful for shady nooks and approaches of the rock garden, and the many Hellebores now in cultivation. We were charmed with a pretty Strawberry (*Fragaria nitida*), which

and the alpine forest Heath (*Erica carnea*) is seen in great sheets of rosy bloom in spring, while the alpine Rhododendrons of Europe also come in well, in addition to the hybrid American and other Rhododendrons and Azaleas in the background. The wild Roses of Japan and Europe lend a charming aid in the rougher parts, climbing over Juniper and the bush Pines of the Alps. Among these Roses are *Rosa rugosa*, *R. rugosa alba*, *R. rubifolia*, *R. lutea Biggeriana*, *R. lucida*, Sweet Brier, and other single Roses. In such a varied garden the Barberries, ever green and others, lend much aid, as do the various Brooms and Gorses. Many parts of the rocks are delicately draped with Feather Ferns, Lady Ferns, Hart's-tongues, Maiden-hairs and many others, which, seen near the rock and alpine flowers, are charming. Among the rock flowers we noticed growing with

collection has been recently formed, and will be most interesting a few years hence, when we may see which are the hardiest and most vigorous kinds in this part of England.

Cut-flower arrangements: are not always in good taste, but there is less fault to be found with sprays and button-holes than with the ordinary bouquet. We have lately seen some charming sprays composed of common flowers, but arranged well, suitable foliage being used as a foil. The purple and white-flowered Hellebores backed with the chocolate foliage of the Mahonia is an excellent contrast, or white Roses backed with the same material make a somewhat choicer arrangement. It is noticeable that the Lenten Roses are more used every year for sprays, and there is certainly a charm in the richly coloured and finely mottled flowers. Their beauty is enhanced when some light Grass is judiciously used, not to hide the flowers, but to throw over them, as it were, a soft veil. The Mahonia is much more effective for displaying the colour of the flowers in certain

instances than *Asparagus* or Fern fronds; there is a stronger, richer contrast of colour. We noticed the other day a spray of *Clivias*, but the colouring was far too pronounced, very different to an arrangement in which *Violets* were used backed with Ivy leaves. Last year a spray of green *Carnations* was one of the horrors of the season. It is to be hoped that such fearful productions will not be seen this year. One may imagine the effect of a spray of metallic green flowers, and it was common to see also this "novelty" used for button-holes.

FERNS.

SEASONABLE NOTES ON FERNS.

SHADING.—The time of year has again arrived when this is worth consideration before any proceedings are taken which may be ultimately prejudicial to the health of the plants. Just because the sun is now at a higher point in the meridian, it does not follow that shading should be employed to any great extent. If the Ferns suffer during bright sunshine, as they will do in some cases, it is through the previous treatment, not being altogether a rational one. Those Ferns will feel the effect of bright sunshine first that have been up to the present growing in too humid an atmosphere. This tends to develop the growth oftentimes to an abnormal extent. For instance, *Adiantum cuneatum* and *A. Farleyense* when shaded too much will develop much larger pinnae than when grown in more light, but it is done at the expense of substance with considerably less tissue in a relative proportion to that of fronds with smaller pinnae. These latter are far more enduring, suffering less during bright weather, and being at the same time less liable to injury from damp. The growth made under shade is altogether softer, although in some people's eyes it may look the better of the two. I am of the opinion that a deal too much shading is applied to Ferns in general. I alluded to the advantages to be derived from dispensing with it in the case of Tree Ferns a few weeks ago. These need not, therefore, be dwelt upon on the present occasion, but other Ferns will bear considering, and that probably to advantage in some cases. In order to start well with light shading, or none at all in some instances, it is essential to begin with the season. For some few weeks past this may have been acted upon by not maintaining too moist an atmosphere, the growth from the very first coming away sturdy and hard, the young fronds of many Ferns thereby assuming a roseate tint which they would not otherwise do. This tint upon the young growth betokens hardness in most cases. Too high a temperature is also prejudicial to Ferns in general. Those grown in houses that are too warm for them, will, as a matter of course, suffer during bright sunshine through want of tissue as well as through lacking roots in proportion to top growth whereby they are sustained in their vitality. Growing any plant in too much heat means the development of top growth out of proportion to the root growth; hence the latter (the roots) are weakened through their resources being too much taxed and the plant suffers throughout, but more especially when the sun shines brightly. If this subject were more thought out than it is, there would probably be far less shading used than at the present time, and that to manifest advantage.

It is not too much to say that the subject of shading is not so thoroughly considered as it should be. At times it is altogether irrational, and bears not the slightest relation to the

plants being dealt with. This is applicable to other than Ferns, but as regards these, there is in some quarters a popular idea that shading must be rigidly adhered to. There are very many Ferns that never need to be shaded in the slightest degree, provided they are not too close to the glass. When good lasting fronds of *Adiantum cuneatum* are required for cutting, it is from plants well exposed that the best results are obtained, the pale shade of the fronds in such cases harmonising much better with the flowers. *Adiantum Farleyense*, when well exposed to the light, is simply lovely in its tinted fronds; so also are *A. rubellum*, *A. tinctum*, and *A. Veitchii*. These latter three will, I know, show their character under shade, but the roseate tints are intensified by exposure. On the other hand, there are a few species that must be shaded, such as *A. trapeziforme*, *A. cardiophyllum*, *A. cultratum*, *A. Sanctæ Catherineæ*, and a few others of like character. Most of the *Aspleniums* may be grown well exposed to light and air. The *Gymnogrammas* show to much better advantage with plenty of light; the fronds, it is true, may not be of such a large size, but the farinose powder is all the more developed upon them. Although these and the *Gleichenias* are essentially moisture-loving plants at the roots, in neither case do they require a moist atmosphere or a shaded position. The *Gleichenias* would now be more popular than they are if this fact were noted and acted upon. A little shade is favourable to the *Nephrolepis*, on the whole, but the *Davallias* enjoy more light; the latter may be grown without any shade. In this respect, as in the case of the *Adiantums*, the *Pteris* family is a divided one. Such as *P. tricolor* and *P. argyrea* undoubtedly require shading, but most of the others do not, or but the slightest amount. There is not, I think, now-a-days much use made of rough plate-glass for glazing. I have grown Ferns and other plants under it most successfully, and am convinced if it were more used, there would be even still less need of shading. Fluted or corrugated glass is, I think, too expensive to adopt, whilst tinted glass I would not recommend at all.

Then as to shading, only the lightest should be used. I rely solely upon No. 3 netting, which is in some cases used as a protection against frost. Tiffany is also good, but I prefer the former. Roller blinds are far better, wherever practicable, than fixed ones. Rather than fix the material permanently, I most decidedly prefer white (not green) shading bought in the powder state and mixed with water for use. This gradually washes off towards autumn, which is a great advantage. Furthermore, in a mixed fernery a deal may be done by so arranging the plants as to their special needs that the amount of shading is considerably lessened. Even in the case of Filmy Ferns it is possible to carry shading to the extreme from the popular notion that it is essential. Rather than do this I would prefer to double glaze the roof of the house where they are grown; it would be infinitely better than a heavy shade. Some may ask how to avoid scalding without shading. To these I would give as an answer, dispense with morning syringing and damping down, depending entirely upon the afternoon for this accessory to growth. Too much moisture upon the plants as the sun rises will intensify any risk of burning. Climbers trained thinly upon the roof are a natural means of shade to plants beneath them, and one that is not nearly enough adopted. There is another fact the result of shading to excess; it is that of the extended length of footstalks to the fronds, in some cases

so weak as not to bear the weight of the fronds themselves. In making these remarks about shading, it is hoped that it may be the means of preventing the use at least of heavy material for the purpose. Those who hitherto have shaded heavily will do well to ponder these remarks in good time.

GROWER.

SEEDLING FERNS.

ALTHOUGH Fern spores may be sown and will germinate at any time of the year, yet the spring-time is undoubtedly the best season for raising seedlings, as there is then less risk of losing the young plants from damping off while in the seed-pots, besides which they have time to get well established before the following winter. I more particularly allude to such as are of slow growth, and such tender and choice sorts as are not grown in quantity for ordinary decoration. The fast-growing *Pterises*, &c., which are required in various sizes throughout the year, may be sown at intervals according to the requirements; but it is only where very large quantities are required that it will be necessary to make more than two or three sowings during the year, as the same sowing will generally give successive batches of seedlings.

To succeed in raising Fern spores, it is of the first importance that the spores should be collected at the proper time, for Ferns are much like other plants in respect to shedding their spores as soon as ripened. Even with some of the most prolific Ferns it is only when the fertile fronds are taken at the right moment that really good crops can be secured. Fern spores collected in the autumn are generally more reliable than those taken during the winter or early spring. I have also found that those grown in a rather drier atmosphere than is usually recommended are most reliable. In collecting spores of the slow-growing and choice sorts, it is necessary to be careful that the plants from which they are taken have not been growing in close proximity to such as *Nephrodium molle*, *Pteris tremula* and *P. cretica*.

Before preparing pots or pans for sowing spores the soil should be thoroughly cleaned from worms and other insects. Many growers go to some trouble in preparing a mixed compost, but this is quite unnecessary. Some good loam pressed firmly in the pots, and a sprinkling of sand, crocks, and charcoal over the surface is quite equal to the best preparation that can be made. The crocks and charcoal should be pounded up fine. If the pots are well soaked in water before the spores are sown, very little watering will be necessary, and in no case should the surface be watered. The seed-pots need not occupy valuable space. If covered with glass they may stand under the stage, provided light and warmth are sufficient. Although they should not be exposed to the direct rays of the sun, it is quite necessary to give them daylight, or, I should say, the full benefit of all the light obtainable. I have experimented and found that a pot when half of the surface has been exposed to the full light and the other portion in semi-darkness, the advantage of light is quite evident. I should mention that in sowing the spores it is better to sow thinly, for overcrowding is frequently the cause of failure. I find it difficult to lay down any rule with regard to sowing, for in some instances where what appear to be good spores are very abundant, poor results are obtained, while with others which produce spores sparingly there is no difficulty in getting a good crop of seedlings. I can give no better instance of this than to take the two *Onychiums*. From *O. auratum*, which produces spores, or what appear to be good spores in great abundance, it is rare to get a good batch of seedlings, while in *O. japonicum* the spores are, apparently, very sparse, yet there is no difficulty in getting seedlings. The above is not an isolated case, and is not the result of rubbing off the woolly coverings of the spores from the fronds, but simply taking those which fall from the fronds after they are ripened.

It is interesting to note the various colours to be found in spores from different species. Take the *Adiantums*; those of *A. scutum* are of a bright orange yellow, while those of *A. rubellum* are almost black. Those of *Lygodium dichotomum* are of a deep yellow, and in *L. scandens* of a lighter shade of yellow. Good spores of *Pteris argyrea* are quite black, while those of *P. serrulata* are nut-brown. In *Osmunda palustris* the matured spores are green in colour. In the *Gymnogrammas* (silver and gold varieties) they are nearly black, though mixed with the gold or silver powder, as the case may be. In most instances it is easy to determine which are good spores, yet appearances are sometimes misleading, as in the case of *Onychium auratum* alluded to above.

F. H.

SELAGINELLAS FOR A WARDIAN CASE.

I AM asked by P. Gattely if I can give him some information upon this subject. Many kinds of these plants are used for this purpose, but which, by their weak, drawn appearance, prove at once that they have been wrongly selected or the treatment they have received is wrong. Selaginellas differ from Filmy Ferns inasmuch as they are not so very fragile that they cannot withstand the open air of our plant stoves. When they are transferred to the Wardian case the air is carefully excluded from them, and they get drawn, weak and unsatisfactory. This should be avoided, and I would advise "P. G." to set his doors open more or less wide, having a perforated zinc covering for the opening. This will prevent any accumulation of dust upon them. The case for growing these plants should be about a yard in length, and if about 2½ feet high with a span-roof, it will afford accommodation for a good variety to be grown. Do not plant too closely, and some of the close dwarf-growing kinds should be used for covering the soil and making a handsome finish to the whole. The centre of the case should have a few pieces of sandstone placed in it to stand up well above the soil, and also afford a place for sundry little species to be planted. About 2 inches of drainage material should be placed over the bottom, and upon this a good layer of Sphagnum Moss, and then the soil, which should consist of light turfy loam and fibrous peat, broken up small and the whole made fairly sandy. Into this the various species should be planted and carefully watered. Selaginellas by themselves I can scarcely recommend. I should prefer some Filmy Ferns with them, or at any rate some few Ferns which would thrive in a similar position. The following are some of the kinds which I would recommend for this purpose: *S. apus*, *S. atro-viridis*, *S. cuspidata*, *S. denticulata*, *S. delicatissima*, *S. erythropus*, *S. flabellata*, *S. filicina*, *S. Galeotti*, *S. helvetica*, *S. inaequalifolia*, *S. Kraussiana* and *Kraussiana variegata*, *S. lepidophylla*, *S. Mariesi*, *S. Martensi* and its variegated form, *S. patula*, *S. pilifera*, *S. Poulteri*, *S. rubella*, and *S. serpens*. The last will make a good border plant, which changes to a metallic white towards evening, resuming its green hue in the morning.

WM. HUGH GOWER.

Alsophila crinita.—The fact that stems of this beautiful Tree Fern have lately been on sale at the auction rooms seems to show that, although up to now one of the least known of its class, there is a likelihood of its becoming more widely cultivated in future. Several fine specimens of it are grown in the large temperate house at Kew, and furnish conclusive evidence of its value in large conservatories and similar structures. Up to within the last few years the general idea respecting its treatment was that it required a stove temperature. This idea probably originated by its being known to come from Ceylon and other parts of tropical Asia, without the fact of its restriction to high altitudes being considered, or perhaps known. There can be no doubt, however, that a winter temperature ranging between 40° and 50° Fahr. is more suitable for it than a

higher one. In a warm house fronds push up rapidly, but still more rapidly disappear, and the plant is soon exhausted. The stem of the largest plant at Kew is 8 feet or 9 feet high and about as many inches in thickness; it is only partly covered with roots, but they, as well as the bare portion of the stem, are of a very dark brown, almost black. The spread of the fronds is 15 feet, each frond being 5 feet across at the widest part. They are of a somewhat pale green, the base of the rachis as well as the entire surface of the young uncurling fronds being covered with light green, chaff-like scales, which give the growing centre a curious shaggy appearance. The plants should, if practicable, be planted in peaty soil and the stem as well as the roots should be kept uniformly moist, but they thrive quite well in pots or tubs.

—B.

MICROLEPIAS.

THIS genus of Ferns bears a great resemblance to the *Davallias*, and I am asked by C. Krupp if some specimens he sends me are not *Davallias*. *Microlepias* are good growers and rapidly make handsome specimens. Some will thrive in the greenhouse fernery and others in the stove. Some are extremely ornamental as pot specimens, or when planted out in the rock-work, others will thrive as basket plants, whilst others succeed well in the Wardian case. *Microlepias* differ from *Davallias* chiefly in the manner of growth, and in the half cup-shaped fructification and its intra-marginal sori. These plants being for the most part somewhat robust growers, should be allowed ample space when grown in pots. The pots or baskets should be well drained, and the soil best adapted for them is a mixture of turfy loam and fibrous peat in about equal parts, made fairly sandy. Treated in the above manner and with congenial heat, the plants will rapidly make handsome specimens. The following kinds I have grown, and all are handsome and beautiful, whilst several other kinds not yet introduced in a living state well deserve the attention of the introducers of new plants.

STOVE KINDS.

M. PLATYPHYLLA.—A fine bold-growing plant with tall fronds and broad pinnae of a soft pale green hue; the fronds grow erect, reaching the height of some 4 feet or 5 feet or even more, independent of a bare stem of about 2 feet. The sori are reddish-brown and very conspicuous. Altogether it is one of the handsomest bold-growing kinds which we have.

M. TRICHOSTICHA.—This is a plant of wide distribution, and consequently it varies somewhat in its appearance. All the forms are easily grown and well worthy of a place in the stove; the fronds are large, some 3 feet in height, and considerably over a foot broad.

M. POLYPODIOIDES.—This is very variable, but in whatever state it is always admirable; the fronds are some 3 feet or more in length and upwards of a foot in breadth, finely divided and rich green in colour.

GREENHOUSE KINDS.

M. STRIGOSA.—This is a beautifully symmetrical plant, having fronds each from 1 foot to 3 feet long and from 6 inches to 10 inches broad, the centre pinnae being the longest, whence the frond tapers gradually towards each end. It makes an elegant plant for a hanging basket.

M. SCABRA is a very handsome plant with fronds each some 18 inches or 2 feet long. This forms a beautiful object in a hanging basket, and it also forms an elegant plant for a Wardian case.

M. NOVÆ ZELANDIÆ.—This most beautiful plant, known also as *Acrophorus hispida*, *Davallia hispida*, and *Davallia Novæ-Zelandiæ*, is dwarf-

growing, having finely divided dark shining green fronds which remind one of those of a *Trichomanes*. It thrives well on the rockwork, on moderately elevated clefts, and forms a beautiful pot specimen. I like it best when grown in a Wardian case, for in this position it is simply magnificent.

W. HUGH GOWER.

FLOWER GARDEN.

THE ROCK GARDEN.

II.—CONSTRUCTION OF ROCKS FOR CHOICE ALPINES.

HAVING pointed out the natural conditions under which alpine plants from the higher mountain regions grow in their native home and the lessons to be learned therefrom, I will now proceed to the practical application of these lessons of Nature in the construction of rock gardens. Fast-spreading plants like *Alyssum saxatile*, *Aubrietia*, *Arabis alba* and many of the mossy section of *Saxifragas* are easily grown; but the minute gems of higher mountain ranges require in most cases a special preparation of the place which is to become their home. Deep, but narrow crevices are an excellent means of supplying choice alpine plants with the most important of their requirements, viz., coolness and moisture for the roots. I will now describe the

PRACTICAL CONSTRUCTION OF CREVICES.

On this plan I will suppose that it is desirable to construct an unpretentious group of rocks, say 8 feet or 9 feet in diameter, specially for choice alpine plants, that the stone available is of the stratified class, and includes plenty of long flat pieces, which are only a few inches thick. I will further suppose that the ground is almost perfectly flat, and appears in section, as represented in the first illustration (see sketch No. 1) by the dotted line *a b*, showing the original level of the ground. My way of proceeding in this case would be as follows: First of all the rough outline of the desired group of rocks should be marked out on the ground so as to give the best effect. As to shape, perhaps an oblong would be best, but this should be varied as much as possible, showing bold angular projections and deep recesses. Circular lines should be avoided altogether, at least when stratified rocks are used. Unless it is intended to build a structure of considerable height, the ground within this marked space should be boldly excavated, say, to a depth of about 2 feet, as shown on sketch No. 1 by the line *c e d*. The excavated soil, if of good quality, can again be used by mixing it with the broken stones, grit and other soil to be used later on. Perfect drainage is the next thing to be considered, and unless the ground should be of a particularly light and porous nature, this would best be effected by spreading a layer of porous stones, brickbats, &c., to a thickness of about 4 inches to 6 inches over the whole space. Should the ground be a heavy clay, this spreading of stones, &c., would not be sufficient, as the excavated pit would hold water like a cup, and care would have to be taken to have drain pipes or other means to make the accumulation of stagnant water beneath the stones impossible. It will be seen from the illustration that the sides of this pit are not upright, but slanting, which is a matter of importance, as it will enable us to place the foundation stones all around the boundary of this pit in accordance with the rules given under the heading of "stability," viz., resting on firm ground and in such

a position that they cannot be displaced by the subsequent pressure of soil and other stones. When the arrangement of the foundation stones forming the outline of the desired rocky group has been completed in accordance with the rules given in a previous chapter, the small stones or other material already put in as drainage should receive a covering which will prevent the soil from getting in between, unless the ground below the line of excavation (C E D in sketch No. 1) should be of such a nature as to provide an additional feeding ground for the roots of the alpine. For this covering I generally use thin pieces of turf turned with the grassy side downwards, or, if the rocks are intended for plants requiring an extra degree of moisture, Sphagnum Moss would be preferable. The place so prepared now receives a layer of good soil about 9 inches thick. The best for this purpose I consider a mixture of one part leaf-mould, one part peat, two parts loam, and one part very gritty sand. It may be said that this is rather too rich a medium for alpine accustomed to the apparently scanty food of their native mountains, but I would point out that this layer of soil must be considered as a kind of reserve ground, to which the roots can only have access after they have grown through the much more stony soil in the crevices above. If the roots find poor, stony soil at the top, but richer ground as they descend, it will be an inducement to them to grow as far as possible away from a surface exposed to the dangers of a changing climate, and this is precisely what we want them to do. The next layer, say to the thickness of another 9 inches or thereabouts, should be formed of stones set with their broadest ends downwards, and so placed that they do not touch each other, but leave between them numerous funnel-shaped spaces, which again should be filled by smaller stones and gritty soil thrown in alternately, and in such a manner as to provide between the pieces of stone innumerable little earthy channels communicating with the layer of better soil below. After this work has been carefully completed all over the pit, which has thus been filled up nearly to the original level of the ground, we are ready for constructing the crevices proper. For this purpose it is necessary to select the thinnest and flattest pieces of stone at our disposal. These are placed on their broadest edges almost in an upright position, so as to leave between each two lines of stones a deep narrow crevice about 3 inches to 6 inches wide at the top, but only 1 inch or 2 inches wide at the bottom. This funnel shape, as it were, is of importance, as it allows the soil to settle firmly against the sides of the stone. If the crevice were narrower at the top than at the bottom, the soil must naturally settle, not against the stones, but away from them, and a hollow space fatal to most alpine would be the inevitable result. Sketch No. 1 shows a transverse section through a group of rock constructed on this plan. The crevices themselves are then filled with stones and gritty soil in such a way as to provide a large number of crevices within a crevice, so to speak, in the shape of a large number of tiny channels filled with earth, every one of which is in direct communication with the reserve store of soil

below. The scale given on the illustration (No. 1) plainly shows that in crevices like those marked *c*, *d*, and *e*, the plants would be able to send their roots to the depth of at least 4 feet, where coolness and moisture would at all times be ensured. When fixing the largest of the flat stones in this manner it will be found difficult at first to keep them in the exact position desired, but this can be easily done by temporarily supporting them with other stones, which can be removed as soon as the crevices are filled up sufficiently high with the proper medium, when they will be found to be perfectly safe without any other support; but the filling of the crevices must, of course, be done simultaneously all over the group. To prevent the large stones which form a crevice from settling down, they might be supported here and there by smaller stones resting in some places on the material used for drainage. The greatest possible care is required in filling up the prepared crevices. The small stones used in connection with the gritty soil to form the little earthy channels above referred to must be placed most carefully, and should not be thrown in at random when they might fall in such a position as to obstruct the roots in their downward passage,

constructed the quicker must be the passage of the roots into the moist and cool place we have provided for them lower down. Sketch No. 3 shows on a somewhat larger scale the mode of growth of the roots of an alpine plant through a narrow crevice prepared in the manner described. The proportion between roots and plants in this sketch is by no means exaggerated. The roots of alpine like to "feel" the stone, to which they cling tightly, and if a crevice constructed and planted on this plan were examined say two years after planting, it would be found that the small stones used for filling the crevice are tightly surrounded by a network of fibrous roots.

UTILITY COMBINED WITH EFFECT AND STABILITY.

I am quite willing to admit that the illustration as shown by sketch No. 1 represents an arrangement apparently the reverse of picturesque or artistic, but the above sketch is a transverse section of the unseen part of the work, mostly underground, and it must not for one moment be supposed that the visible part of a group of rocks constructed on that principle would in the remotest degree resemble



No. 1.—Section showing interior arrangement of group of rocks prepared for growing choice alpine.

and perhaps even cut them off altogether from the feeding ground provided for them. It will be found an advantage not to fill the crevices completely at first, but to leave an empty space about 6 inches or 9 inches deep from the top of the stones; this will save the labour of digging holes for the alpine, and will also enable us to add any particular soil, stones or other material during the operation of planting, when the whole is filled to the proper level. Whether the small stones used for filling the crevices should be limestone or any other kind must, of course, depend on the nature of the plants to be used. That the chemical composition of stones may change the nature, and sometimes even the colour of alpine flowers will be shown later on when speaking on the subject of planting, but as by far the greatest number of alpine have a decided preference for limestone, we cannot go far wrong in using plenty of this broken and limestone chippings for mixing with the gritty soil used for filling the greater number of crevices, adding a little chalk or old mortar for plants requiring it, and setting apart a comparatively smaller number of crevices for being filled with pieces of granite, sandstone, or other kinds of rock for such plants as object to limestone. It will be clearly seen that the narrower a crevice is

the stiff and formal position of the rocks as seen in an imaginary transverse section. There is, on the contrary, plenty of scope for combining effect with utility and stability, and in practical rock-building these three essential qualities must constantly go hand in hand. Sketch No. 2 (see illustration) would more accurately represent the real appearance of a portion of the exterior of the same rocky group as shown in sketch No. 1. In my notes on arranging the stones for effect, I hinted that rocks built with stones of the stratified class should more or less plainly show the character peculiar to that formation. In sketch No. 1 the little ledges marked *a*, *b*, *c*, *d*, *e*, *f*, *g*, and *h* may be made to appear like distinct strata, but although in a transverse direction (as shown by the section illustrated) these may show an almost horizontal position, it does by no means follow that they should also appear so in the longitudinal direction when seen sideways. They may, on the contrary, show a considerable angle of elevation, as might be most effective or most conducive to the health of the plants to be grown. If we desire to construct a group of rocks somewhat resembling sketch No. 2, we may, nevertheless, arrange the stones as shown on the first sketch, taking care, however, that the projecting outside edges of the stones

have the required angle of inclination, and that the ledges, which are to appear like strata, are approximately parallel. We must also take care that the stones forming these ledges appear like continuous layers by putting them very closely together, or by letting them overlap each other. When the stones are of such a shape that they cannot well be joined in this way

they would never be allowed to be overrun by other plants of coarser growth. Although these select groups may be completely separated from other parts of the rock garden by an intervening little ravine, a streamlet, a rocky path, a grassy bank, or in a dozen other ways, there is no reason whatever why choice alpine should not also find a place outside the select part proper, viz., in those portions of the rock garden which are constructed on a somewhat bolder plan and intended for larger kinds of plants, provided the conditions are favourable and crevices can be constructed as required by the alpine, and so that the roots of other large plants could have no access to them. If treated in this way, these scattered patches of alpine flowers may form a kind of connecting link between the select part and the rougher parts of the rock garden, which I will consider in my next article. F. W. MEYER.

Exeter.

(To be continued.)



No. 2.—Stratified rocks planted with alpine, showing a portion of the exterior of the group represented in sketch No. 1.

without leaving between them visible crevices running in the wrong direction, these crevices can be used for plants requiring to be planted sideways, or, where this should not be practicable, they might be obliterated altogether by filling them with a mixture consisting of heavy clay, Moss and small stones. When slightly wetted, this may be rammed firmly into the crevice and will last for years. It would not do to leave useless or objectionable crevices open, as they would not only spoil the illusion about continuous strata, but would also form a most convenient hiding-place for woodlice, slugs and other pests. By adopting this system of rock-building, all the arrangements for the roots of the alpine, as shown by sketches No. 1 and No. 3, will be completely concealed. Not only can this be easily effected at the sides, as shown by sketch No. 2, but also at the ends, where large flat stones might be arranged so as to run almost at right angles with the sides of the rock, and giving the idea as though the whole group were a block of stratified rock severed by volcanic force from the block adjoining. At the corners, where the stones would meet at different angles, a slanting or vertical fissure would be the result of this arrangement; but this will be found an excellent home for one of the many alpine requiring such a position.

By careful attention to the hints here given, rocks may be constructed which will appear not only picturesque and true to Nature, but which possess at the same time the most essential requirements for the growth of choice alpine plants, which, when once established, will take care of themselves for many years and delight us with an abundance of brilliant flowers, that will more than compensate us for the pains we took in providing them with a suitable home. The number of such rocky groups specially constructed for choice alpine must, of course, depend on the size of the rock garden, but, however numerous they may be, the principle of construction should, in my opinion, be the same, no matter how they might vary in size and shape, or whether the stone used is of the stratified or of the igneous class of rocks. In all cases these groups should form the most accessible and most select part of the rock garden, where

The blue Polyanthus.—It is very odd that whilst we have had many blue Primroses, we have but one—and that an old one—blue Polyanthus. It seems to be a fact that whilst the Primrose will give blues, it will not give real yellows, the Polyanthus doing the reverse freely. That fact tends to show that the parentage of each section is very dissimilar. I saw plants of the blue Polyanthus flowering in a frame freely the other day at Messrs. Laing's nursery, Forest Hill. It does not seem as if anyone had used this variety for intercrossing. Purplish shades in both Polyanthus and Primroses are not desirable, because they fade or burn so quickly under the influence of white frosts. Blues, on the other hand, if of real blue colour do not so suffer.—A. D.

Hardy Primulas.—Only on well-constructed rockwork, where some of the needful natural conditions are furnished, do we see the alpine Primroses thriving well. Ordinarily they are grown in pots or pans in frames, and whilst hardy enough, yet are susceptible to harm from excessive rains and snow thaws. A very good selection of sorts I noticed recently at Forest Hill, including *P. intermedia*, *ciliata*, *nivalis*, *purpurea*, *marginata*, *Clusiana*, *minima* and others of this class, all flowering. Without doubt, these alpine Primroses, when grown in frames, look neatest planted in pans and intermixed with some of the mossy Saxifrages. Very pretty for this purpose are *Saxifraga hypnoides variegata*, having small creamy foliage, and *S. luteo-purpurea*, having lemon-coloured flowers.—A. D.

Acroclium roseum is one of the best of the Everlasting Flowers. It has a charming effect if grown in a mass, and the flowers retain their bright colour for a considerable period. The white variety I consider one of the best annuals we have, the colour being so pure. A mass of this where hundreds of blooms are expanded in the bright sun has a striking appearance. The double varieties are very pretty, but the seed I have hitherto obtained has not given more than 20 per cent. of double blooms. Either these double forms have not been thoroughly fixed or I have been unfortunate with the seed. For winter decoration these *Acrocliums* are very good, but the flowers should be cut as soon as they are well expanded, or the colour goes early in winter. They should be hung up in a cool shed

until required for use in the house. Arranged with dried Grasses they have a nice appearance.—J. C. B.

Dielytra spectabilis alba, as far as I have seen it, is a poor thing, without the freedom or fine colour of the type. Unfortunately, the flowers are not really white, being invariably touched with a rose colour.—C.

LILIUM AURATUM.

It is a strange fact that whilst many gardeners fail through a series of years to establish *L. auratum* in the open ground, one occasionally sees it in some small amateur or cottager's garden in robust health. This fact was forcibly brought home to me on reading "J. C. C.'s" remarks in a recent issue of *THE GARDEN* on this subject. "J. C. C." appears to have tried every way that his experience could suggest, and yet the results have been disappointing. This is what is constantly occurring, and it therefore is inexplicable that bulbs planted in ordinary garden soil with no more care than would be given to a common Daffodil should live and increase in beauty from year to year. Strange and difficult of explanation though this may be, it is, nevertheless, a fact that bulbs set out in this way in haphazard fashion will frequently succeed very much better than when the soil has been carefully prepared for them. Some years ago a friend planted a small bulb among his Gooseberry bushes in ordinary kitchen garden soil, not at all like what one would consider to be good for the Lily. This bulb waxed in strength, and at the end of ten years was as large as an ordinary lamp globe. Nothing was done to it in the way of top-dressing all through that period. Several such instances have at various times come under my notice, the most striking being of recent date. Our village blacksmith had a dozen bulbs given him, and, being perfectly ignorant of flower culture, he set them in the ground with about as much care as he would give to a Cabbage. He happened to put them together, and last summer when I saw them they made a fine display. The stems do not run up more than 5 feet, but they are remarkably robust, carrying on an average about ten blooms of very fine quality. These bulbs were planted about eight years ago, and I have just come from examining them. I find that from three to five strong shoots have come from what was originally a single bulb, sufficient proof that they have be-



No. 3.—Section showing roots of alpine compelled to grow downwards, where the soil would be cool and moist.

come thoroughly established, and are evidently as happy here in a Surrey cottager's garden as they are in their native country. Would it be believed that every winter they are covered with a thick coat of rank horse manure, the very thing that experienced Lily growers have so often said is the worst that can be used for this Lily? In the present instance the shoots are coming through the manure covering very strongly with that deep

tinge of red in them that they only have when the bulbs and roots are in the best condition. The soil is rather light, having that black appearance which it takes after being cropped with vegetables for a number of years. I should say that this garden has been under cultivation for quite a century, and in every case where I have found this Lily retaining its vigour for a lengthened period the soil has been cultivated for many years. It is just possible that ground which has been worked about a long time is better fitted for some Lilies than the maiden loam and freshly-dug peat that are considered the right thing for *L. auratum*, *L. speciosum* and some other kinds. In any case the experiment could be easily tried where carefully prepared composts have failed to induce longevity. Of one thing I feel assured, *i.e.*, that *L. auratum*, *speciosum* varieties and *longiflorum*, in common with *candidum*, love a gritty soil. The roots come through our damp winters much better in sandy soils and the bulbs themselves are less likely to decay. Experienced Lily growers generally recommend rather deep planting and a shaded position. I wonder whether if in our cool, moist climate this is quite the right thing to do. In very light sandy peat and in elevated situations, I should say the bulbs may be safely set quite 6 inches in the ground; indeed, they would probably be benefited thereby, owing to the greater amount of moisture available for the roots during the summer months. In low-lying situations and in the colder districts of this country, I doubt if the bulbs can mature sufficiently if deeply buried or if placed where they cannot feel the influence of the sun's warmth. The bulbs above mentioned as having done so well are not more than 3 inches under the surface, and, although sheltered from easterly and northerly winds, they get the full sun during the hottest hours of the day. Provided the roots can get abundance of moisture, it does not seem to matter how much sun the plants get.

J. C. B.

FLOWER GARDEN NOTES.

WORK indirectly associated with flower garden operations that has occupied attention during the past week has been the examination and repair, where these were necessary, of all home-made structures used in the hardening-off process. Where sufficient cool houses and pits are not available, such structures are very useful in a garden. Besides affording temporary shelter to summer-bedding plants, they are respectively occupied at other times by Azaleas, Chrysanthemums, Strawberries, Viola cuttings, or the earliest pricked-out batch of Cabbage, Cauliflower, and Brussels Sprouts. The skeleton frames are made of Fir poles with cross pieces sufficiently strong to bear the weight of cloths, whilst the enclosed pits are formed by driving in pieces of quartering at intervals of about 6 feet and fastening boards on either side, the pit itself being made of the necessary width to allow for the particular covering material used. There is nothing better for this purpose than the dressed canvas cloths and old lights, or even stout laths will be quite sufficient to keep the covering in position and clear of the plants. With such accommodation, late vineries or Peach houses may be cleared of bedding stuff by the middle of March.

ZONAL PELARGONIUMS IN POTS.—If there are certain positions in the immediate neighbourhood of the dwelling house, or on lawns where groups of plants are required during the summer months, zonal Pelargoniums must be largely relied on, especially if the situations are somewhat bleak and exposed, and plants that were propagated twelve months ago for winter flowering, and that furnished a goodly supply of bloom during the dull months, may be used again for summer work. We store them away on shelves in a cool house, withholding water from about the middle of February until the present time. Now they are taken and headed back, and, after the old soil has been removed to a depth of some 3 inches, top-dressed with some good loam with which a fair pro-

portion of artificial manure has been incorporated. The plants get a start in a little warmth and make capital stuff by the beginning of May, and with liberal feeding will flower well all the summer. They make very pretty groups with the addition of a few Palms in the way of foliage and a slight mixture of such taller things as *Campanula pyramidalis*, *Gaultonia candicans*, and *Francoa ramosa*. There are so many good things now in zonals, that to give a list of all those suitable for the purpose under consideration would occupy far too much space. We grow nearly fifty varieties, and nearly all, both single and double, might fairly be described as free bloomers, compact in habit, of good constitution, and fine alike in pip and truss.

BOXES AND VASES.—If steps were taken to provide plants for these as suggested some weeks ago, they should now be thoroughly good stuff, and if there is a double set of boxes, *i.e.*, for winter and summer work, the latter may be planted at once. I am always a little diffident about trying novelties in connection with this particular branch of flower gardening; boxes and vases want to be so thoroughly well furnished, that any miffy subjects should always be excluded. We shall, however, dot in a few plants here and there this year of the new Butterfly Pea, and if it gives promise of being satisfactory, its immediate neighbours can be cut out to give room. Two faces are often required for window boxes, and where this is so, they want carefully planting. It is often advisable to let the inner face consist largely of scented plants, one box, perhaps, of *Mignonette*, another of *Harrison's Musk*, another of *Heliotrope*, alternating with the woolly *Gnaphalium*, *Mangles' Pelargonium* and lemon-scented *Verbena* (kept pinched) and such like. *Begonias* and *Petunias* also make grand box plants, either entirely by themselves or with a centre row of some free-flowering *Fuchsias*. *Marguerites*, both the yellow and the white, are often in considerable request and will monopolise nearly the whole of the box, with the addition of some trailing plants, of which, as previously suggested, about the best are the most trailing of the Ivy-leaved *Pelargoniums* and the *Campanulas*. Apropos of the *Marguerites*, young plants must be dewed over occasionally with a weak solution of paraffin to ward off the attack of the fly that is responsible for that destructive maggot. I may add that in all matters connected with vase, window-box or pan planting, or anything that, being in the immediate neighbourhood of the mansion, is constantly under the eye, the aim should be to study individual tastes and do the thing thoroughly and well, whether it be in masses of bright colour or in quieter arrangements.

DAFFODILS.—This is an early Daffodil season, especially where the bulbs have been partially (naturally) protected, and it is interesting and instructive to note the difference in time of flowering between those quite out in the open and in sheltered nooks on the pleasure ground. One large clump of *obvallaris* protected by a good layer of autumn leaves broke early and very strongly through the soil, and was a mass of flower quite early in the month. Some few seasons back, when naturalising Daffodils in our pleasure grounds, a special feature was the clothing of bare spaces under evergreen Oaks and Lebanon Cedars with masses of *Hypericum* dotted over with the old double Daffodil, and although (the soil and situation not being altogether to their liking) they have not done so well here as in other more favourable sites, the result has been fairly satisfactory. We cut over in good time the old foliage of the *Hypericum*, so that the Daffodils, instead of making their way through tall old stems that would in a measure hide them from view, come up above a carpet of bronzy green, the tint almost peculiar to the young growth of the St. John's Wort. Nearly all tree and shrub life has also felt the influence of these genial early days of March. *Ribes aureum* is at the time of writing (March 13) in full flower; this makes a pretty group contrasted with the better-known sanguineum, and is, I think, even more powerfully scented than that variety. *Prunus Pissardi* is well in flower on a sheltered slope, also *Forsythia suspensa* and the buds of *Spirea prunifolia* fl.-pl. are on

the point of bursting on a south wall in the flower garden. The white form of *Pyrus japonica* has already half its blooms expanded and is making a grand show. I think it is a little earlier than the common *japonica*. We have taken advantage of the dry week just passed to run the hoe through the herbaceous borders, and in some cases where very troublesome weeds, as Couch Grass, the equally objectionable ground Elder and wild *Convolvulus* are showing their points, the aid of the fork is called in. In acquiring new stock if it be in clumps, one often gets the benefit of a bit of one of these foes, and if it happens to escape the eye at planting time it is not easily dislodged. If any herbaceous plants whose root-action and tenacity in holding fast to their position are almost on a par with the weeds mentioned above were autumn-lifted, the ground will want forking more than once before other things are planted, or one will be sure of a mixture. I noticed to-day some vacant spots from which *Hemerocallis flava* and *Achillea rosea* were cleared, and found many odd bits of both these holdfast plants making their appearance. Outlying shrubberies of deciduous-flowering shrubs that were slightly pruned and partially cleaned back in the winter have also had the hoe run through them. Here at convenient spaces between the shrubs we make a point of growing a few tall-flowering, common plants that in their respective seasons come in admirably for tall vases. *Gladiolus branchleyensis*, Foxgloves in variety, *Lilium tigrinum*, and *Lilium candidum* are examples of these. With respect to the last-named, it may be well to note that if there is any danger to be apprehended from the disease, it is well to take early precautions and dust occasionally with anti-fungoid. One often saves the spikes of bloom by this means even if the foliage is badly affected.

E. BURRELL.

Claremont.

A BORDER OF DAFFODILS.

Few more charming pictures can be seen in a garden than a border of Daffodils skirting an old-fashioned brick wall. A border full of Daffodils one never tires of, especially if a number of varieties is in the collection, and extending the season of flowers from the time of *N. pallidus præcox* until the last of the Poet's *Narciss* have faded. Those who visit the Royal Gardens, Kew, during the next few weeks should see the border of Daffodils in the herbaceous ground, which may be now approached from the recently constructed way from the fine rock garden. The broad border that skirts the old-fashioned wall is given up to the various forms of *Narcissi* in the spring months, and a succession of flowers ensured by planting between the bulbs masses of the best annuals. This border is a picture of colour from now onwards, and is an object lesson in Daffodils to those who wish to know more about their favourite flowers. Each section of the *Narcissus* is represented by large clumps of the finest varieties side by side, so that one may readily make comparisons as to the difference between the several varieties and their value for making a brave display of colour in the garden. It is not everyone that cares to wade through five or six hundred varieties, many of them distinct in name only. A large break of the hybrid *N. Bernardi* will be noticed for its extreme variability. *N. Bernardi* was found by Mr. Barr growing with *N. poeticus* and *N. Ajax variiformis*. Several double kinds are now in full bloom; also the pleasing *N. tridymus*, a very distinct *Narciss*, dwarf and free, its flowers of a good yellow colour. The milky-white *N. cernuus* was pleasing at the foot of the wall, and this illustrates how carefully the border was planted, as it is in the drier, more sheltered spots that such forms as this succeed most satisfactorily. Note was made also of *N. Nelsoni*, a very fine type, and a form of *N. pallidus præcox* named *asturicus*. It is, like the parent, very early, and most charming when seen at the base of a wall, the bulbs succeeding well in the light soil and warm position. The

flowers are of refined expression, pale in colour and almost white, but with a tinge of sulphur-yellow. To get effect one wants bold flowers, and amongst the forms in bloom on this border of Daffodils is *spurius coronatus*, which bears a splendid trumpet, broad, and of the richest yellow colour. Golden Spur is well known for its richly-coloured flowers and earliness, and mention may also be made of two very good early-blooming Daffodils, Golden Plover and Henry Irving. Both have bold, handsome trumpets, very rich yellow in colour and showy, a fine contrast to the broad segments. A colony of dwarf forms added to the beauty of this border early in the season. *N. cyclamineus*, *N. minor*, *N. nanus*, and others are in bloom, and if a charming kind is required for edging or to form a perfect mat of flowers, choose *N. minor*. It is a dainty type, flowering so freely that the leaves are almost hidden beneath the golden flowers. These brief notes upon a very interesting feature at Kew may be of value to readers of THE GARDEN who wish to know more about the Narcissi than may be gathered from private places, and have no desire to walk through acres of them in some of our great nurseries. But at Kew they are conveniently gathered together for study, and at the same time botanical arrangement has not sacrificed the beauty of the border.

DELPHINIUM GRANDIFLORUM BRECKI.

THE plant represented in the engraving on page 266 was just 2 feet 1 inch above the pot, and being grown in a pot under glass its tendency would be to become drawn. This is without exception the most charming blue Larkspur in cultivation either for planting in the mass or for cutting. It was raised over twenty years ago by the late Hon. Joseph Breck. It is of very dwarf habit, bushy and compact, and will keep on blooming for several months. The colour is a very dark blue.

The Nurseries, Hawick. J. FORBES.

SHORT NOTES.—FLOWER.

A note on Pentstemons.—I am afraid I must break a lance in favour of *Pentstemon Richardsoni* as against *P. diffusus*. I consider, as I have seen this, that the former is the best in habit, duration, free flowering, and even colour. I have grown it many years, but it never seeds. *P. diffusus* does, both here and at Cambridge and in many other places.—W. T. Ipswich.

Harrison's Musk.—I find no difficulty in keeping the roots of this through the winter if lifted in the autumn, placed in ordinary cutting boxes in rather sandy soil, and kept fairly dry in a frost-proof pit or frame. At this time of the year the boxes are placed in ainery just started. Here young shoots quickly spring up and make sturdy cuttings. I employ this Musk rather largely for carpeting.—E. M.

Iris persica purpurea is an interesting variety and very distinct. A number of bulbs were recently in bloom at Tottenham, the flowers similar to those of the species in form, but of a warm rose-purple colour, with yellow on the falls. It is not so pretty as the type, but the lover of these early-flowering Irises who wishes for a collection should have it, as it is remarkably distinct. As in the type, the flowers are fragrant, but not so strongly scented. One point in its favour is that it is hardier than the type, whilst the growth is more vigorous and the flowers are produced rather earlier. We are indebted to Max Leichtlin for it, he having introduced it from Asia Minor in the year 1889. When planted in the open, select a sheltered position and a warm light soil.

Hardy Primulas are commencing to flower freely, and already a few species are in perfection.

Ontheroceryx at Kew *P. denticulata* is in full bloom, and *P. rosea* is opening its crimson-rose flowers on plants in boggy soil. This species loves moisture, and is pretty by the side of water when planted freely. The finest species now in flower is *P. Clusiana*, of which there is a dense mass on the rockery on a sloping position, where the soil is sandy and the position sunny. Stagnant moisture is fatal, and bits of sandstone about the collars of the plants are helpful. A good group of *P. Clusiana* is a pleasing picture on a March day, the large rose-purple flowers being produced abundantly and making a fine show of colour. In the hardy plant house we noticed in bloom *P. calycina* and the charming *P. pubescens alba* very fine in a large pan, the flowers pure white except for a tint of lemon colour in the centre.

ORCHIDS.

DENDROBIUM LITUIFLORUM.

I AM in receipt of flowers of a fine variety of this species from Mr. G. Lamont. He says, "The flowers sent are from a plant brought home by me a year or two ago from Upper Assam. Many of the stems are nearly 3 feet long, and it now has nearly 200 blooms open. What is your opinion of the plant? Can you tell me the name? Hanging in my stove it is very beautiful." The name is given above, and such a plant as described having nearly 200 flowers upon it must be very charming. It is a magnificent variety of this beautiful kind, which in the earlier days of Orchid growing was known by the name of *D. Hanburyanum*, it being so named by Reichenbach through its first flowering in the collection of Mr. Robert Hanbury; but I think Lindley's name of *lituiflorum* was published first, so the German professor's name becomes a synonym. It remained rare in collections in this country until 1872-73, when I received a large consignment of it from Upper Assam. Amongst these was a plant having pure white flowers. This, however, did not long survive the journey. This form I saw a short time ago growing in the Burford Lodge collection under the name of *candidum*. In a year or two after this *D. lituiflorum* was again introduced by Mr. Wm. Bull, of Chelsea, and with it a short, erect-growing plant bearing a similar flower, which obtained the varietal name of *Freemani*. *D. lituiflorum* is a pendent species, some of the stems of the plants imported by me having been each 3 feet and 4 feet in length. It should be grown in a hanging basket or pot, but the basket will be the more suitable. The basket should be well drained, using for soil living *Sphagnum Moss* and a little good brown peat fibre. During the summer months, its growing season, plenty of water must be given it at the roots and a liberal allowance overhead, as I find it is very liable to the attacks of red spider and black thrips, and if these get a hold they soon cause much injury. At the end of the growing season much less water will be necessary, and the plants must be moved to cooler quarters. Sufficient moisture will be necessary, however, to keep the stem-like pseudo-bulbs from shrivelling. It will shed its leaves and the buds will push out from the pseudo-bulbs usually in the month of April, when it should be placed in a warmer position and receive more water again, when the flowers will swell out and expand in all their beauty. The plants as soon as the flowers are past should be re-surfaced and started into growth. There are one or two reasons why this plant is scarce. One is from growing it upon a block of wood and neglecting

it in the matter of watering, when the growths dwindle away and die. Another reason is from exposing it to the full sunshine, which it cannot stand. The plant requires abundance of light, but it must be shaded from the glaring rays of the sun. If this plant is kept well drained and the Moss and peat about it in a sweet and sound condition, I know of no reason why it should not live as long as *D. nobile*.

WM. HUGH GOWER.

Dendrobium sulcatum.—W. H. Burt sends a truss of bloom asking if it is not *D. densiflorum*. It is not, the raceme being much shorter and the individual flowers smaller than those of *D. densiflorum*; the flowers, too, differ somewhat in shape and colour, but the habit is quite distinct. *D. sulcatum* has flattened stems from 9 inches to a foot long. These are much ribbed and bear near the summit several good-sized deep green leaves. It is not so desirable a plant as *D. densiflorum* from a decorative point of view, but as a distinct species it is well worth a place in any collection. The plant comes from Northern India where it was first found by Gibson now nearly sixty years ago.—W.

Lælia harpophylla.—John Fuller sends me a box of blooms of this species, saying the plants producing them have all been grown in the cool house with the *Odontoglossums*. This I do not doubt in the least, for I believe in keeping this species somewhat cool. I have frequently seen this Orchid grown with other cool house plants, but Mr. Brown, in charge of Mr. White's collection at Arddarroch, lately sent me a spike bearing six splendid flowers. None of Mr. Fuller's spikes have more than three flowers, and if this is brought about through reducing the temperature, then I say that a slight increase is highly beneficial. I have been shown plants of this species which had been subjected to several degrees of frost. These flowered, but I am sure they never produced spikes bearing half-a-dozen blooms.—G.

Dendrobiums from Rawtenstall.—From "J. G. R." comes a collection of these bright and beautiful flowers for an opinion. Amongst them is *Wardianum candidum*, a beautiful flower, the sepals and petals of the purest white, as is also the lip, saving the base, which has the usual deep orange and the two deep eye-like spots. This form is wrongly named *album*; the true *album* is quite destitute of the eye-like spots. *D. nobile elegans* is a fine flower, having a deal of colour in the sepals and petals and a deep blotch of maroon in the lip. No. 3 is similar to the last named variety, but is a finer flower, being larger and more heavily marked. No. 4, *D. Backhousianum superbum*, is a brilliant form, with very deep and brightly coloured sepals and petals. No. 5, *Cooksoni*, is a magnificent flower, the two petals heavily coloured similar to the lip. No. 6, *D. Sanderianum*, is a very bright and handsome form. No. 12 is *album*, a white form of the species, but not so handsome as *albescens*, recently received from Mr. Evans, of Bristol. The above are all varieties of *nobile*, and very grand and handsome they are. No. 8, *D. splendissimum*, is not so fine a form as one recently received from the Rev. Mr. Handley. No. 9 seems to be a form of *Ainsworthi*, and No. 11, *chrysodiscus*, is a poor form of this hybrid—at least, I recently saw it much finer with Sir Trevor Lawrence, its raiser. These flowers serve to show what a splendid display these plants must make. The form of *D. crassinode album* I fail to find amongst them, although I see the name on the list. I should also be glad to know the name by which No. 3 is known.—W.

Orchids from Cheltenham.—Mr. Cypher, of the Queen's Road Nursery, sends me some richly coloured forms of *Odontoglossum Rossi*, the sepals more or less deeply banded with chestnut-brown, the upper half of the petals and the lip pure white. These flowers individually measure fully 3 inches across. With these are some very large and excellent varieties of the old favourite *Dendrobium*

nobile. Amongst them is a very light variety with large flowers, having a very deep maroon blotch at the base of the lip. *D. nobile pendulum* is a fine well-marked flower, remarkable for the very long footstalks. Some flowers, too, of a large-flowered form of *D. Findlayianum*, with a deep yellow lip, the bright orange-yellow-flowered *D. fimbriatum* and its variety *oculatum* are also included. Blooms also of *Odontoglossum Cervantesi* and its variety *decorum*, of fine size and with a great deal of colour, were also sent.—G.

A charming *Dendrobium* in bloom in the Orchid house at Kew is *D. cretaceum roseum*, which is grown near the glass, and the leafless pseudobulbs are smothered with the tenderly coloured flowers. The sepals and petals are rose, and the bold lip of a primrose colour margined with soft pink. It is one of the most beautiful of the *Dendrobiums*, very free and cheerful in colour. The type is a native of the East Indies, has white flowers, which appear in the summer months.

Dendrobium amethystoglossum.—"B.J.M." sends a part of a raceme of this plant which he says came from the Philippines last year. It was from the same islands Messrs. Veitch received it about twenty years ago. I have seen the plant in one or two collections. It always struck me as being very ugly and the racemes short. The flowers are small, individually about $1\frac{1}{2}$ inches across, the sepals and petals and the base of the lip pure ivory-white, the front portion of the lip of a clear rich bright purple. The plant still remains scarce in this country. The flowers appear to last a considerable time when cut and placed in water.—W. H. G.

Cymbidium eburneum.—This plant is now blooming freely at Cheam Park, the specimen having about eight large ivory-white flowers expanded. I was told it had had more, but that some had been cut. This plant sometimes produces two and three flowers upon a single stem, but I think they have a nobler effect when produced singly. The whole flower is pure ivory-white, saving a stain of yellow on the lip. The plant should be potted in good light turfy loam and peat. In the summer time it may be grown in the coolest house, placing it in the Cattleya house during our coolest months, when it flowers.—W. H. G.

SHORT NOTES.—ORCHIDS.

Cattleya Schroederæ.—This is now blooming very freely in Mr. Jacob's garden at Cheam Park. This plant, figured in THE GARDEN, July 11, 1891, is very distinct, the flowers even being sweeter scented than those of the variety *chocoensis*, which usually is considered the most fragrant of all the *Trianae* section.—W.

Cattleya Trianae.—From Mr. Carr, Croydon Lodge, come two fine forms of this plant asking for names. I am unable to name every flower that comes under my notice; suffice it to say they are both exceptionally good varieties. The *Dendrobium nobile* flowers from the same grower are also very good, but they are exceeded in size and brightness of colour by others now to hand.—W.

Chysis bractescens.—I have received flowers of this plant from several readers. I recently saw a plant bearing eight trusses of its large pure white flowers, which are stained with yellow on the lip. I do not know why the varieties of *Chysis* are not more popular, as they flower freely. Each shoot, if sufficiently strong, furnishes a truss of bloom, the individual flowers being of good size, very showy, and lasting a long time in perfection. The varieties of *Chysis* require the heat of the Cattleya house.—W. H. G.

Phaius tuberosus.—Mr. Kerslake, in reply to my inquiry in last week's issue as to how he grows this plant, says that he uses a mixture of Sphagnum Moss and good brown fibrous peat. The plants, hung up near the roof-glass over a heated tank of water, are shaded from the direct rays of the sun and lightly syringed twice in the day, a liberal supply of water also being given to their roots. The temperature ranges from 75° to 85° with sun heat. Mr. Kerslake likewise adds that the yellow thrips are very fond of this plant.—G.

MARKET GARDEN NOTES.

SPLENDID weather for seed-sowing has lately prevailed, and rapid progress has been made with all early crops, the land being in excellent condition. Severe frost in January, followed by exceptionally heavy rains in February, and bright sunshine and drying winds in March, has brought the soil into good working order. The most important operations now on hand are the following, viz. :—

ASPARAGUS.—New beds are being prepared in readiness for planting, as the most favourable time for that work is when the young plants have made shoots a few inches in length. Older beds are being lightly pricked over, and all stones and rubbish removed from the surface, a dressing of salt being applied at the same time.

BROAD BEANS.—The main crop of Broad Windsor Beans must now be planted. Very few are grown for late crops.

BROCCOLI.—The white early kinds are now plentiful, and realise good prices; late crops look remarkably well. Seed of both early and late kinds is now being sown in open-air beds.

BRUSSELS SPROUTS are being cleared off the land, as the growing weather causes the sprouts to become loose and of little value. Plants that have been raised in boxes are being pricked out for the earliest crop, and seed sown in the open for main, and late crops. Home-grown seed is now mostly used.

CABBAGE.—Early autumn-planted crops are now growing rapidly, and will soon be fit for market; hoeing and dusting with soot are being done, and successional crops put out from plants left in the seed beds all the winter.

CAULIFLOWERS.—Plants wintered under glass are being put out on warm borders, deep drills being drawn to shelter the plants from wind. Spring-sown plants raised under glass are being pricked out, and form a close succession to the autumn-sown plants.

CARROTS of the Early Horn kinds are largely grown on gentle hotbeds under glass. They are bunched directly they are large enough for use, and the frames utilised for Cucumbers.

ONIONS.—The main crops are now being sown; the soil having been roughly ridged up for some time is forked down, and as soon as the surface is dry shallow drills are drawn and the seed sown thinly. Late-keeping kinds, such as James's Long Keeping and Bedfordshire Champion, are in the greatest request.

PEAS for main crops are now being sown. Large wrinkled Peas of medium height are the greatest favourites, Stratagem and Pride of the Market having quite superseded the round white varieties.

POTATOES.—The preparation of the soil for the main crops now occupies all spare time, and there will doubtless be a very large area planted this year, for although the price per ton has not been high, there are few crops more reliable than Potatoes. Emperor, Reading Russet, Windsor Castle, and Magnum Bonum are all largely grown.

RADISHES are an important early crop both under glass and in the open. Great quantities are now being brought forward in open-air beds, covered at night with litter. The scarlet short top and French Breakfast are the sorts most grown, but for later crops the round Radishes are best.

RHUBARB is now coming in from open-air beds where the crowns have been covered with litter. The early dark crimson varieties are in most request.

TOMATO plants are being pushed on in quantity both for growing under glass and for planting against walls and trellises, for unless the plants are well advanced when put out in May there is little chance of getting the crop ripened off before frost comes on.

FRUIT GARDENS AND ORCHARDS present a very promising appearance, bloom buds being both abundant and strong, and unless we get some ex-

ceptionally bad weather when the bloom is expanded, we shall probably get a heavy fruit crop. Wall trees that are fast coming into bloom are having protection in the shape of double fish nets placed over them, as cutting winds are even more to be dreaded than actual frosts. Strawberries are pushing up strongly, the beds are being cleared of weeds, and the soil trodden firmly round the plants.

JAMES GROOM.

Glossport.

GARDEN FLORA.

PLATE 903.

TEA ROSE CORINNA.

(WITH A COLOURED PLATE.*)

An interesting fact was indicated by the notes that Mr. Grahame contributed to the last volume of THE GARDEN on Roses of the last decade, namely, that our own raisers were not far behind those on the Continent in the number and quality of their additions during that period. Comparisons between the two cannot be made numerically, for those of us who annually receive from abroad a goodly list of novelties know well that many of them are of little value, whilst, on the other hand, the comparatively meagre numbers that our home raisers offer as a matter of fact yield a percentage of good kinds almost or quite as high. In a general way Roses of English origin always justify a trial, and usually become standard kinds. Moreover, we generally know something of them and their merits before they come into commerce, as the flowers appear at the shows and may be seen in the nurseries of those who have them. This is true of *Corinna* in any case, and although it is only now about to be put into commerce, it is known well enough to many of us, and good opinions have been formed concerning it that it doubtless will fully justify. Its flowers have been before the public at various times since 1891, and therefore by this time there is doubtless an abundant stock of the kind to meet the demand that assuredly exists for it. Although we do not desert or lightly regard our old and well-tried kinds, there is a special delight, as each Rose season comes round, in anticipating the flowering of new kinds that have been purchased. I knew nothing of *Corinna*, or even that there was such a promising new kind, when visiting Waltham Cross two years ago, and therefore, if the chief merit of any new kind is its distinctiveness, it is strong testimony in its favour, that espying from a short distance a glow of wonderful colour upon a breadth of standard plants, I immediately asked what the kind was and quickly made my way to the spot and inspected it. The plate does ample justice to the rich and lovely colour of the flowers. As in many other Teas, the subtle blending of soft hues almost defies adequate description. The body of the flower is of a soft flesh colour, and about the base it is deeply suffused with a distinct copper shade, whilst a flush of rich rose gives a glow of brightness to the edges of the petals. It may be compared with *Luciole*, which, lovely kind as it is, has, unfortunately, a lack of robustness, and is only suitable for favoured gardens. *Corinna* promises to give us the same wonderful colour, combined with a vigour, freedom and hardness that will permit all who can grow Tea Roses at all to have and enjoy to the full the unique beauty of this kind. The flower is borne on a sturdy

* Drawn for THE GARDEN by Marie Low in Messrs. Wm. Paul and Son's nurseries, Waltham Cross. Lithographed and printed by Guillaume Severeys.



erect stem, is of the average size and has a fair amount of substance. Upon the plants I saw, disbudded shoots were carrying fine, well-formed flowers; whilst others not disbudded were laden with blooms in clusters that plainly indicated the undoubted merits of the kind for the garden, even if it eventually comes short of the exhibitor's standard of merit. The bold half-opened bud surmounting rich leafage (as shown in the plate) is truly characteristic of the kind. There is a good list of Roses that have emanated from the Waltham Cross nurseries during the last thirty years, but Teas are quite in the minority. One of these last—Sappho—sent out a few years ago, was well received at the time, but it comes very near Francisca Kruger. Corinna is an acquisition with distinct merits that go far beyond casual and minor points of resemblance to other kinds, and I may safely say it is by far the best Tea Rose that Mr. W. Paul has sent out.

A. H.

THE WEEK'S WORK.

HARDY FRUITS.

FIGS.—Once more many of the unprotected points of wall trees have been badly injured by frosts, not a few of the hardier short-jointed young growths on trees quite in the open also being crippled. What young shoots have escaped are well furnished with embryo fruits at the points, and in pruning, these ought to be saved as much as possible. Protected trees should not be too hastily exposed, especially where the fruit is forward, but the time has now arrived for completing the pruning and nailing. Some of the longest and most naked branches ought to be cut back to younger shoots, this being done with a view to keeping the centres as well as the ends of the trees well furnished with bearing wood, and thinning out generally is advisable, crowded branches being neither hardy nor fruitful. If close training is resorted to, and it answers well if properly carried out, lay all in neatly, taking good care that the young or bearing shoots are not less than 6 inches apart. Where the points are allowed to set out from the walls, a certain amount of thinning out should be done, and all the main branches ought to be securely fastened to the walls by means of strong strips of leather. On no account take out the points of stout young shoots, as it is on these where this year's crop of fruit will be principally produced. Clear away the bulk of sucker-growth from about the stems of the trees, this not being the best kind of wood for laying in. Trees badly injured by the frost should have all dead wood cut out, but as a rule it is not advisable to cut sound wood back more than is needed in the way of thinning out. Harder, short-jointed, more productive shoots are produced from lightly-pruned branches, those springing from near the ground being gross, unfruitful, and the most liable to injury from frosts. Once they are cut down to near the ground by frosts, it frequently takes several seasons to bring them back to their old productive state, and that is a strong argument in favour of affording protection every winter.

PLANTING FIG TREES.—Now is perhaps the best time of the year for planting Figs, and that whether they are already established on the place or have to be bought in. The three hardiest and most reliable varieties for open-air culture are Brown Turkey, White Marseilles, and Brunswick, the last-named being the least productive of the lot. Along the south coast and in the Isle of Wight these Figs succeed well in very many places without the protection of walls, but in the more inland and less favoured localities they must have this shelter, the hottest corner in the garden suiting them best. Anything in the shape of a strong

or rich soil is unsuitable for Figs, being certain to cause a rank growth, which, as already pointed out, is the least calculated to do good service. Where Figs succeed best is on the more chalky soils, and if chalk cannot be freely mixed with the soil used, old mortar rubbish ought to be substituted in either case to the extent of one-third of the bulk. The rest may be either fresh loam or a mixture of subsoil and top spit of garden soil. Should the subsoil of the site be of a heavy, clayey nature, the Fig roots ought to be prevented from striking down into this, a layer 6 inches thick of either chalk or mortar rubbish being placed in the bottom of the hole for that purpose. Always plant rather high, that is to say, in a raised border, and if the roots are eventually allowed to ramble, it ought, if possible, to be through a hard path. Some of the most profitable trees are those with their roots somewhat confined and kept active near the surface by means of top-dressings of loam and chalk or mortar rubbish and a little solid manure. The trees are usually supplied by nurserymen in pots, and prior to being planted should have their roots carefully uncoiled, very lightly pruned where broken, and then spread well out into the soil, making the latter quite firm. Mulch with strawy litter. Trees with a clear stem are to be preferred, and no more pruning than is necessary for laying a good foundation should be resorted to. Train in the shape of a fan.

UNCOVERING GOOSEBERRY BUSHES.—Growth is very early this season, many of the bushes coming into flower by March 21. At this stage they are rarely, if ever, interfered with by birds, and some portion or all of the protective covering may now be removed. Where there is a frame-work covered by either galvanised wire netting or fish nets, only the sides need be wholly or partially cleared, the aim being to let insect-eating birds, including the cuckoo (when it comes), have free access to the bushes. The cuckoo is one of the few birds that prey on the Gooseberry caterpillar, but if smaller birds do their duty, the parent flies will be largely destroyed, and but few grubs be seen in consequence. Those who tie up the bushes in the form of a cone ought to have let them down into their natural position ere this, and what little pruning is needed may be done now, or else be deferred till the fruits are large enough for cooking, the shoots cut out being cleared of the fruit as the work goes on.

LATE GRAFTING.—Sap movement has commenced somewhat earlier than usual, and much grafting has already been done. It is not yet too late to do this important work, especially if the scions have for some time back been kept half plunged behind a north wall or in a cool site of some kind. The sap should be well on the move in the case of the stock, and only just moving in the scions. Old orchard trees having had the principal branches lightly shortened back may have one or more grafts inserted in all these, this being the means of quickly changing their character for the better without having to wait for crops. Leave some of the spray or smaller growths thinly about the headed-back branches, these serving to keep the roots active till the scions are growing strongly, when they should be cleanly cut away, as being no longer needed. If preferred the limbs may be sawn off still nearer the trunk, and instead of one or two grafts being inserted, five or six may be used, but in this case the trees are much longer in arriving at a serviceable state. In all instances where the stocks are considerably larger than the scions, crown or rind grafting is the best method that can be tried, but if small seedlings or suckers are grafted, then what is known as whip grafting is to be preferred. Plum stocks of any kind may be grafted with either Peaches, Nectarines, Apricots, or Plums; Crab and Paradise Apple stocks with Apples; Quince and Pear stocks with Pears, and the Mahaleb and wild Cherry stocks with Cherries generally. It is not too late to head back the branches on horizontally-trained Apple and Pear trees, regrafting with some other superior variety. One side, or even every other branch, may be done this season, completing, if desirable, the rest of the tree next spring. There is

nothing to prevent grafting several varieties on an old tree, and new life may be put into stunted ends by shortening back the old wood lightly and re-grafting with healthy scions.

W. IGGULDEN.

PLANT HOUSES.

STOVES.—GENERAL CULTURAL NOTES.—By this time, with the advent of such remarkably fine weather, most of the stove plants will be making good progress in growth. As this progresses, it will require all the more ingenuity to avoid injury to them by overcrowding. It is far easier to winter the plants and grow them for a few weeks in the early part of the season without harm, but when such as Caladiums and other fast-growing plants want additional room, something must suffer unless there be an outlet in other houses for a few things. For instance, plants that have been doing good service through the winter should be found room for elsewhere, so that the stove itself is mainly devoted to plants for the summer and more immediate uses, and to permanent occupants, of course. A deal may be done by elevating specimens upon pots; this will be not only to their own good, but be better at the same time for smaller ones. No old or superfluous foliage should be allowed upon Marantas and Alcasias now; this may all be thinned down gradually as young leaves appear. Nor should Ferns be permitted to carry old fronds to any great extent. By their removal the brown scale will to some extent be prevented from getting a foothold upon the younger ones.

The shading will now be needed for a few hours during each day, but do not apply it either too early or leave it on too late in the day. If this be done, it will entirely defeat the object in view, which should be that of securing such a growth in any case as will stand the maximum of sunlight before shading is applied. Too much shade at this period means a weakened growth, or at least an attenuated one in shoots and leaf-stalks. To some plants it is absolutely ruinous. Allamandas, Bougainvilleas, Dipladenias and Clerodendrons are examples of this, nor do Ixoras require it unless in pits quite close to the glass. The best way to arrive at a solution of the question of shading is to so arrange the plants that one part of a house can be shaded, whilst the other part for the present has none at all, then arrange the plants accordingly. Flowering plants, on the whole, will be better without it, whilst those grown mainly for the beauty of their foliage will be safer with it during bright sunshine. Those who do not use roller blinds, but have to depend upon daubing the glass with some mixture or other, must be careful what they are about. Let this composition be what it may, it is in no sense comparable to blinds. In its application the common mistake is to apply it far too heavily; the merest possible coating will be sufficient, at least for the present, it being better to add more later on. When applied, it should be stippled (to use a painter's term) by dotting it all over with a large painter's brush, so as to equalise its density. Those who depend upon this method will do well to apply the slightest amount and note its effects.

In spite of the fine weather and increased temperatures, it will not do to be led away with the idea that a proportionate increase is needed in the requirements of the plants as to watering. If a plant does droop a little about now, it is often from other causes than the want of water, newly-potted ones more particularly. Some with a good amount of roots will take a fair quantity—Caladiums, for instance, of the herbaceous section, and Palms of the evergreen class. Plants that have not been potted this spring, but whose roots are known to be in a healthy state with the growth now active, will of course take more water. In no case should Palms be allowed to suffer. I would rather err on the side of slightly too much water than let them suffer from want of it. More Palms suffer by far from drought than a goodly number of growers imagine them to do. In hardly any case will manurial stimulants be found needful

yet; leave these alone for a time, and let the plants depend more upon the good properties of the soil. When used too early in the season there is a greater risk of souring the soil than there is the possible chance of rendering assistance to any plant.

The atmosphere of the stove should now be made more congenial to plant growth by more frequent dampings down, by increasing the use of the syringe, and by always keeping the evaporating pans filled up. If the plants during bright sunshine do apparently suffer somewhat, it is a far better and safer plan to bedew them with the syringe than to apply water to the roots. This may be done without any fear of injury, even if no shading is used; in many cases the plants even seem to delight in it. A difference must, of course, be made between dull and bright weather as to artificial atmospheric conditions. If this be not attended to, the growth made during a dull period will naturally suffer more when the sun shines again. The temperature of the stove proper should not yet be increased too much at night. If it be still cold and frosty when this appears in print, 65° is much better and safer than anything higher at banking-up time, so arranging the stoking as to maintain nearly that standard through the night. With milder weather 68° may be the average; in no case need it be exceeded. The day temperatures may run up to 85° when the house is closed. The airing should be attended to with caution. With no blinds upon the roof to check a rapid inrush of cold air, a strip at least of shading material will do good service by being tacked over the ventilators where the houses are situated in exposed situations. A few degrees less than those already quoted will be ample for what are usually designated cool stove plants, or where there is no need for hastening the growth. J. HUDSON.

ORCHIDS.

I LEFT off the cultural details last week at the important point of finding the best positions in the various departments for individual specimens. It is all very well to lump the compartments together and define them as cool, intermediate, and hot, but a cultivator must not fancy that all he has to do is to refer to some manual or other on Orchid culture and ascertain which genus or species has to be provided with cool treatment and which requires a warmer temperature. All this information I freely admit is necessary, but it is only preliminary to the numerous other details which I endeavour to set before the readers of THE GARDEN week by week. It requires much thought to ascertain the best positions for even one genus, such as the great class of *Cypripedium*. I often had conversations with the late Mr. Joseph Spyers, when he was Orchid grower to Sir Trevor Lawrence, Bart., about the more minute details of culture and the best treatment of individual specimens. I remember his remarking that he tried all sorts of positions for *Cypripedium Fairrieanum*, a rare species, and was not entirely successful until the plant happened to be placed accidentally under a drip from the roof glass, when the plant improved in appearance steadily. We all of us have a horror of drip, and would speedily remove any plant from under it, and all that a shrewd observer would learn from a plant of any kind doing well under a drip would be the lesson that it ought to have had more water at the time. Again, there are special sections of Orchids even of the same genus which must not be treated alike. The Mexican *Lælias* and *Cattleyas*, as I have before pointed out, require very different treatment from that given to the Brazilian species. Those of us who have had much to do with the establishing of imported Orchids can look back with a great degree of pleasure on the important work done during that period, but with the pleasure there is also the sorrowful remembrance of the many indefatigable collectors who have perished in the arduous work

of collecting. The introduction some fifteen years ago of *Bollea celestis* brought to mind the good work done by M. Roez's nephew, M. E. Klaboch, in sending over in good condition large numbers of *Bolleas*, *Batemannias*, *Pescitoreas*, *Warscewiczellas*, &c. He did not live to see the result of his labours, let alone enjoy them, but he was able to send useful information to Mr. F. Sander, of St. Albans. They were found growing in shady woods well protected from the sun; therefore close shade is essential for them in this country. Next as to the climate, M. Klaboch averred that rain fell more or less almost every day in the year. This led to giving them a constantly moist atmosphere, with the result that Mr. F. Sander cultivated them with a great degree of success in a house with a north aspect. Having no pseudobulbs, they are difficult to import, and many plants die on the journey. Those who may obtain imported plants should plant the live rhizomes in clean potsherds, keeping the crocks constantly moist until the plants start into growth. When roots are formed remove some of the crocks and replace with good fibrous brown peat and Sphagnum. All such plants should be placed in the very shadiest part of the *Cattleya* house. The north side of the house is best, but thick shading is necessary. Such plants almost require a house to themselves, for the dense shade required and moist atmosphere do not suit *Cattleyas*. They never ought to be allowed to get very dry at the roots. Some of the plants will thrive well in baskets, and may be suspended from the roof-glass, others in flower-pots on stages underneath. The very beautiful *Sobralia xantholeuca* and other species of this genus succeed well with the same treatment as the *Bolleas*.

Large numbers of *Oncidiums* and other Orchids of various genera are pushing up their flower-spikes freely, and require constant attention in various ways; for instance, the strain upon the plants caused by the production of flower-spikes is so great, that no time should be spared in caring for the wants of such plants. Some of them produced new roots as well as flowers, and constant watchfulness is necessary to keep any depredators, such as slugs, woodlice, and cockroaches, from destroying these useful roots. Orchids rooting freely and flowering need also fairly plentiful supplies of water. Some Orchids produce their flowers, and when these have passed away, the plants go into their resting period. In that case water must be applied with caution. It may be observed also that some Orchid spikes are liable to be stopped in their growth by the leaves clasping each other. I had some leaves sent to me the other day in this state, inquiring what was the disease and the remedy. In a collection of plants of *Miltonia vexillaria*, for instance, numerous spikes would be spoiled if the cultivator was not careful to watch them. They get caught up in the folds of the leaves, and in the attempt to extricate themselves frequently snap in two, and no flowers can be produced. They must be watched for, and it is easy to liberate them with the ivory end of a budding knife, or a label flattened to a thin edge.

Now that the days are warm when the sun shines, it is the more necessary to see that all plants likely to be injured by too much sunlight are kept on the shady side of the house. We keep the *Miltonia vexillaria* near the glass on the shady side of the *Cattleya* house; the plants should be near the roof glass, but beyond the reach of sudden bursts of sunshine. With this species is linked the pretty little *M. Phalenopsis*. It is not thought so much of now, but I have seen single plants sold for 30 guineas. M. Warscewicz is not a common plant, but it requires much the same treatment as *M. vexillaria*. *Odontoglossum blandum*, *O. nevium majus* and *O. cirrhosum*, also *O. Harryanum*, are wintered in the cool part of the *Cattleya* house, and will be removed thence towards the end of the present month. They are all placed as near as we can get them to the glass, and none of them ever in any way suffer from want of water at the roots, great care being taken to keep the leaves free from thrips and red spider. *Miltonia Roezli* is placed in the same position in the warmest house, and there

the plants remain all the year round, but I fancy they would perhaps be better in the intermediate house in summer. J. DOUGLAS.

THE KITCHEN GARDEN.

FRENCH BEANS IN PITS AND FRAMES.—Where there are any pits or frames at disposal they may well be utilised for forwarding a good batch of French Beans. By having an extended rooting space they will succeed well and produce good crops—in fact, in this latter respect, far exceeding any grown in pots and with not nearly the trouble as regards watering and feeding. All that is required is sufficient warmth in the pipes to maintain a genial heat on dull and wet days, and also to prevent the temperature from falling too low on cold nights. Good crops may even be produced in a two-light or three-light frame set over a gentle hotbed. In this latter case, the plants may be raised by sowing three seeds in a 4-inch or 5-inch pot, and before the plants become pot-bound, setting them out in rows 15 inches apart, arranging the clumps 9 inches apart in the rows. Some loamy and fertile soil, to the depth of 6 inches or 8 inches, must be spread over the surface of the bed. By damping overhead and closing early with sun-heat, the plants will grow freely, taking care, however, that the lights are not kept too close during the early part of the day. In heated pits see that the interior is well filled up with old fermenting material trodden down very firmly, so that after surfacing with soil, this latter is quite 18 inches from the glass. The seeds may either be sown in rows arranged 15 inches or 18 inches apart, according to space at disposal, or the seedlings be raised in pots and planted out. If the soil is fairly moist, no water will be needed until the seed leaves are through the soil. Afterwards keep the soil in a genial state of moisture, and as the plants increase in size, give a thorough soaking twice a week.

EARLY BEET.—The opportunity should be taken during the first week of April to sow some Egyptian Turnip-rooted Beet, or, what is better, Crimson Ball, for coming into use during the early summer months. Select an open site and where the soil is in a high state of fertility, but not recently manured. Beet is very partial to burned refuse, and a dressing of this worked in previous to sowing will be found of marked benefit in the production of clean and good quality roots. A sprinkling of soot and also salt at the rate of about 2 ounces to the square yard will also be found a great aid towards the production of good roots. If the soil should be dry, soak the seed twelve hours before sowing.

PLANTING AND SOWING ASPARAGUS.—From present appearances, this will be an early season, thus making it all the more desirable that all preliminary operations as regards the preparation of the site for the reception of the plants should be well in hand, so that there will be no delay with the work of planting. Plants which are being received from a distance are generally sent off just as fresh growth and consequently root-action are commencing. Home-grown roots may be left until the top-growth is 2 inches or 3 inches above ground with the certainty of their succeeding well if carefully removed and planted. The planting must not be unduly delayed, nor in any case must the roots be allowed to become dry between the time of taking up and planting. Home-grown roots certainly have the advantage in this respect, as they may be taken up and replanted straight away without their being exposed beyond a few minutes. In preparing for planting take out wide and shallow holes, so that the roots may be laid out to their fullest extent and deep enough, so that when planted and the soil drawn over them the crown is quite an inch below the surface. A mulching of short rotten manure or burned refuse and leaf-soil in equal parts will be found a capital aid to free growth, afterwards taking care that the succeeding growth is supported to prevent injury from wind-waving.

RAISING ASPARAGUS FROM SEED.—Although time is saved by planting crowns, yet permanent plantations may be formed by sowing seeds where the plants are intended to remain. All that is necessary is to draw out drills the distance apart it is intended to have the rows, sowing the seeds thinly, or dropping a few seeds at intervals. After the seedlings have germinated and are growing away freely, carefully draw out the surplus, taking care that no weeds are allowed to grow, or the young plants will soon become smothered. Crowns for forcing may also be easily prepared at a very small cost if the site it is intended to grow the plants on is warm and well drained, also in a highly fertile state.

MAIN-CROP PEAS.—To ensure Peas succeeding well throughout the summer months, it is essential that the soil should be in a highly fertile state and also that the ground be well worked to a good depth. A little fine bone-meal, superphosphate, and also kainit added to those soils where the Pea crop has not hitherto been satisfactory would be a great aid; so also would wood ashes and soot. On light soils the best main-crop Peas are secured by preparing trenches of richer compost than the surrounding soil. In this case the trenches should be taken out 1 foot or 15 inches in depth, placing manure and wood ashes in the bottom and the best of the top soil on the top, taking care, however, that the bottom of the trench is previously forked over before putting in the manure. Those constituents above described should be added to the surface soil of the trenches, lightly stirring them in. The seeds, after being sown, should be covered over with 2 inches of soil. When finished, the top of the trench should be just below the surface to form a receptacle for water, or a slight ridge should be drawn up on each side. On heavier or stronger soils trenches are not needed, but the whole site must be deeply worked and in a high state of fertility. In every case take care that the drills are drawn with a wide and flat bottom not V-shaped. This latter system causes a crowded growth. Also make the drills deep enough, so that quite 2 inches or 3 inches of soil may be drawn over the seeds. Let ample room be allowed between the rows. If the ground cannot be spared to arrange the rows well apart, then have them more isolated, so that dwarf crops may be planted up to within 30 inches or even 3 feet on each side. A. YOUNG.

KITCHEN GARDEN.

MANURES FOR TOMATOES.

It is next to impossible for Tomato plants rooting in poor soil and not well fed with fertilisers of some kind from the surface to produce heavy crops of fruit. The necessity for promoting growth of a fairly disease-resisting character has doubtless led many growers and their advisers to be very chary of either using manures or recommending that they should be used freely, but the other extreme is even more objectionable. Undoubtedly a loose, rich root-run or a compost that would suit Cucumbers well is not suitable for Tomatoes, for the simple reason that it causes an over-luxuriant, unfruitful growth, but that is no good reason why exactly the opposite in the shape of soil as hard and poor as a gravel path should be the only substitute. There is not much likelihood of plants with their roots confined to pots, boxes, or very narrow ridges of soil growing too strongly to be productive, even if these are given the benefit of a fairly rich root-run, and they certainly will not grow too rankly if the soil is made moderately firm. If the plants are given good room and are not frequently subjected to a heated, moist atmosphere, they will well repay for liberal treatment at the roots—in fact must have it when they are grown in a

well-heated, yet airy house. According to my experience, Tomatoes most exposed to the drying influences of fire-heat and a good circulation of air are the least liable to be over-run by disease, and also the first to suffer from want either of moisture or food at the roots. There are two reasons that may be assigned for this, the first being the more rapid evaporation of moisture from the leaves, and also the probability that they also derive the least assistance from a comparatively parched atmosphere. Whether rightly or wrongly, I am of the opinion that there is more ammonia in a close, moisture-laden atmosphere than is present in dry air, and if, therefore, the leaves absorb little or no plant food from the atmosphere, more must be supplied at the roots.

Market growers on a fairly large scale cannot afford to resort to pot culture for the summer crop at any rate, and though in very many cases a narrow ridge of soil on a stage or otherwise is the only support of a row of plants trained up the roof, the bulk of fruit sent to the markets is cut from plants rooting in a large bed or border of soil. Either good garden soil, bastard-trenched or dug deeply and made moderately firm, or a depth of about 18 inches of turf and soil from a newly-broken-up meadow will grow Tomatoes well for one season without much further assistance, but in most cases they would be all the better for the addition of newly-slaked lime applied to the surface at the rate of a 12-inch potful to every 4 square yards and lightly forked in. This will have the effect of liberating elements most needed by Tomatoes and at present locked up in the soil. Nitrate of soda acts in a very similar manner, and is even more effective than lime, some of the heaviest crops grown being largely due to the use of nitrate of soda at the rate of 3 lbs. to every 4 square yards, or say 1 lb. to about every five plants. Personally I have no liking for nitrate of soda. It acts beneficially enough for one season on fairly good soil. A simple mixture that would give nearly or quite as good results as nitrate of soda without impoverishing the soil, but rather the opposite, consists of equal parts of either sulphate of ammonia or nitrate of soda, and either kainit or muriate of potash, with a double portion of bone superphosphate. In the course of a series of experiments conducted in America, this mixture was found to surpass any other combinations and single manures tried against it, and I have no doubt that the special manures supplied by English vendors, and which have answered so well in numerous cases, are largely composed of the ingredients named. At the Cornell (United States) University Agricultural Experiment Station trial of manures, the most perfect fertiliser for Tomatoes was composed of one portion or pound each of nitrate of soda and muriate of potash and two pounds of "bone-black," this quantity being applied to six plants—a fairly strong dressing.

In each and every case it is of importance that the manure applied act quickly. Too often what is used for temporary crops, that is to say, those cleared off in less than six months from the time of planting, only begin to derive the greatest benefit from the manures towards the end of their career; whereas it ought to be of great assistance to them from the outset. Solid manures are objectionable for several reasons, among these being the fact that they promote a rank growth and are apt to either introduce or favour the spread of eel worms, the enemy most fatal to the roots of Tomatoes. It should be remembered that it is not altogether what artificial manures contain in

themselves, but rather what the effect chemically on the soils to which they are added will be. Bones, unless in a dissolved state, are both slow and lasting, and not unfrequently are just beginning to be available as plant food when the crops are cleared out of the houses. Even nitrate of soda is slower than might be expected in effecting the purpose for which it is used, and this the experiments to which I have previously alluded to amply demonstrated. Instead, therefore, of delaying a free application of these special manures and salts till the crops give signs of requiring them, it is far better to mix some with the soil prior to planting, and to give a surface-dressing soon after the plants have arrived at a bearing state. If this is done the Tomatoes will absorb the greater portion of it the same season instead of leaving much of it untouched. When these mixtures are adopted there is no necessity to change the soil in a house every season, but, on the contrary, by first double digging or bastard trenching, and next trenching if the subsoil will permit it, little or no fresh soil need be wheeled in for five or six years, or even longer in some cases. If nitrate of soda only is used, then a change of soil must be made frequently or annually if the soil is thin. If Tomatoes are planted in a good breadth and depth of enriched firm soil they will not grow too rankly unless the watering-pot is very freely used, those plants giving the best results that do not get a drenching at the roots very often.

Another series of experiments has been made with a view to testing the effect of different manures on the quality of the fruit when eaten. Curiously enough, the quantity of sugar, acids, and solids varied considerably in the case of different fruits taken from the same plants, but as far as the various applications of manure were concerned, these did not materially affect the quality of the fruit either for the better or worse, those grown without the aid of any kind of manure being very much on an equality with the rest. There is, therefore, much to be said in favour of an early and free use of artificial manures for Tomatoes. W. IGGULDEN.

LATE SEAKALE.

WHERE there is a great demand for Seakale it is well to prepare for a late supply. It often occurs that through April and May there is a scarcity of vegetables. Late Seakale forms a welcome dish at this time, as it can be grown without much trouble and at no great cost. Of late years the growing and forcing of Seakale have undergone a great change. Formerly, Seakale was mostly raised by seed, lifting of the roots was seldom done, and the forcing was done by hot manure or litter. This is all changed, but the lifting has been carried to such an extent that it is seldom there are any roots left for late supplies. It will be found the flavour of Seakale allowed to grow naturally is much superior to that lifted and forced in great heat. In Seakale not forced the flavour is much better, the growth being less rapid and more succulent. Finding the late supplies more valuable every year, I have each spring planted more roots, and am at this date (22nd March) preparing the ground by trenching and manuring. Deep cultivation with plenty of manure is essential to get strong crowns. I find there is no manure equal to cow and horse manure for the roots, and in light land I prefer the former; this retains the moisture so necessary when the Kale is in active growth. Sets or root cuttings are readily secured.

In April planting should take place in rows 2 feet apart and 18 inches or less from each set. As soon as it can be ascertained which is the strongest break or shoot from the crown, all others should be rubbed off. Little more is necessary except keeping clean between the rows and watering in dry

weather. I also dress with fish manure two or three times during growth, doing the work in wet weather, passing the rake over the surface of the ground afterwards. The following season in March or earlier the rows should be covered for the blanching of the late supply. It does not matter what material is used provided it keeps slugs away. Clean litter, cocoa fibre, or leaves answer well, and in many cases good results are secured from soil banked over the plants. I do not advise the roots being more than two years old, as the best results are obtained from young plants. Soot for land where the roots canker is an excellent manure, and may be applied liberally. As to varieties, there is little choice for late forcing. I use the old or pink top variety, as I find it harder than the lily-white, which is invaluable for early work when forced in strong heat. G. WYTHES.

TRANSPLANTING ASPARAGUS.

THE transplanting of Asparagus must not be roughly performed, or the chances are that the plants will fail to grow. It is certainly very annoying after having gone to the trouble of preparing the site for a permanent plantation of Asparagus to find that after the plants have started well into growth there are several blanks. In one sense failures are more likely to occur with plants procured from a distance, as unless they are well packed to prevent the roots becoming dry the chances are that several will fail to grow. Home-grown plants are decidedly the best on account of the convenience for transplanting. The best time for transplanting is directly the young shoots are seen coming through the ground, although they may be left until they are a few inches in length. The small rootlets will then be in full activity, and will take readily to their fresh quarters. With dormant roots the case is different. If these are planted roughly and the roots damaged, the chances are that they will decay, with the loss, perhaps, of the crown itself. Another advantage with home-grown roots when the planting is delayed until the growth is somewhat advanced is, that these having been previously well prepared may be lifted carefully with a fork thrust right underneath them, keeping as much soil to the roots as possible. The site must previously have been well prepared, as if it is in the least lumpy, do not neglect to place some fine fertile soil in direct contact with the roots, so that they will be enabled to take to their new quarters readily. In planting endeavour to arrange the roots in the same position as that in which they were previously growing. Asparagus roots strike out in a horizontal direction; therefore plant them in this manner, and do not cramp them in a small hole. I have seen Asparagus planted by having a trench cut out with a spade, the roots being pressed in. Such a ruthless proceeding cannot be too strongly condemned. When all is ready, take out rather wide and shallow holes with a flat bottom, so that the roots may be laid out straight, arranging them so that the crown of the root is about an inch below the surface. Plant firmly, pressing the soil about the roots and around the crown with the hand. If the weather should be likely to be dry, mulch after planting with a thin layer of very rotten and short manure, or, what is better if it can be procured, some leaf-soil and burned refuse in equal parts. This will keep the soil cool, and so enable the plants to start freely into growth. The young growing shoots must be supported, so as to prevent their being broken over at the neck by wind. This may appear a small matter, but it makes a deal of difference in the progress of the growth during the season.

In far too many instances the plants are set too closely together. When too close planting is indulged in, the produce is neither so fine nor so plentiful as when a reasonable distance is allowed between the plants. The evil, again, is very apparent during the summer months, when the beds are crowded with growth. With too close planting the growth is so crowded, that direct sunshine cannot penetrate to the surface of

the bed. To procure strong crowns capable of producing good produce, it is very essential that the plants be so set out in the first instance that abundance of light may be afforded to the base of the stems during the summer months. Of course, cultivation makes a deal of difference, for if people will persist in cutting too late in the season and also not applying nourishment in due season, they must not expect huge crowns capable of affording good produce. Our plantation is on the level and arranged in a series of two rows, the plants being 3 feet between each and 30 inches in the rows, and between each series of rows 4 feet, this space being devoted to attending to the beds, cutting, &c. A. Y. A.

Asparagus starting early.—Asparagus roots are perfectly hardy, that is to say, if they are not actually exposed to all weathers, and in my case not a crown appears to have been injured by the severe January frosts. What they cannot stand is a very cold damp site. When Asparagus shoots do most need protection is when they seldom get it, this being during the month of April. Not unfrequently the earlier shoots peep through the ground and are cut off by spring frosts. This season top growth is earlier than usual, at any rate it is so in a Somersetshire district, a few shoots being observed peeping through the ground on March 20. These early growths have had the effect of hastening the work of loosening the surface of the hitherto unprotected and unmanured beds, a mulching of strong manure or litter following upon a liberal dressing of fish manure. Not only will the litter serve to protect the earlier shoots from spring frosts, but it will do equally good work in preventing the rapid loss of moisture when hot weather arrives. The fact of the growth being somewhat early need not, nor should not, hasten planting. Rather than expose the roots bristling with delicate fibres to cold drying winds, accompanied probably by bright sunshine, I would greatly prefer delaying transplanting till the end of April or early part of May, even if some of the shoots are 6 inches or more in length at the time. There are fewer failures when planting is delayed till active growth has well begun, especially if the work is done in mild showery weather. By all means get the beds or ground ready for the reception of the plants at once, a little time being needed for it to sink considerably prior to planting, but do not be over-zealous in the latter important work. —M. H.

Hardiness of Celery.—The note on the above (p. 216) refers to a note sent by me a week or two since as to the keeping qualities of late blanched Celery. Having to provide Celery nine months in the year, I tried various means to preserve the plants and found the late moulding answer admirably. This, however, can be done in light soils and in positions well drained and exposed. Unlike "A. D.," my experience of Celery culture is that I have found late plants do well if paid proper attention to. It is useless to plant late, or put in small plants, and expect such Celery to keep well. It is also useless to leave the earthing up till growth is finished, or to do the work in severe weather. To show that my plan is not a failure, last May I lifted many hundreds of Standard-bearer in good condition and with very few losses; these had been treated as advised at page 147. This year I am less fortunate, partly owing to my own fault and partly to the protracted cold and other causes. To-day (March 21) I have lifted 560 heads of Standard-bearer, these being all I have left. At the same date last year I could have lifted four times the quantity and kept it sound till June in a north border covered from the sun. One reason of failure was that the seed sown in the first week in April did not come up well, and having to make another sowing, the plants were not as good as I should have liked. I was later in planting, and before growth was complete it was arrested by severe weather. Another cause was one that will not be repeated another year—shallow trenches. In clay soils stronger varieties

would be best for late work, as pointed out by "A Grower" at p. 187. He advises a large kind for keeping, and I would do the same. From trials of different kinds, I find the white varieties of little value, and have given up their culture for late work; but Standard-bearer, though classed as a dwarf variety by your correspondent, is not so when well grown. It is between the two, and when grown late does not show its pink colour at all. I should say there is no gain by lifting Celery in November, as often growth is made at the base all through the winter in mild seasons. Lifting does not add to flavour or crispness, so necessary in a good Celery. Under trees, decay would be more rapid, no matter how protected. I find the best results are secured by leaving in the row as long as possible, and lifting in the late spring to check running or bolting.—S. H. B.

SEED-SOWING ON HEAVY SOILS.

A WET February does not augur well for a favourable seed-sowing time, especially in the case of those located in heavy land districts. People who may have only had to deal with light soils are not aware of the difficulties those have to contend against who are not nearly so favourably situated. In the former case the soil works very freely, and although the weather may be wet and unfavourable for weeks previously, yet upon a few fine days occurring it soon gets into a condition for seed-sowing. But what a contrast to heavy clay soils. If the weather should have been wet for weeks previously, the soil after a few fine days, instead of being in a free working order, is tough and leathery and full of lumps. Such lumps of soil when surrounding seeds form a very favourite lurking place for slugs. People who may have such soil to deal with for the first time become anxious, because they think the time of year has arrived at which many kinds of seeds should be sown. Very often their zeal to be in time gets the upper hand; consequently the seeds are sown earlier than they should have been, and instead of growing freely the seedlings appear irregularly and with a very yellow cast. Very often the majority of things which were sown early have to be sown over again, and with the result, as is very often the case, of their soon outstripping the earlier sown. In the first place, the soil would be warmer; consequently germination takes place under more favourable conditions. It must be remembered that heavy clay soils are considerably lower in temperature than light soils, and when in a wet and sodden state they are still more so. Therefore to sow seeds in the open ground as early as could be done with safety on light soils should not be thought of.

Special dates for sowing must not be followed. If the soil is not in good condition, wait until it is, and the grower will never regret it. To surround seeds with wet or pasty soil is to seal them up, or partially so, from the conditions for free germination. It is very easy to advise this or that to be sown in the open air, and which often leads novices astray. The weather should decide the correct time for sowing, or as near as it possibly can during the early spring months. An old vegetable grower of high standing once remarked to me, "You will never lose a crop by waiting for the weather to be favourable either for sowing or planting, but very likely to do so if carried out during an unfavourable time"—good advice I never forgot. Very often the blame is put upon the seedsman who supplied the seeds when failure does occur. Put good seed into good ground, and it will, bar unforeseen accidents, surely succeed.

We must also not forget that during unfavourable seasons there are aids which may be called into requisition so as to help the crops. If the weather should be such that the surface soil does not become pulverised sufficiently to enable the seeds to be surrounded with fine soil, the lumps of soil will certainly not become fined down sufficiently to enable their being sown by merely waiting a few days. This is very often the case on newly-turned-up Grass land. If such soil as this has not had the influence of drying winds and frosts, the surface is like so many dried bricks, where it is difficult for even Potatoes to succeed properly, as even these require to be surrounded with fine soil if they are to grow as they should do.

One of the best aids for enabling the seeds to germinate kindly is to surround them with old potting soil and garden refuse burned in a smother. Two parts of the former to one of the latter form a suitable mixture, and which will ensure regular germination. For surrounding such seeds as Onions and Parsnips it is capital. In some seasons there is a weevil which hibernates underneath rough lumps of soil. This crawls out at night and nibbles the young leaves. Now, if the Peas after they were sown had been surrounded with fine soil, this would not happen. In sowing small seeds in drills, it is an easy matter to go along and cover the seeds with fine soil, and in the end it well repays for the trouble taken. The young seedlings will appear through the fine soil and the roots will be enabled to receive adequate support until such time as they are strong enough to penetrate into the heavier soil, and when they do this, they will grow ahead with renewed vigour. Carrots, Turnips and Spinach are also benefited by such assistance. Turnips are far more likely to become attacked with the fly on lumpy ground. Like the Pea weevil, it hibernates beneath the lumps of soil, and the seed leaves are devoured before they appear on the surface. All the Brassicas are likewise similarly affected by contact with lumpy soil. The old truism, "The more haste the less speed," is never more apparent in kitchen garden operations than in being in too great a hurry to commit seeds to the ground in a season which we are now likely to experience unless a change soon comes for the better. The wisest course is to raise what kinds one possibly can under glass and then to plant out at the first favourable opportunity. Early-sown roots, such as Parsnips and main-crop Carrots, are very often of very coarse quality, so there need not be the least hurry in sowing, whatever the advocates of early sowing may say.

Abberley Hall.

A. YOUNG.

WINTER CELERY.

I CANNOT follow "A Grower" in his strong recommendation of tall Celery in preference to dwarf varieties, as being better able to withstand severe frost. Doubtless he wished to show that his recommendation of tall Celery was based on the assumption that if the upper parts of the leaf-stalks were killed, the lower portion remained alive and useful. I fear that is a very limited experience. I have found this season that tall Celeries seem to be so much complained of because of destruction by frost, that many have resolved to grow only the dwarfier sorts for late crops. There is no reason why fully as large a body of soil may not be packed against rows of dwarf Celery as against rows of tall plants; indeed with greater ease it can be done, and whilst there is no doubt but that most of the harm done by the frost is from above, very much also is done laterally, the severe frost penetrating through the sharp exposed ridges of

soil unless somewhat protected. Apart from tall ridges being more exposed to the weather than are dwarf thick ones, it is more difficult to give them protection by the aid of Bracken or litter. Still further, the tops of the plants may not be so easily protected with boards or other shelter when the ridges are so lofty and necessarily sharp. There is always attached to tall Celeries the drawback that the outer leafage is a long way above the hearts or centres, and such high earthing is often done to the injury of the hearts. That is not so much the case with dwarf sorts, where the inner and outer growth is more equable.

But how is it that with so much harm done to Celery by frost in this country we do not adopt the simple method of furnishing protection as is given in the United States and described in "The Vegetable Garden"? A box of say 4 feet or 5 feet long, of moderate width, and from 20 inches to 24 inches deep, stout, and well closed is placed in a cellar or other rather dark place, and in the bottom moist soil or sand is put in 3 inches deep. The Celery plants, carefully lifted from the trenches after being fully blanched, with roots attached, and having a loose tie about each stem, are set thickly, in fact moderately tight into this box, so that the air and light do not get access to the stalks, and in that way may be preserved in excellent condition quite safely for some few months. It is said that to have good Celery at hand in all weathers, families purchase a large number of blanched plants, store them as described, the soil at the bottom of the box being moistened first, and in that way the stalks are kept fresh and plump. Even if we will not take so much trouble here, and it is after all but little, there is the further plan available of lifting Celery, tying it up neatly so as to prevent the outer stalks from being broken, then laying it in thickly in any sheltered place in the garden and obliquely, where with the aid of some spray or branches laid over the plants, and also some Fern or litter, they may be fully protected. Any method is better than allowing Celery to remain in the single ridges, and being later utterly destroyed.

A. D.

LITTLE GROWN VEGETABLES.

VEGETABLES that are grown far less than their merits deserve are the following:—

COUVE TRONCHUDA, also known as the Portugal Cabbage, comes into use at the close of the summer months, and proves most useful. All that is needed is to raise the plants early, treating them similarly to autumn Cauliflowers. Not being hardy, this must have attention, so as to get the plants forward enough to enable their being set out early. In favourable districts the sowing may take place early in April in a warm and sheltered border, taking care that the soil is in a rich and friable state. This vegetable is of large growth, and when cooked it is of a very delicate flavour. It is the midrib of the large outer leaves, which is parted and then cooked as Seakale. After all the outer leaves have been taken and used, the centre heart may be cut and boiled as a Cabbage. As it is very essential that the growth be rapid and vigorous, plant out on a deep and rich soil well exposed to the sun, allowing ample space for development. It is best cultivated in a single row, setting the plants 3 feet apart, taking care that they are not smothered up with other crops. The plants should be ready for the ground at the time the autumn Cauliflowers are planted. In a dry season copious supplies of water and an occasional soaking of liquid manure must be given, or the midribs will not be so tender as they ought.

CELERIAC can never be expected to take the place of Celery as a vegetable in this country, although it proves useful as a change, and a few dozen in any garden of the smallest size do not take up much room. The seeds if sown now in a gentle heat will produce plants fit for planting at the same time as Celery. But while Celery is planted in trenches of rich soil and earthed up to blanch the stems, Celeriacc must be planted on the level. The soil must also be rich and light, as on

sandy soil the growth is more satisfactory. At the time of planting all sucker growths must be carefully removed; if allowed to remain they branch out and form divided roots, instead of one main central root or root-stock, whichever may be the correct term. The plants are set out with the base just resting on the surface, care being taken to plant firmly. It is best to form a separate bed, setting out the plants 15 inches or 18 inches apart. To keep them growing freely, water must be as plentifully supplied as for Celery. After planting, and when they are growing freely, go over them and press the soil quite down to the base of the plant, also removing any sucker growths which may appear throughout the growing season. At the end of the season, or when frost is likely to appear, the roots may be either lifted and stored in sand, or heavily moulded up with soil, the whole being surfaced with dry leaves. The roots protected in this manner retain their flavour and also winter better than when taken up.

SALSIFY AND SCORZONERA when well grown are highly appreciated by many people, although, as is very often the case, the roots are not forthcoming in good condition. They must be clean and straight and devoid of flower-stem. The latter is on account of too early sowing, the first or second week in May being quite time enough. Soil that will grow good and clean Carrots will suit the two vegetables under notice. Soil with manure near the surface will result in forked roots. If the soil is not sufficiently fertile to grow good and clean roots, take out a trench 15 inches or 18 inches in depth, putting the manure in the bottom and filling up with the soil taken out, adding some burned refuse and old potting soil if the staple should be at all heavy, as this latter is the worst kind for growing good roots. Of course, trenches need only be formed in exceptional cases, but it is much better to do this and grow roots worthy the name than the poor and forked ones so often seen. A couple of rows, each about 25 yards in length, will produce sufficient produce for any ordinary establishment.

A. YOUNG.

THE TOMATO.

I FIND no subject takes hold of the public interest in gardening so much as that of Tomato culture. This is due to various causes. First, the taste for the fruit is growing so largely, that all now seem anxious to have them, especially where it is at all possible to grow their own. Tomatoes are to be seen in the shops all the year round, and the sight in the winter of imperfectly coloured and ripened fruits seems only to inspire the average Briton with a desire to have his own fruits, but better. That, of course, he knows to be impossible in the winter, for after all winter fruiting varieties that it will pay to grow for market purposes are myths. Then it is found that no very great skill is needed to grow Tomatoes under glass; indeed, it is far easier to grow fairly good crops indoors than outdoors; hence this knowledge has given a great impetus to the putting up by people of limited means who have small gardens of glass houses, generally small also, where they do or have to grow Tomatoes for themselves, and if successful then, to extend the house culture for their own benefit and that of their neighbours. A well-known Tomato book, because cheap and concise in its instructions, is popular, and once the amateur has a copy he soon gets to work, and, getting up his house, grows Tomatoes without difficulty. The two chief stumbling-blocks of the amateur are hard pinching of side shoots and restricted watering, whilst with many things this class of cultivator is usually too sparing of water. With the Tomato, especially in pots or boxes or other utensils, he is ordinarily too free with liquid, evidently thinking that plants with such large fruits and leaves must need very much moisture at the roots.

Really there are few plants that give such leafage and fruit so freely that need so little water as the Tomato. Then the amateur grower finds it is hard to resist the desire to give his plants plenty of branch-growth. To do that seems to

be to him the proper way to secure abundant crops. If we cared to grow Tomatoes as we do Cucumbers it might be very well, but as a policy of restriction seems to be indispensable to the obtaining of the earliest fruits and the finest clusters, then such restriction must be applied. It is rather difficult to get the mind of the novice to grasp the fact that the bunches or racemes of Tomato flowers come not from leaf-buds, but from the stems direct, in that respect differing so much from Cucumbers. A course of proper culture, combined with hard pinching for a season, however, puts these stumbling-blocks out of the way, only that the same trouble presents itself to new growers, and it seems as if these would go on increasing from year to year indefinitely. Even this increase of home Tomato growers is not at all likely to check the market culture. Rather, by extending Tomato tastes, it will help to increase the demand. Whilst some market growers complain of the low prices secured, others are more than satisfied, and all have to admit that glass culture has so increased, that when compared with the neglected condition of the Tomato but a few years ago, then is it indeed extraordinary, and, so far as relates to any other similar product, quite unprecedented. I should very much like to see during the ensuing season at any exhibitions where Tomatoes are invited more encouragement given to the exhibition of clusters of ripe fruit as evidence of cropping merit than of merely single fruits, that generally are unduly large and serve too much to encourage the production of large fruits, which are far from being the most profitable or acceptable for market. There is really no gain in having large fruits; indeed these can only be produced by hard thinning. If very handsome ones be needed, for the products of fasciated flowers found on many clusters of bloom, if heavy, are usually ungainly and are best removed, clusters of fruits that range from three to four to the pound, and the entire clusters weighing about 2 lbs. are first rate, and some three, four or six of these shown on dishes, judged by weight, colour, and beauty, would prove to be a far more desirable method of showing Tomatoes. There is hardly any greater folly than offering prizes for collections of varieties. One sort may give half-a dozen that diversely named are admitted as distinct. Very few growers care for the red or Acme type, for it is neither attractive nor acceptable in the market, and with such rich scarlet tints as are found in the best varieties now, reds have little chance for popularity. Neither are they wanted. Yellows find little favour also, although presumably better flavoured. Collections of Tomatoes should never exceed three varieties, two to be essentially distinct and one to be yellow. It is a pity that prizes could not also be offered for single or more varieties of the small dessert or salading Tomatoes in bunches, for at present these find no encouragement, and yet they merit such because so admirably fitted for consumption either as ordinary fruits are or in mixed salads. These small-fruited forms, both scarlet and yellow, are very strongly recommended for employment in the autumn to furnish harvest festival or domestic decoration, but that is far from being the highest uses to find for fruits grown for food. However, cleansed from dust they may be utilised all the same, but the fruits are never so nicely flavoured as when freshly gathered.

A. D.

Hardiness of Lily-white Seakale.—I am surprised to read (p. 149) that "M. H." has found the Lily-white Seakale less hardy than the common purple kind. Here in a very low-lying and cold part of the country I have found no difference whatever in the hardiness of the two forms; in fact, I have never seen a crown of either injured by frost. As your correspondent points out, this new form is rapidly superseding the old kind, and it will be very unfortunate if it turns out to be less hardy, for the improved colour is a great boon. I have forced some hundreds of crowns this year, but these were lifted early in winter, and have done well. I also have a batch in the open for our

latest cuttings, and shall watch its behaviour closely after "M. H.'s" warning. Last year, however, I left some of our plants of this in the open ground, but did not force or cover them, and though the winter was severe I had no losses. Even if "M. H.'s" fears are realised, and it proves to be less hardy, it will still be largely grown and lifted for forcing indoors. I find that it grows quite as strongly as the old kind and makes splendid crowns from good thongs with one season's growth.

—J. C. TALLACK, *Livermere Park*.

FAILURE OF CARROTS.

It is not at all an uncommon occurrence for Carrots to go wrong, no matter how carefully the ground may have been tilled. In some gardens it is difficult to prevent canker, and the ground being in a rich state would aggravate the evil and prevent the production of clean roots. As stated at p. 170, the ground was well prepared by ridging and no fresh manure applied. On the other hand, the ground, if heavily manured for the previous crop (Celery), would be in a rich state; in such soils animal manure would be unnecessary. What was wanted was different food altogether; indeed, if the seed could have been sown on maiden land without manure of any kind, the result would have been different. Large growers of Carrots obtain heavy crops under field culture, of course always giving new positions, and in such cases there is no great quantity of animal manure. In many cases only artificial manures are necessary, and in suitable soils, such as light sandy land, irrigation is often the manurial agent employed. In the first place, it is useless to sow Carrots in soils much infested with wireworm, unless means have been taken to get rid of it, and to do this requires time. This insect and the maggot are the most troublesome enemies of the Carrot. Deep digging or trenching will do much to prevent their ravages, but only in a limited measure. I would advise the use of gas lime in the autumn, giving the ground a good dressing, taking care that the lime is broken small and evenly distributed over the whole surface, allowing it to lie for a few weeks before incorporating it with the soil, as if it remains a little time on the surface it becomes pulverised and may be used in larger quantities than when dug immediately into the ground. As a large quantity of gas-lime would be injurious to use at this date, I would recommend a small dressing dug in before sowing the seed in ground badly infested with wireworm, frequently stirring or forking over the surface on all favourable occasions; this will do a lot of good and get rid of the grub. Freshly slaked lime is equally useful where gas lime is not obtainable. Soot is another powerful antidote, and may be used with advantage at the first preparation of the soil, at the time of sowing, and again in the growing season, applying it during damp weather. For years I have seen soil in which it was impossible to grow a perfect root made suitable by the use of burnt garden refuse. Save every scrap of such material for the Carrot bed, omitting animal manures and using guano, salt, or fish manure (the last-named I can strongly recommend, as it possesses valuable properties, and compels maggot and wireworm to give it a wide berth, while the salt in the manure is just the amount required to build up the root). If fish manure is given as a dressing in the early part of the growing season, either in wet weather or flooded in afterwards, the effect upon the plant is wonderful; but care must be taken to give these stimulants when the manure can be washed down to the root, not allowing it to remain on the top or foliage. On heavy land much good may be done by a supply of burnt refuse or soil of any kind of a light nature, such as old potting soil and the refuse of the potting shed. In places where charcoal refuse can be readily obtained, I do not know of any better material; it is invaluable on such soils. In case of wireworm or maggot a liberal supply of wood ashes will prove most beneficial; this may be used at the time of sowing. I prefer to use it both before sowing the seed and afterwards. When it

can be applied freely, a dressing before digging is worth giving, but if at all scarce it may be placed in the drills before sowing the seed. I would also advise sowing a short, quick-growing Carrot in preference to the long kinds in places where it is difficult to get a good crop, as then the roots are not so long in the soil. It is well to make two or three sowings, as seed put in early or late will sometimes do better than that sown at the proper season, and though the roots of the last sowing may be small, they will be good and keep well.

G. WYTHES.

CLAY FOR LIGHT SOILS.

In many places the soil is very light and porous, but in few gardens is there just the kind required to grow good crops, and in others there is too much clay. In the last-named the cultivator experiences great difficulties in working the land in wet weather, and after protracted frost or during severe winds, as the soil requires so much attention to get it into condition before seeds can be sown. On the other hand, in such soils, vegetables, also fruits, give a good return. The value of light soils for early produce is too well known to need comment, but even then the value would be much greater in the case of certain crops if a small proportion of heavy material could be incorporated with the soil. The heavy material would give the crop what it often lacks, and that is flavour; besides, in such light, porous soils, unless due attention is paid to moisture, the growth of many vegetables and fruits receives a check just at the moment the roots require most food. In the case of fruit there is greater need of such food in the way of retentive soil at the roots, for without such the trees often grow too much to leaf, and what fruit is produced cracks and turns out hard and gritty. Strawberries grown in poor, gravelly soils are often poor; some kinds which are not considered suitable to the district may fail altogether; whereas, if they had had a congenial soil the result would have been different, and even those kinds which are grown generally look patchy, fail to give large fruits, and are soon over. In such soils, I may be told, irrigation is the means to adopt to secure a good crop, but how often does it happen that the means for providing moisture fails just at the critical moment. Difficulties in the way of labour to apply the same often arise, the result being the crops fail year after year without any measures being taken to prevent this. With vegetables the same loss takes place, and loss of flavour is the result. This last point I would specially enforce. I consider that flavour should be equally considered, if not more so than mere size, as coarseness does not mean good culture. By the use of clay dressings for light soil, flavour in both fruit and vegetables will be greatly improved, nor is it an expensive addition if the work be systematically undertaken. I do not propose that the whole garden should be overhauled or turned upside down but be taken in hand piecemeal, doing a portion of the work yearly and as circumstances admit. This will often be done most conveniently in the winter months at a time when labour can be more readily obtained, and, as I will point out, at a period when the weather will be a valuable aid to prepare the clay for the work. Fruit trees can at that time be operated upon better than at any other; new planting is taking place, and the ground is being prepared for vegetables. It may be thought this note would have been more opportune in the autumn; such would have been the case with regard to new fruit plantations, but I would advise its use for the vegetable quarters, and as during this month there will be the selection of sites for such crops as Strawberries, Raspberries, and long-standing vegetables, there is no better time in which to wheel or cart clay than the present. If it cannot be placed on the ground at this date, it can be placed in bulk in readiness for the work; whereas, if left it will probably be found inconvenient later on to find time to get the heavy materials for the work. If used for Strawberries, place it on the ground and dig it in, and the crop will prove to be

far superior to that on ground not similarly treated. Even when it cannot be placed in the soil when preparing new quarters, a good dressing on the surface and lightly forked in will greatly benefit the crop the following season, as the land will retain more moisture. When manure is applied to land dressed with clay it lasts much longer, the heavy soil absorbing and retaining the rich portion of the manure round the roots instead of its being washed down into the gravel underneath. For vegetable quarters, when a dressing of clay can be applied to such soil, the same remark applies with equal force. The roots of the vegetables are cooler in hot weather, get more food, and, of course, are better in every way. Whenever possible I would advise a dressing of clay, doing the work in the winter, spreading it on the surface for a time, and by the action of the weather it will be pulverised and in a fit state to work without being sticky. If only a portion of ground can be treated yearly in this manner, it will well repay for time and labour bestowed upon it. In most districts clay can be obtained at little cost. Even marl is valuable for the purpose, and can be utilised in most seasons. Clay of any kind is difficult to work in wet weather, but by exposure or mixed with light soil is soon workable. I have used it to great advantage when root-pruning large fruit trees, giving the roots a portion of the clay each season the work was in progress, the result being most marked by the appearance of the fruit and heavier crops. Pears not considered worth growing have done splendidly, having clear skins and no cracking, as was the case previously. The value of clay for Roses in light soils need not be mentioned. There are many plants that would greatly benefit by the addition of this material, provided it was got into condition before applying it to the roots of the plants.

G. WYTHES.

STOVE AND GREENHOUSE.

THE CHIMNEY CAMPANULA.

(CAMPANULA PYRAMIDALIS)

IN THE GARDEN of September 24, 1892, a note by "D. T. F." appeared on *Campanula pyramidalis* asking as to its culture. As the season was then far advanced, I deferred sending till now, which is the best time to prepare for next season, that is, if the stock is secured from seed.

Campanula pyramidalis is one of the most useful decorative plants we have. I have for the past twelve years taken much interest in it, and by careful selection raised several distinct colours, getting more substance in the bloom. Some plants are much dwarfer than the type, but this has been objected to, as the beauty of the plants is lessened. I do not see it in that light, as if the plants still retain the pyramidal habit they are equally good, and can often be employed where the taller could not. This variety is termed a perennial, and without special attention to culture the term is no doubt rightly applied, but it is better to treat it as biennial. To get it good, early sowing is necessary. With this section the raising needs more care, as if delay occurs through seeds failing, a year is lost. I make two sowings, each time under glass, the first sowing in March and again a month later; but those who want only a limited number of plants and not a long succession of bloom, will find that plants raised early in April will give grand spikes of bloom the next autumn twelvemonths, or in about sixteen months from time of sowing. As soon as the seedlings are above ground they should be kept near the light, sparingly watered until strong, and then pricked off singly into 3-inch pots, replacing in the frames and keeping close for a short time. When the small pots are full of roots the plants should be shifted into 6-inch ones. I give the earliest sown plants another shift into 8-inch pots, keeping in cold frames, and by the end of September they are fine specimens, the lights of

the frame only being used in very wet weather, or for a short time after potting. The plants when taken out of the seed-pans may also be pricked out into boxes for planting in the open; this will save much labour in potting and watering, but they will neither be so good nor bloom so well, as the majority of the plants will not flower the next season. There is also much loss in heavy or wet land during the winter. If potted up for winter there is some loss, as the pots are not full of roots, and at times the plants damp badly. When potting, it is advisable to use a good sound loam, not too light, with a portion of mortar rubble and burnt wood ashes. Leaf-mould should be omitted in the final pottings, as it makes the soil too porous. There is no loss of plants in the winter when sturdily grown. Early in March the plants commence to grow and all get a shift; those in 8-inch pots into 10-inch or even larger if necessary, and the smaller into 8-inch. This shift is given the first week in April, and the plants having been kept fully exposed are stood on a hard ash bottom in a warm position in the open, and give no further trouble. As they come into bloom they are removed indoors or used for cutting. These plants should never suffer from want of moisture or feeding when in active growth. They also last much longer, giving a succession of bloom if the dead flowers are removed two or three times a week; insect pests are not troublesome when moisture is well supplied. Any good forms may also be propagated by cuttings. When pricking off the seedlings, the weakest should not be omitted, as these often give the most varied colours, the strong ones usually being all of one colour. G. WYTHES.

Syon House.

Camellias.—It is said that Camellias as flowering plants are much less popular than formerly. Undoubtedly they have to encounter formidable competition in other flowers that are so easily produced in warmth, and, further, the Camellia, because of the essentially short stems attached to the flowers, is not at all suitable for ordinary decoration. Double Camellia flowers have about them much that is stiff, formal, and artificial, easily copied, and that may to some extent account for their present unpopularity. On the other hand, the fine broad-petalled single and semi-double flowers are beautiful beyond measure, and deserve far more admiration than such stiff, single gaudy flowers as Begonias receive. But whatever may be the estimate of Camellia blooms, there can be no doubt but that the plants most deservedly rank amongst our handsomest of evergreens, and when in flower, no matter what kinds, are all exceedingly handsome. There is no plant that will give such a wealth of bloom, extended over so long a period and under such comparatively cool conditions as the Camellia will. No matter whether in tubs or pots or planted out in greenhouse borders, whether trained as bushes or flatwise to walls or trellises, the flowers are always wonderfully abundant, and the foliage richly coloured and handsome. Even outdoors in many places where the soil is of a peaty nature and the position sheltered, the Camellia will make exceedingly fine, handsome evergreen bushes, and produce a great wealth of flowers in the spring. It is because practically so hardy that it needs so little heat in the winter. A comparatively low temperature and plenty of light and air suffice to keep the plants blooming profusely from October till April if successional varieties be grown, although in cooler houses. The collection of flowers which Messrs. W. Paul and Son staged at the Drill Hall on the 14th ult. included but one of the loose-petalled section, conspicuous, a lovely rosy flesh-coloured flower that should please everyone. All the rest were good doubles, some flattish, some cupped, and some of diverse forms. —A. D.

Imantophyllums at Forest Hill.—These plants are largely grown by Mr. Laing. One of the chief features in his new varieties is the great breadth of the petals; another is the size of the individual flowers. John Laing is one of the finest;

its colour is a rich and bright orange-scarlet. This variety produces enormous trusses, the individual flowers being large and of good form. Another exquisite form is Joseph Chamberlain, the flowers of which are very large, the colour a vivid orange, with a clear yellow throat. This seedling is only just flowering for the first time. Lady Wolverton is a grand and telling variety with large flowers of an exquisite shade of orange, passing into yellow, the throat white. The flowers of Bronze Beauty are of a bronzy gold, with a citron-yellow throat. Sunray is another charming variety, having the petals of a rich rosy salmon, with a marginal border of pure white and a clear yellow throat. Sulphurea has large flowers of a pale sulphur-yellow. Exquisite has the petals of a beautiful bronzy orange and clear yellow throat. Mrs. Laing is a superb form with vivid orange-red petals and a citron-yellow throat. Amongst other fine forms now to be seen here are Stanstead Beauty, Meteor, Brilliant, and Purity. The flowers last a very long time in perfection, and they make a splendid show. To grow these plants well the pots should be well drained, and they should be planted in a mixture of loam and leaf-mould, to which a little well decomposed manure may be added, the whole made fairly sandy. Abundance of water when growing, both to their roots and overhead, is necessary. —W. H. G.

Cytisus Everestianus.—The ordinary *Cytisus racemosus* is one of the commonest market plants, being by some cultivators grown in considerable numbers, and is always a familiar object at this season where flowering plants are offered for sale. It is, however, more generally known under the name of Genista. The variety *Everestianus* is but rarely seen, though it is quite distinct from the commonly cultivated form. In this the foliage is more hairy than in the ordinary *racemosus*, while the flowers are of deeper colour, being, in fact, almost of an orange tint. The reason of its scarcity is that it is a difficult subject to propagate, the most satisfactory way to increase it being to graft it on to young plants of the ordinary *Cytisus racemosus*, which can be readily struck from cuttings. If the point of union is as close to the ground as possible, it will, after a time, be difficult to see that the plants are grafted. *Cytisus Everestianus* is, I believe, of garden origin, and was awarded a first-class certificate by the Royal Horticultural Society thirty-one years ago —H. P.

Lilium Harrisii.—This, the Bermuda or Easter Lily, to which allusion was recently made in an article accompanying a drawing in these columns, is grown in large numbers at Hassocks by Messrs. Balchin. The earliest were in flower in February when I saw them with others in various stages of growth, the main batch being worked for Easter. This Lily is there given a brisk heat, more than some would deem advisable or safe, but the treatment is evidently in accord with the requirements of the plants, for they look surprisingly well. The common garden Lily (*L. candidum*) will soon be in flower; this is also grown in very large quantities for cutting and decoration at Easter. The growth was all that one could desire, short-jointed and sturdy. The plants when in flower would not apparently be any taller (if so tall) as when grown out of doors in the ordinary way. This kind is not given so much warmth as the Bermuda Lily, which is undoubtedly a rational mode of treatment. In both cases the plants were not far removed from the glass. —PLANTSMAN.

Leschenaultia biloba major.—It will be within the recollection of many of the readers of THE GARDEN that this grand old Australian plant has been on more than one occasion shown at the metropolitan exhibitions in profuse flower by Messrs. W. Balchin and Sons, of the nurseries, Hassocks, near Brighton. Just lately I had an opportunity of inspecting their stock of this variety, and was much gratified by what I saw. They have an immense number of plants in various sizes, from 7-inch and 6-inch pots downwards to 3-inch pots. All of these, even the smallest, are this season showing for bloom in a remarkably

free manner; nearly every shoot has its flowers in various stages of development. These when in bloom will make a fine display. The house in which they are grown is a very light span-roofed structure and is freely ventilated, save in severe weather. The day was a cold one, not much above freezing-point, when I paid my visit, yet air was being given in a liberal fashion. Great care is exercised in the watering, no excess being allowed at any time. In this respect more pains have to be taken than when dealing with Cape Heaths even. Any symptoms of mildew are closely watched for and stopped by means of sulphur. The plants are cut back rather hard after flowering. This, I knew, could be done, but not to the extent there practised. This lovely blue *Leschenaultia* was figured in *THE GARDEN*, Oct. 4, 1884 (p. 298). It is without doubt the most beautiful hard-wooded plant in cultivation, and should be grown in far larger numbers than it is at the present time.—PLANTSMAN.

Magnolias in pots.—Some of our hardy shrubs are very commonly employed for flowering under glass, while, on the other hand, there are some that though well suited are seldom seen. The *Magnolias* may be taken as representatives of this latter class, and no doubt the reason that they are not oftener seen treated in this way is that they are difficult to propagate, and always command a good price. Such kinds as *M. conspicua* (the Yulan), *M. Lenné*, *M. Soulangeana*, *M. obovata*, and *M. stellata* will if carefully looked after keep in good health for years in pots, and flower every season. The massive blooms of the Yulan, which are of the purest white, are perhaps the finest of all, and in addition to their great beauty are also deliciously scented. The deep coloured flowers of *M. Lenné* are widely removed from those of the Yulan, while the pretty little *M. stellata* must have a place assigned it in any selection of *Magnolias* for flowering in pots. This forms a low, much-branched bush, whose flowers are white, from 3 inches to 4 inches in diameter, and composed of several strap-shaped petals that after opening gradually reflex and show the centre of the flower. Besides these we have two evergreen species that flower freely in a small state, viz., *M. fuscata*, whose brownish-coloured blossoms are not particularly showy, but very powerfully scented, and *M. pumila*, to which much the same remarks will apply. The flowers of this last are greenish white. The deciduous *Magnolias* above enumerated should in the summer be plunged out of doors in a sunny spot, and at the same time they must not be allowed to suffer from want of water at any time, while an occasional weak stimulant will be of service.—T.

Boronia megastigma.—Among the limited number of hard-wooded plants that are now grown to any extent in this country the *Boronia* in question must be regarded as one of the most popular, for large quantities are grown by a few nurserymen who still make a feature of this class of plants. This *Boronia* is a slender growing shrub, whose drooping blossoms produced from the axils of the leaves are of a brownish purple without and greenish yellow within. They are not particularly showy, but being borne in great profusion, and gracefully poised on slender stems, a plant when in full bloom is a very pretty object. The one feature, however, in which this *Boronia* stands out far beyond all its associates is in the delicious fragrance of its flowers, which is so powerful, that a single plant will scent a good-sized structure. A second species now at its best is *B. heterophylla*, a newer introduction than the preceding, but one that has rapidly made its way in cultivation. The flowers of this are of a bright rosy crimson colour, and produced so freely from the axils of the leaves, that the slender shoots are often closely packed with them for some little distance. These two species of *Boronia* were noticeable in the group of hard-wooded plants shown by Messrs. Low at a recent meeting of the Royal Horticultural Society. Both of them, but more especially *B. megastigma*, have a tendency to run up tall and thin unless freely stopped during their earlier stages, and after flowering a great mistake is often made

in not cutting them back hard enough, the result being attenuated specimens, bare of foliage at the base, and altogether very unsightly. After the flowering season is past the plants should be cut back rather closely, and then kept in a somewhat warmer and moister structure till they start freely into growth. The shoots then produced, when from 1 inch to 2 inches long make the best of cuttings.—H. P.

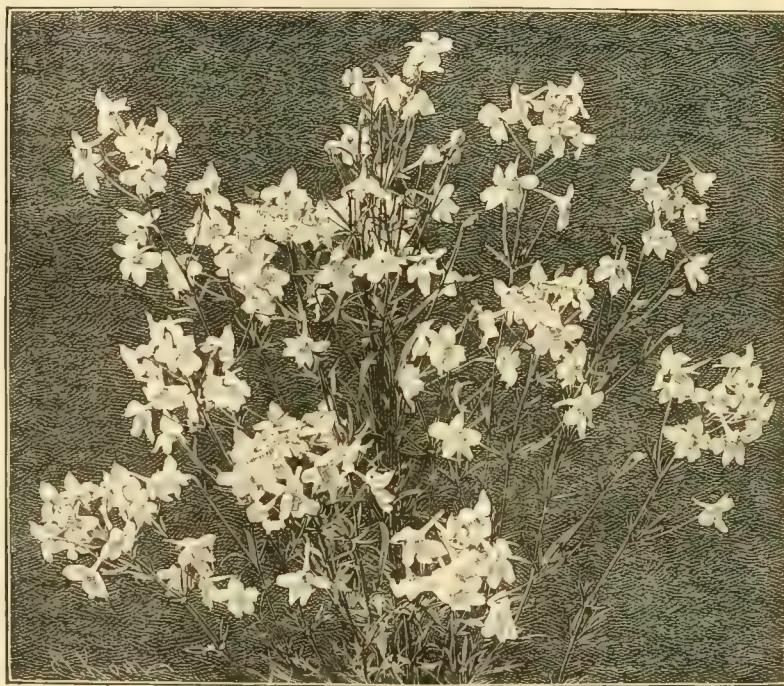
ZONAL PELARGONIUMS AT SWANLEY.

THE zonal *Pelargonium* is always a bright feature in the nurseries of Messrs. H. Cannell and Sons at Swanley, and new varieties are being constantly added to the collection. As with Chinese *Primulas* and other florists' flowers, so also with zonal *Pelargoniums*, there is ever an advance forward, particularly in the acquirement of new shades of colour. Not a few of the varieties sent out by Mr. Cannell have been raised by Mr. Miller, of Ramsgate, who for many years has taken especial interest in the zonal classes, producing beautiful varieties, as evidenced by his latest acquisitions. He has attempted to get a

bold trusses, the colour rich pink. *Mme. Melba*, white, touched with very delicate pink; *A. F. Wootten*, salmon, eye white; and *W. P. Wright*, scarlet, may be mentioned. A new double variety is named *Double New Life*, and *Mrs. H. J. Miller* has very curious flowers. They are borne closely together in the truss, and the centre petals are white, the remainder scarlet. Those interested in *Pelargoniums* will see that the plant is ever being improved upon. C.

Rhododendron Williamsi is one of the most useful hybrids raised in recent years, and was finely shown by Messrs. B. S. Williams and Son at the recent Royal Botanic show. It is the result of a cross between *R. arboreum* and *Azalea sinensis*, but very little of the character of the former is to be seen in the hybrid. One specimen shown bore over twenty of the neat, compact trusses, and the plants make a very even and vigorous growth. It is exceptionally free, every shoot bearing a cluster of flowers, which are white, with a few spots of yellow on the upper petals.

Persian Cyclamens at the Royal Botanic show held on March 22 were unusually fine, and



Delphinium grandiflorum Breckii. Engraved for THE GARDEN from a photograph sent by Mr. John Forbes, Hawick.

blue variety. We have not much sympathy with those who seem ever striving to get impossible colours apparently, as a blue *Primula* and a blue *Rose*. We have neither as yet, but we may say that the same results towards the acquirement of a blue-flowered zonal *Pelargonium* are being obtained. One named *Blue Peter* is a distinct advance upon previous varieties of a similar shade of colour, the flowers of a bluish tint set off by a white central eye, of excellent form, and not too large. Another single variety of great distinctness is *Golden Hand*, the flowers of exceptionally fine form, and belonging to the orange and yellow division. The *Rev. Bartram*, orange-scarlet, and *Lady Tennyson*, of a distinct salmon tone, are two noteworthy novelties in the list of single kinds. New departures occur to maintain interest in the plant. *Picotee* has double flowers, white and pink, quilled in firm, and very pleasing. Another fine variety is *Colossus*, the flowers produced freely and of a crimson-red colour, whilst *S. V. Ras-pail Improved* is an improvement upon this fine market variety. Several raised by Messrs. Cannell and Sons are of distinct merit. *Mrs. French* has very large flowers, borne in

they were interesting, not alone for the growth of the plants, but more particularly for the extensive range of colours in the flowers. They appear to increase in variety of shades each year, and some of the newer varieties were delightful, pure white, soft shining rose, and deep crimson, not the purple shade objectionable in any flower, except in a few kinds of *Orchids*. We note also an increase in the breadth and massiveness of the segments. One group comprised a large number of kinds, the flowers ranging from the purest white, through delicate shades of clear rose, and all of bold, striking form.

Spiræa japonica multiflora compacta.—This is very compact in growth, free, but more formal than the type, and the flowers are produced in denser plumes, their colour similar to that of the ordinary form so familiar to all who care for plants. It will not take the place of the type by any means, but it is worth growing for its distinctness and may be used to advantage in groups.—GROWER.

— This is just as amenable to forcing as the ordinary *S. japonica*. Little was known of the

newer compact form till an award of merit was bestowed upon it by the Royal Horticultural Society a couple of years ago, and since then considerable numbers of it have been sold. By some it is admired, but in my opinion it is not equal to the ordinary kind, forming as it does a much denser mass of bloom, and consequently when at its best it is wanting in the lightness and elegance of the typical *S. japonica*. There is little doubt this compact form originated from the golden veined variety, which is, except in the marking of the leaves, a counterpart of the other. The golden-veined (*aureo-reticulata*) is an old plant in gardens, and a very pretty one, at all events during the first part of the season, for by the time the flower-spikes are fully developed the leaves are far greener than when they are first expanded. Then they are clearly and distinctly veined with gold, while the leaf-stalks have a reddish tinge. A second *Spiræa* with attractively coloured foliage is the golden-leaved form of the common Meadow Sweet (*S. Ulmaria*), which in the open ground later in the year forms a very attractive feature, the foliage being of a uniform yellow tint.—T.

NOTES OF THE WEEK.

Acacia pulchella we saw lately used as a pot plant, and a more delightful subject for the purpose it would be difficult to imagine. The plants were in 32-inch pots, and the leafage was almost hidden by the wealth of globular flowers, very bright yellow in colour. It is, of course, finer when planted out, as it can attain large dimensions.

Eucharis Stevensi is a hybrid, but it will never, we think, make a garden plant equal to *E. amazonica* and other good kinds already in cultivation. The flowers are not so large as those of *E. amazonica*, and the pure white segments are more pointed, also narrower, whilst the leaves are broad, bright green, with deeper coloured veins. It is interesting, but not of great value.

Mesembryanthemum muricatum is a charming little species, introduced from the Cape of Good Hope as far back as 1731. A plant is in bloom in the Cape house at Kew, and although such an old introduction, it is by no means common any more than the majority of the members of this vast genus. *M. muricatum* is smothered with small, but not insignificant rose-coloured sweet-scented flowers produced in clusters of about seven. It is well worth growing for this annual display of rosy bloom.

Primulas are flowering freely in the hardy plant house at Kew, and constitute a most interesting series. The richest in colour is *P. Dinyana*, the flowers of a deep claret shade, intense and effective. Also in bloom are *P. Kitaibeliana*, *P. viscosa*, and its variety *alba*, *P. pubescens alba*, *P. calycina*, *P. marginata*, *P. denticulata*, *P. Clusiana*, *P. Wulfeniana*, and others. Lovers of the hardy alpine *Primulas* can therefore see many of their favourites in full beauty.

The **Drabas** are amongst the most interesting hardy plants in bloom now. *D. Mawi* is of compact growth, the leaves bright green and the flowers white. It was introduced from Spain about 1873. Then we have *D. alpina*, *D. Aizoon*, too well known to describe, and a very distinct species named *D. brunieifolia*, which we noticed in bloom on the Kew rockery. It was introduced from the Caucasus in 1820, and has light yellow flowers, very distinct against the soft green growth, which forms a perfect felt-like carpet over the stones.

Anemone patens is one of the earliest of the year. A fine clump is in flower on the rockery at Kew, where also the Pasque Flower (*A. Pulsatilla*) is just commencing to bloom. *A. patens* should be valued by all who care for hardy plants. These two fine *Anemones* of the *Pulsatilla* group are charming in early spring; but, unfortunately, such severe morning frosts as we have lately had are

not an advantage. *A. patens* in particular had been much cut. This reminds us that the *Megaseas* in more exposed spots are practically destroyed as regards the flowers.

Erysimum ochroleucum var. helveticum is a plant that deserves attention. It is a delightful pot plant, and several examples are in full bloom in the hardy plant house at Kew, whilst in a few days a large group on the rockery will be bursting into flower. The plant has a remarkably compact, neat and vigorous habit, clothed with abundant fine green leafage to the base, and the bright yellow flowers, individually not quite the size of a farthing, are borne in dense heads and make a brilliant show, diffusing a delicious Wall-flower fragrance.

A curious **Amorphophallus** is *A. bulbifer*. It flowers without the leaves, and the scape rises about 6 inches or 8 inches in height, the spathe rose, spotted with almost a black colour, the thick spadix being of a pale rose tint. A specimen is in bloom in the stove at Kew, where the handsome *Thomsonia nepalensis* (see GARDEN, March 25, 1893), *Arisæma speciosa*, and *Asarum macranthum*, which bears its purplish flowers almost on the surface of the soil, in the style of *Aspidistra lurida*, are in full beauty.

Three distinct **Narcissi** in full bloom now are *Ajax* Dr. Hogg, *spurius coronatus*, and *tridymus*. We picked them out from a large collection as distinct from each other, yet individually attractive. The first-named is very pleasing against a wall, the flowers white, except the long even trumpet, which is primrose colour, this, however, changing with age to white. *Spurius coronatus* is a noble flower, the trumpet very large and of a rich yellow colour, the perianth paler, whilst on the rockery *tridymus* is delightful, the neat flowers, which are freely produced, almost resting on the soil. It makes a rich clump, and is an excellent companion to *N. minor*.

A new **Anthurium** named *A. Chamberlaini* is in flower in the Victoria Regia house at Kew. This species may be considered an important acquisition, as it is quite new, flowering, we believe, for the first time at Kew. It flowered previously, however, in the garden of the Rt. Hon. J. Chamberlain, M.P., at Highbury, Birmingham, who obtained it in an imported piece of Cattleya. It may be certainly considered worthy of a place in the ordinary stove, but unless fresh importations are made it will remain scarce, as the plant at Kew is from a sucker of the Birmingham specimen; hence there are only two examples in England. It makes a bold, handsome, not to say striking plant, the leaf-stalks being several feet in length and the foliage broad and light green in colour. One leaf was about 2 feet in width and 3 feet in length. The most interesting feature is the flower, which is produced on a scape not more than a foot in length. It seems lost against the fine foliage, but is yet attractive. The spathe measures several inches in length, the inner face of a reddish colour and the spadix rich chocolate, showing also a distinct curve.

BOOKS.

THE RABBIT PEST.*

THIS is a clear and excellent little book, written with spirit and with knowledge of the subject, and is well worth the attention of the many people who have suffered from the rabbit pest; for whatever rabbits may be from the standpoint of the sportsman and the cook, they present a very different and an often melancholy aspect to the forester and the gardener.

Much that the author has to record he believes to be new, and has been derived from practical experience on the Wortley estate principally, where, so far as he can discover from books and other sources, the record of the number of rabbits produced to the acre (a cru-

* "The Wild Rabbit in a New Aspect, or Rabbit-warrens that Pay." By J. Simpson. Wm. Blackwood and Sons, Edinburgh and London.

cial point on which no reliable data appear to exist) has been beaten, if, indeed, anything approaching the Wortley record has ever been published, or any similar experiments made.

In the most modern and exhaustive works on land farming the rabbit hardly finds a place, unless it be under the head of vermin. The author, who fills the post of wood agent at Wortley Hall, has a very simple plan for dealing with the rabbit, and one which, we believe, has not hitherto claimed the attention of writers on the subject.

Extensive acquaintance with woods in England and Scotland has shown him, as it has shown others similarly employed, that the loss caused by rabbits, at large, on estates has been simply appalling in times past, and still is, only the fact has not been sufficiently realised by proprietors. There are numbers of estates on which the destruction to plantations by rabbits has far exceeded the damage from all other causes put together—estates, in fact, where there is nothing to show for extensive and costly plantations once made and now non-existent. And this takes no account of the customary damages claimed by tenants from the landlord for destroyed crops—a constantly recurring grievance for which the landlord has always to pay in some shape or other in the end.

His object, briefly stated, is to enable the farmer or landowner to cultivate the rabbit where it is wanted for sport or profit, and to get rid of it where its presence is harmful. This is the plan which under the author's superintendence has already been tried at Wortley, and, as he tells us, with complete success.

Inasmuch as there have been more rabbits for sport than ever before, and rabbits of better quality, although the warren has been laid out in a park that has been worse overrun with rabbits for twenty-seven years, to the writer's knowledge, than any other part of the estate. Crops and woods have been saved from damage, and temptation to poachers has been removed over a wide tract that had formerly to be regularly watched, while, in the warren, the latter have had little or no chance of carrying on their depredations. The scheme proposed and practised at Wortley is based upon the principle of regarding the rabbit in the same light as any other farm stock, and treating it on the same principle, according to its nature and wants.

The author has failed to find a single example of a warren conducted on these lines; but he has found numbers of examples of disregard of the most ordinary rules of stock-farming, and of pasturing the ground with rabbits till the pasture has become exhausted and incapable of sustaining them in health or condition any longer, without an attempt even to restore the fertility of the soil by putting back an equivalent, in the shape of manure, for the flesh and bones which the animals had carried away on their backs for years in succession, representing the richest ingredients of the soil. When the warren was enclosed at Wortley, and it was proposed to raise a less number to the acre than has actually been produced, and to use lime and manure, &c., even gamekeepers of experience and others predicted nothing but disaster. The rabbits, however, instead of becoming diseased, smaller in size, or deteriorating in any way, have been both bigger and healthier, and promise to go on thriving while the conditions of their healthy existence are maintained.

The present time appears to the author opportune for suggesting rabbit farming as an extremely likely prospect and practically unexplored field for landowners and farmers to make their land pay, but they must cast aside prejudice and baseless preconceived opinions on the subject. The wild or grey rabbit is the best adapted for warrens. In no country of Europe is it so plentiful or so popular as an article of food as our own.

Forty years ago the writer knew large tracts in Scotland where no wild rabbits existed, but where they now abound, and have become such a scourge on farms and plantations, that on some very large estates they have been killed off again—nearly 100,000 rabbits having been destroyed on one estate in a short period not long since. In such cases total extermination is to be regretted, for, as at Wortley, it is easy to exterminate rabbits on an estate and still have plenty for all purposes in a warren.

Chapter III. treats of the demand for rabbits as food; Chapter IV., of weight and condition of rabbits; Chapter V., the causes of failure of warrens. As regards the number of rabbits which one acre of Grass will feed, which the author re-

gards as the crucial point in rabbit farming, he observes:—

Unless I had felt able to answer the question in a satisfactory way, I should not have attempted to write this book. My estimate of the number of rabbits an acre of Grass will feed up to a saleable size is a high one, but I believe that number could easily be exceeded with high culture of the land. The problem is to feed the greatest number at the least cost consistent with the permanently good and healthy condition of the pasture.

How rabbits feed is dealt with in Chapter VII. The author observes:—

HOW RABBITS FEED.—This is a subject closely connected with that discussed in the last chapter. The way to raise most rabbits to the acre is to make them eat all the Grass as fast as it grows, and they will not do that unless put to it in the right way. Rabbits are far more economical and closer feeders than cattle or sheep, and, in proportion, will convert more food into meat from a given space than the latter. Experienced farmers admit that rabbits "take most out of the ground," and the difference must go on to their backs. From careful examination of the pasture I have no doubt on this point, and it is an important one. Cattle and sheep destroy as much as they eat by wandering about the field. The rabbit will go a long way to a Turnip field or a young plantation in winter when snow is on the ground, and there is hardly any limit to the variety of its diet in the field or garden when pressed for food; but a good natural pasture will supply all its wants fully, and on such alone it will thrive and fatten for many years in succession.

Chapter VIII. deals with the stock required for breeding purposes per acre; Chapter IX., how to lay out a warren; Chapter X. describes the Wortley rabbit-trap fence and its advantages; Chapter XI., the care and culture of the pasture in rabbit warrens; Chapter XII. treats of the enemies of the rabbit, diseases, &c.; Chapter XIII. is "a special chapter for farmers"; and the book concludes with a chapter for allotment holders.

The book is very well printed.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY.

MARCH 28.

THIS was another very full exhibition of spring flowers, and a large number of Fellows and others visited the Drill Hall. A larger number than usual of gardeners were *en evidence*, which speaks well for the interest taken in the meetings by the fraternity at large. More room than usual was occupied by large groups of various plants, which in themselves created a good display and gave interest to those visitors not immediately concerned in horticulture. On the other hand, new plants were not so numerous on the whole compared with the size of the show. With these groups now so constantly sent to the meetings, it would be, in our opinion, better if all new plants, flowers, fruits and vegetables were arranged entirely by themselves. Being thus concentrated, more interest would, we think, be taken in them; whereas, now it is possible to miss some new things in the promiscuous arrangement. The lecture on this occasion was exceedingly interesting and instructive, being also well attended.

Orchid Committee.

First-class certificates were given to the following:—

DENDROBIUM WARDIANUM ALBUM.—A distinct form which has previously been shown. It is a counterpart of the type save in colour; the sepals and petals are of a waxy white colour, the lip with an orange blotch in the throat. From Mr. W. L. Lee, Beech Lawn, Audenshaw.

DENDROBIUM BRYAN (luteolum \times Wardianum).—A very distinct and choice addition to the hybrid section with pale creamy coloured sepals and petals, the lip of the same colour, with orange and burnt-sienna markings in the throat, the flowers in form resembling those of the last-named

parent. From Mr. Norman Cookson, Wylam-on-Tyne.

Awards of merit were made to—

CYPRIPEDIUM MICROCHILUM (Druryi \times niveum).—A distinct cross devoid of the yellow of the first-named parent, but with the well-defined stripes of that variety upon the dorsal sepals and the petals, the ground colour being that of *C. niveum*. From Messrs. J. Veitch and Sons.

CATTLEYA SPECIOSISSIMA (Manda's var.), of which only one flower was borne upon the plant, but that one was of remarkable size, the sepals and petals of a pale pinkish mauve colour, the latter being also very broad; the lip was of nearly a circular outline, rosy purple, with light veins and orange markings in the throat. From Messrs. Pitcher and Manda, Swanley, Kent.

DENDROBIUM SIBYL (bigibbum \times Linawianum), the sepals and petals of which are of a light rosy purple shade, the lip edged with the same colour, with a pale throat—a hybrid that bids fair to be a free grower. From Mr. N. Cookson.

COCLILODA NOELIANA.—An Orchid closely allied to the Mesospinidiiums in colour and style of growth. The flowers are of a rich orange-scarlet colour and of medium size, being an acquisition in its colour. From Sir Trevor Lawrence.

CYPRIPEDIUM T. W. BOND (Swanianum \times hirsutissimum), the flowers of which are large, erect, and of bold appearance, in colour a brownish green, the petals long, with purplish extremities. From Mr. Ingram, Godalming.

Botanical certificates were awarded to—

CALYPSO BOREALIS, with singular-looking rosy-lilac flowers and a very compact growth. From Mr. H. J. Elwes, Andoversford.

ANGREÆCUM SP., of very small growth, and bearing quite a minute spike of golden yellow flowers. From Sir Trevor Lawrence.

A cultural commendation was awarded to—

ODONTOGLOSSUM TRESIDERIANUM, apparently intermediate between *O. excellens* and *O. triumphans*; the spike was an extra fine branching one, bearing flowers in profusion of a whitish ground colour, with pale yellow edges and spotted with brown. From Messrs. Heath and Son, Cheltenham.

Mr. Philip Crowley, Croydon, sent some very finely grown and freely flowered plants of *Ada aurantiaca*, an Orchid not often seen in such quantity from one source; several good plants of *Cypripedium villosum* (the pale var.) flowering freely, and some good *Odontoglossum* (awarded silver Banksian). Messrs. Sander and Co. had finely grown and flowered examples of *Oncidium ampliatum* and the majus variety, between which and the type there is a marked difference in the vigour of the spikes, although the individual flowers are more nearly equal; this fine old Orchid is all too rarely seen now in good condition. *Odontoglossum crispum*, a most superior variety, the flowers of extra size and massive looking, the petals and sepals quite double the width of those of ordinary kinds, the colour almost white, with an absence of the spotting so often seen, was also shown here. *Dendrobium Brymerianum*, the long-bulbed variety, which has larger flowers than the dwarfier form; a *Spathoglottis* with chrome-yellow flowers; good forms of *Odontoglossum Pescatorei*, of *O. triumphans*, and *O. Reichenheimi*, the last with a rosy lip, the sepals and petals barred with dark chocolate, were also well shown. Of *Cattleyas* there were *C. Trianae alba*, *C. Schroederæ*, with *C. Lawrenceana*, the last of deeper colour than usual. *Dendrobium Dalhousianum* was grandly shown with large flowers. *Cypripedium Rothschildianum* with one spike bearing three flowers, and *C. ciliolare*, with *C. hirsutissimum* superbum, were likewise included. *Restrepia antennifera* was also shown in this group (silver Flora medal).

Smaller exhibits comprised a freely-flowered and fine variety of *Dendrobium Devonianum* with long racemes from Mr. Thomas Gabriel, Streatham; *Cypripedium compactum*, bearing some resemblance to *C. Sedeni candidum*, but of much richer colour, from Mr. Ingram; *Dendrobium nobile* Stonei,

a large pale form; *D. heterocarpum*, with its creamy flowers; *D. splendidissimum Statterianum*, with fine large blooms; *D. nobile* (Oakwood var. after nobilium), brighter even than that fine variety, if not deeper in colour also, all from Mr. Statter. From Sir Trevor Lawrence came *Dendrobium superbum Burkei*, with large white flowers, having a pale rose flush upon them and a rosy pink blotch on the lip; *Dendrobium cretaceum*, another pale variety; *D. anosmum Dayanum*, of a deep heliotrope colour and long slender growths; *D. micans*, a grand hybrid between *D. Wardianum* and *D. lituiflorum*, with large flowers of a rosy pink shade and a large blotch upon the lip; *D. Venus* (nobile \times Falconeri), another superb hybrid with flowers as large as those of the last-named parent and with the form of the former, the colour intermediate. Mr. Temple, Leyswood, Tunbridge Wells, sent *Lycaste plana*, a tall species, and *L. plana Temple*, in which the colour is much deeper in the inner parts of the flowers. A nice little collection was contributed by Messrs. Lewis and Co., Southgate, comprising *Oncidium Marshallianum*, *Odontoglossum Halli*, *Cattleya Schroederiana*, *Oncidium lamelligerum*, *Odontoglossum triumphans*, and others. From The Dell collection of Baron Schroeder came, as usual, some choice things; on this occasion there were *Odontoglossum Pescatorei* *Schroederæ* with two spikes, and a cut specimen, a lovely variety; *O. luteo-purpureum Amesianum*, pale yellow with the faintest shading of pale green—quite a distinct gem in its class. Besides these there was another hybrid *Lælia* of the *L. cinnabarina* family. In this case the colour was a pale orange in the sepals and petals, with a light lip, in parentage evidently closely allied to the hybrid shown at the last meeting. Messrs. Veitch and Sons staged a few choice hybrids also, of which *D. Alcippe* was a fine variety, promising in form of growth and flower to be as free as *D. nobile* (*Wardianum* \times *lituiflorum* *Freemanni* are the parents). The growth is that of the last-named, with the colours mainly of the first parent. Mr. Elwes showed *Ophiris spicata*, a singular-looking Orchid with beetle-like flowers. He also had a good example of *Orchis tridentata*. Messrs. Pitcher and Manda showed some plants of *Cypripedium caudatum* and the var. *roseum*, both bearing fine flowers; also a hybrid, *C. macropterum* (Lowi \times *superbiens*) and another in *C. orphanum* (*Druryi* \times *Argus*), *C. Druryi* being also shown. Mr. Le Doux, East Molesey, showed *Odontoglossum triumphans splendens*, a very fine variety with broad sepals and petals; also a large form of *Odontoglossum Andersonianum* and a variety of *Cattleya intermedia* called *Faustiana*.

Floral Committee.

First-class certificates were given to—

BROWNEA ARIZA, an orange-scarlet variety of this tall-growing stove plant, also known under the name of *B. princeps*, having been introduced from Columbia in 1843, so not in any sense a new variety. From Mr. Moore, Royal Botanic Gardens, Dublin.

SCHIZOCODON SOLDANELLOIDES.—A gem amongst dwarf plants, brought from Mzyanoshta, in Japan, in 1891 by the exhibitor, having been sent to Kew Gardens in 1892, where the authorities named it and said it was the first living plant brought to England. It is in growth only 2 inches or 3 inches in height, with pale rosy pink blossoms in small spikes; the foliage is rigid and not unlike very miniature leaves of *Berberis aquifolia*. Shown by Captain Torrens, Hayes, Kent.

AUCUBA JAPONICA FRUCTU-ALBO.—A variety with green foliage, vigorous growth and creamy coloured berries.

Awards of merit were given to—

OLEARIA STELLULATA.—A dwarf-growing shrubby plant, with minute foliage and small pure white Marguerite-like flowers produced in dense tufts. We surmise this is a Cape or South African plant, and it should prove very useful from a decorative point of view. From Messrs. R. Veitch and Sons, Exeter.

RHOPOLOBLASTE HEXANDRA.—A Palm with *Damanacrops*-like habit, save only the spines, of

which it is destitute; the foliage is larger than in *Cocos Weddelliana*. From Messrs. J. Laing and Sons.

SCILLA SIBIRICA VERA-ALBA.—A pure white variety of this early-flowering Squill. From De Graaff Bros., Leyden.

AMARYLLIS OPHELIA.—A very distinctly marked seedling, with broad petals and large flowers, the habit vigorous, the colour dark crimson in the centre, reticulating outwards upon a pale ground, with traces of crimson around the edges. From Messrs. B. S. Williams and Son.

AMARYLLIS SYREN.—A very fine deep rose-pink hybrid, with large flowers and a vigorous spike; this is a distinct variety in its colour and of bold appearance. From Messrs. Veitch and Sons' collection.

AMARYLLIS LIGHTNING.—A bright scarlet seedling with a light starry centre; the flowers large, the spike a tall one and vigorous, the colouring very pure. From Messrs. Paul and Son.

RHODODENDRON YELLOW GEM.—Another of the javanico-jasminiflorum hybrids with pure pale soft yellow flowers of large size and much substance, a decidedly distinct addition in its class. From Messrs. Veitch and Sons.

MAGNOLIA STELLATA (syn., *Halleana*), pink var., of which cut examples were shown for comparison with the type, which has white flowers. This will be an acquisition to early-flowering hardy dwarf shrubs. From Messrs. Veitch and Sons.

LILAC ALPHONSE LAVALLEE.—One of the double forms, bearing large double flowers in dense spikes, the colour a pure lilac; shown as a dwarf pot plant, in which way it will undoubtedly be useful. From Messrs. Paul and Son.

CLIVIA BEECHDALE.—A bright orange-scarlet seedling, bearing medium-sized flowers in large umbels or trusses. From Mr. J. C. Geiselbrecht, Beechdale, Kent.

CEREUS HOVEYI.—Presumably a hybrid, very closely allied to *C. speciosissimus*, but with that peculiar violet inner shading greatly intensified. The habit is that of the species quoted, probably a little dwarfier of the two. From Messrs. F. Ross and Co., Merstham.

CYCLAMENS.—For the superior quality of the strain, in which the pure whites and the intensely deep crimsons were remarkably fine. From the St. George's Nursery Co., Hanwell.

Messrs. Paul and Son had a fine bank of pot Roses, amongst which the finest were Francois Levet, Merveille de Lyon, Mme. Gabriel Luizet, and Heinrich Schultheis of the H.P.'s, and Innocente Pirola and Mme. Caroline Testout of the Teas. Of Mrs. Paul (a Bourbon) a nice basketful of dwarf plants was exhibited; this is in all respects a splendid pot Rose, lasting well in good condition. Dwarf plants of the Polyantha section were also included, such as Gloire de Polyantha, White Pet, and Little Dot, with Mignonette, all being shown well. This group also included a beautiful basketful of early alpine and other dwarf flowers, as *Hepatica angulosa*, *H. triloba rubra* and *alba*, *Adonis vernalis*, *Primula altaica*, *P. Croussi plena*, *Draba aizoon*, *Anemone Pulsatilla*, *A. patens*, *Caltha palustris plena*, *Cardamine trifoliata*, and early spring bulbs, seedling *Amaryllis*, varieties of new Lilacs, as Mme. Legraye, Leon Simon and others, with a promising new seedling *Canna* of the dwarf section called *The Primrose*, a pale yellow, self-coloured variety (silver Flora medal). Messrs. H. Low and Co. sent a large bank of early-flowering New Holland and Cape plants in profuse bloom; the best of these were *Pimelea spectabilis*, *Boronia heterophylla*, *Acacias* of sorts, *Ericas* and *Epacrids*, also dwarf *Azaleas* and such old-fashioned plants as *Hibbertia Reidi* and *Correa cardinalis*, with standards of *Polygala Dalmaissiana*, making in all a very showy exhibit of useful decorative plants (silver Flora medal). Messrs. Laing and Sons had a miscellaneous group of fine-foliaged and flowering plants, comprising *Dendrobium Wardianum*, *Cymbidium Lowianum*, and other Orchids, with *Boronia*s and other early plants. Of the fine-leaved subjects note may be made of *Saxifraga sarmentosa tricolor superba* (too long a name), a beautifully variegated dwarf plant, very

effective in masses. Under a glass shade were shown *Bertolonias* in the best varieties, always attractive and interesting by reason of their rich colours. With these was shown *Leea amabilis*, a Veitchian introduction of some years back; this plant was in capital condition, the dark olive-green leaves with silvery midribs and veins harmonising so well. Several new and choice *Caladiums* were included as well (silver Banksian medal).

Having to go to press early, other exhibits must be dealt with next week.

Fruit Committee.

There was only a small number of exhibits before this committee.

The new seedling Apple Standard-bearer, which received an award of merit in December, was sent by Mr. H. Bannister, Westbury-on-Trym, for a certificate, but failed to obtain the approbation of the committee, being past its best. A collection of nine dishes of Apples was sent by Mr. J. Crook, Forde Abbey Gardens, Chard. These were not named, except one dish of Sturmer Pippin; the fruits were all plump and of good colour, having been stored for six months in cases in a damp shed without protection. The committee considered such rigorous treatment impaired the flavour. From Syon House, Brentford, Mr. Wythes sent a very fine box of Vicomtesse Héricart de Thury Strawberries. The recently certificated new Fig named St. John's was also sent by Mr. Wythes to show its early fruiting qualities, the fruits sent being from pot trees started at the end of November. A dish of Strawberries was sent by Mr. T. Osman, Ottershaw Park, Chertsey. Mr. Harrison Weir contributed a dish of Filberts of 1891 crop. These had been stored in a tin box in the soil, and were in a very good state of preservation. Mr. T. Lockie, The Gardens, Oakley Court, Windsor, sent a brace of Perfection Cucumber from seed sown on Jan. 9, fruit cut March 27, to show its early fruiting character. Mr. Osman sent a dish of Mushrooms, and a large number of baskets were sent by Mr. S. Hardy, Ash House, Parson's Green, W., as packed for market.

In the absence of Mons. H. de Vilmorin through indisposition, the secretary, Mr. Wilks, read the lecture on the "Flowers of the Riviera." The lecturer stated he viewed the subject from a purely horticultural point of view, and in noting the flowers of interest he hoped to give a faithful account of the principal varieties grown at the present date, and their value for both home use and foreign importation. With regard to home consumption, frequent changes took place owing to climatic influences, variation of soils, and the demand for diverse colours. Though the temperature of the Riviera was not a great deal higher than that of the southern part of England, there was a great decrease in the rainfall. Frosts are rare, never protracted, hence vegetation does not suffer severely, and on the hillsides owing to intense radiation the effects of frosts are not serious. In exposed or colder districts large quantities of frames are used for shelter; glasshouses are also employed for the production in winter of Roses and Pinks. Fire-heat is rarely employed, as the sun-heat is found sufficient for most purposes, the hot-water pipes, though placed in the houses, being seldom required. The *Acacia*, one of the most useful of the Riviera shrubs, was much grown, *A. dealbata* or the Silver Wattle being a great favourite and much used for floral decoration, and when sent to market fetching as much as £2 per cwt. This variety and others were largely cultivated on the hillsides and sheltered places near Cannes on clayey soils. *A. floribunda*, *A. longifolia*, *A. cultiformis*, blooming in March, were valuable for house decoration or other purposes. The *Eucalypti* in variety are largely grown, some of the varieties for the leaves, which are largely imported, and others for their beautiful flowers, which find much favour in the Paris markets. *E. robustus* is largely used on account of its light feathery foliage. There are others with white flowers equally effective for decoration. He gave a list of a large number

of flowering trees and shrubs. This will appear in the society's journal. In the Riviera Roses seemed to appear everywhere, these being chiefly of the Safrano or Banksian type. Some of the single varieties of Roses were hardier, but too perishable for market work. Such varieties as Lamarque and Gloire de Dijon do better under canvas shelter. The latter named was not a success, as it was too full in a short time. Souvenir de la Malmaison, Marie van Houtte, La France, Souvenir d'un Ami, and others of a similar character did well without fire heat and succeeded admirably against a wall. The Marguerite or Paris Daisy, both the white and yellow forms, was much cultivated. The perpetual Pinks, of which some fine blooms were sent, were now largely grown. At one time these were little known till a gardener used them as pot plants, and now they were grown in large quantities for window decoration, also under frames by the acre, and protected by straw mats or canvas screens. Roman Hyacinths were much grown in the Nice and Marseilles districts. The Narcissi are equally at home; also Jonquils, hybrid Gladioli, Tulips and Freesias, there being a good demand for the last-named. The Tulip is found growing wild near the coast in quantity, and the *Lachenalia* thrives admirably. Anemones are found in abundance in a wild state, and the better kinds are largely grown in gardens and for the market. Mignonette was much grown by the side of streams, and though occasionally cut by frosts does well and finds a large sale. The Iberis, of which good examples were shown, succeeded splendidly on banks or rockwork, and was largely grown, the variety for market being *I. gibraltaria*. The Violet was also grown in immense quantities. The lecture was illustrated by a great number of flowers kindly sent, Roses, Anemones, Pinks, and *Acacia* being shown in quantity.

Mr. Baker, in proposing a vote of thanks, said that the temperature being warmer later in the year ripened the growth of various plants, thus preparing them for flowering. This did not occur in this country; hence our difficulties.

CRYSTAL PALACE SPRING EXHIBITION.

MARCH 25.

On this occasion the show was held in the main part of the building, this being more suitable for this purpose than that portion opposite to the large organ. More room was thereby afforded for inspection, which must have been appreciated by the many visitors during the afternoon. Compared with previous spring shows this one may fairly be considered an improvement. It is, however, somewhat surprising that such sensible and appropriate classes as those for twenty-four Ghent, mollis, and pontica *Azaleas*, twenty-four *Rhododendrons*, and a group of forced herbaceous plants in flower, with yet another for forced, hardy flowering and ornamental shrubs (*Azaleas* and *Rhododendrons* excluded) should not have produced a single competitor. By a judicious selection these two latter classes more particularly would have produced a beautiful effect. Lessons in what to employ might have been taken from those plants now in flower at the Crystal Palace in the usual permanent groups in various parts.

Bulbs of divers kinds composed the greater portion of the show in the competitive classes. In the large class for thirty-six Hyacinths Mr. Douglas, Great Gearies, was a good first with high-class varieties. The spikes, if not of the very largest, were massive and not in any sense drawn, having evidently been well timed for the show. *Electra*, a light shade of blue, and *Bird of Paradise*, one of the finest yellows, were two of the best. Messrs. H. Williams and Sons, East Finchley, were second, showing a good collection. Mr. Douglas occupied the same position for thirty-six Tulips, staging another well-grown lot of plants bearing large flowers, Van der Neer and *Proserpine* being two of the most noteworthy. In this case Messrs. B. S. Williams and Son were second with an excellent selection in good condition. For twenty-four Polyanthus Narcissus Mr. Douglas had a walk over, being placed

first with the best kinds. Messrs. H. Williams and Sons occupied the same position for twenty-four Daffodils, but the varieties might have been improved upon. In the class for thirty-six Cyclamens, Mr. Petridge, Boston Park Road, Brentford, an old exhibitor, fully maintained his superiority with a grandly grown lot of plants in most profuse flower. Better than these are rarely seen. Messrs. Paul and Son, Cheshunt, were first for twelve Amaryllises, showing plants in their usual good style, and of an excellent strain. Mr. Douglas's colours were lowered in this case, he having to take second place, but with capital plants. He was first, however, for six in another class. Mr. Ford, Wexham Park, Slough, a well-known grower of Cinerarias, came well to the front for this florists' flower in both the open and amateurs' classes for twelve plants in each; these were dwarf and freely flowered and of a capital strain. Mr. Douglas also showed well. The Lily of the Valley class was well contested. Mr. T. Jannoch, Dersingham, Norfolk, however, far outdistanced his rivals, showing twelve almost incomparable specimens of culture. Messrs. H. Williams and Sons coming in second with good pots. In the Mignonette class the variety Machet was unsurpassed, the market style of dwarf plants with large dense trusses being shown; the best were those from Mr. Morle, Fenchurch Street, E.C., and the next those from Mr. A. White, Stanmore Park. The class for twenty-four greenhouse Azaleas (too large a number) only resulted in one exhibit; this was, however, a good one, the best kinds being Charmer, Comtesse de Flandre, Souvenir de Francis Vervaeke (pure white, beautifully fringed), Marie Lefebvre, and Dame Mathilde. These were shown by Mr. Wells, Longton Nursery, Sydenham. For a mixed group of stove and greenhouse flowering and fine-foliaged plants, the best group—a well-arranged one, consisting of superior examples of Clivias, as Lord Wolverton, Lady Wolverton, and John Laing, all with grand trusses; also of hybrids of Amaryllis and several Orchids, the best of which were Cymbidium Lowianum bearing seven spikes, Dendrobium Wardianum, and D. Brymerianum, with Cypripedium Elliottianum—came from Messrs. J. Laing and Son, making collectively a fine display. Messrs. J. Peed and Sons, Norwood Road, S.E., were second with a showy group. In the smaller classes Mr. Shoesmith, Shirley Cottage, Croydon, was one of the most successful exhibitors of Hyacinths, Tulips, and Narcissus; Mr. Gibson, Carshalton, being first, however, for the last. Mr. Ford was first for twelve plants of Chinese Primulas of superior growth and quality; amongst others two distinct forms of the blue variety were exhibited.

The most noteworthy of new plants were Roses Lady Henry Grosvenor (H.T.) and Christine de Noûe (T.) from Messrs. W. Paul and Son, and Mme. Caroline Testout (H.P.) from Messrs. Paul and Son. The latter firm also had two fine Amaryllises in Princess and W. Coomber. Messrs. J. Laing and Sons staged the Cypripedium aforementioned and Anthurium Laingi; whilst Messrs. Peed and Son had two new Caladiums, Reine de Danemark and Charlemagne, also an Anthurium. The miscellaneous groups constituted all-important features. Messrs. Paul and Son had one of the best, consisting of well-grown pot Roses, forced Lilacs, of which Mme. Legerance and Alphonse Lavallée, the former a pure white, single, and one of the best for pot culture, and the latter a pale double-blossomed variety of lilac colour. Mr. Jannoch had a splendid group of Lilies of the Valley arranged in various methods, but all of first-rate merit, as was testified to by the crowds who surrounded this exhibit. Messrs. W. Paul and Son staged another splendid lot of cut blooms of Camellias, Mathotiana, alba plena, and conspicua claiming attention. Mr. Petridge staged a fine group of Cyclamens; but a larger one, with greater diversity of colours, the plants, however, smaller, but of the highest excellence, came from the St. George's Nursery Co., Hanwell, the white varieties here shown being very fine. A miscellaneous group of greenhouse and forced plants came from Messrs. W. Cutbush

and Son, which made a gay exhibit, Azalea mollis in variety and Lilacs, Boronias, Otaheite Oranges in pots, with Ericas and Epacris, also Acacias comprising the principal families represented. Messrs. J. Peed and Son staged a selection of small table and vase plants, smaller than usual, but none the less useful. Mr. Slogrove, Gatton, Reigate, had a very pleasing basket of Neapolitan and other Violets. Messrs. Ryder and Son showed several varieties of Primula Sieboldi in variety and other flowers. Of the Primulas aforementioned, the best forms were those called Delicata, Queen of the Whites, Alba magnifica, Ruby Queen, Brilliant, Fairy Queen and General Gordon. Several of these were shown in quite small pots. Mr. Hardy had an exhibit of Mushrooms as marketed, having to all appearance been grown upon outside beds.

A full prize list will be found in our advertising columns.

HORTICULTURAL EXAMINATIONS.

TO THE EDITOR OF THE GARDEN.

SIR,—I trust that the importance of the subject may be my excuse for troubling you. Our society, in compliance with numerous requests from County Councils, directors of technical institutes, lecturers, and others, is going to hold an examination in the elementary principles and in the practice of horticulture. The date fixed for the examination is Thursday, May 4. Being anxious that everyone in the United Kingdom who desires to sit for such exam. may have the opportunity of so doing without unreasonable difficulty, we are prepared to institute such exam. in any village or town in the kingdom, where any magistrate, clergyman, schoolmaster, or any responsible person accustomed to the conduct of examinations will undertake to act as our representative and see that our rules are strictly observed, and that no copying or consulting of books, &c., takes place. Anyone, therefore, wishing to sit for such exam. can do so close to his own home if he will by the end of the first week in April put me in communication with any such responsible person who is willing to act as our supervisor of the exam. Obviously we must leave this part of the work to the candidates themselves, as we cannot know the names of suitable and willing persons in every village and town in the country.

Three scholarships of £26 a year tenable for two years are offered in connection with the examination, and I am already in correspondence with a very large number of persons in all parts of the country with reference to it.

A fee of 3s., payable in advance, will be charged to all persons entering for the exam., and all letters on the subject requiring an answer should contain a stamped and directed envelope. I need hardly say that the fee of 3s. will not nearly cover the necessary expense of the exam., which will, therefore, entail considerable loss on the society's general funds, but the council are of opinion that by making the fee as low as possible they are promoting the best interests of horticulture, and they trust that their action will commend itself to all lovers of gardens.

W. WILKS, Sec. R.H.S.

P.S.—The entrance fee should in all cases be sent to me before the date of examination.

Dog's-tooth Violets are flowering freely in Messrs. Barr's nursery at Long Ditton. We think few plants are more interesting in the spring than Erythronium dens-canis and its varieties, besides such beautiful forms as grandiflorum album, which has finely marbled foliage and large white flowers. The Dutch varieties of E. dens-canis are very beautiful, and we hope to see them become more common in gardens, as they are not difficult to grow if the soil is light and moist. Some of the forms deserve all praise, especially those with yellow at the base

of the segments and violet-coloured anthers. Why are not such exquisite flowers grown in good gardens? It is difficult to say, unless possibly they are unknown, but they are invaluable, the flowers large, very pleasing in their shades of colour from rose-purple to white.

A NOTE FROM OAKWOOD.

TO THE EDITOR OF THE GARDEN.

SIR,—In my note on early spring flowers (page 195) I recommended using Sedum pulchellum as a carpet in which to plant Leucojums. Not being sure of the name, I consulted a first-class authority, who named it Sedum pulchellum. Since then I showed pieces of the Sedum to a great authority; he believed it to be S. Ewersi, but as there still seemed some doubt, a third was consulted, who provisionally named it S. hybridum, but required to see the flowers. These Sedums are very puzzling. With your permission I will send the name when finally settled, and meanwhile ask to correct the name S. pulchellum. Since my note another lovely Iris, I. Rosenbachiana, bloomed on March 10 in our bulb bed, and about the same time several plants of Tecophylaea cyanocrocus, both the blue and blue and white forms, all beautiful. We succeed better with both of these plants in the open air than under glass. Rhododendron praecox superbum shown in the Kew collection at a recent R.H.S. meeting lasted this year for some time, but then the hard frost caught the blossoms. This plant should, I think, be grown more, and be placed both in sun and shade, so that some would escape, owing to the different times of flowering, the short frosts so common at this season. Our largest plant is 5 feet high and 5 feet wide, and, owing to the habit of free-flowering, was very beautiful. As you say at page 245, speaking of Shortia galacifolia, that you "hope to see this beautiful plant become common," I may mention that if planted in light peaty soil in shade it grows quite satisfactorily. We first tried it in loam in sunny places and failed.

G. F. WILSON.

Death of Major A. McKenzie.—We are sorry to announce the death, in his 64th year, of Major Alexander McKenzie, of the Warren, Loughton, Essex, who, since 1879, has filled the office of superintendent of Epping Forest, under the Corporation of London. Major McKenzie was a skilled expert in all matters of forestry, and was selected by the Epping Forest committee from a number of well-qualified candidates. His salary was recently raised to £750 a year. He was one of the oldest officers in the Honourable Artillery Company, and took a leading part in the affairs of that regiment. He was a Scotchman, and at one time in business at Brighton, and he also had charge of the Alexandra Park, under Mr. Francis Fuller, who started it.

Names of plants.—*M. M.*—1, Cattleya Percivaliana; 2, Cattleya Trianae, very good variety; 3, Laelia cinnabarina. —*D. J. B.*—1, Odontoglossum Cervantesi; 2, Oncidium cucullatum; 3, Ptilmna laxa; 4, Oncidium divaricatum. —*B. W., Eltham.*—1, Asplenium cicutarium; 2, Diplazium brevissimum; 3, Dennstaedtia davallioides; 4, Lomaria discolor; 5, Pteris scaberula; 6, Litobrochia vespertilionis; 7, Adiantum formosum; 8, Phegopteris drepana. —*C. Robinson.*—1, Cyrtomium falcatum; 2, Phymatodes nigrescens; 3, Phlebodium dictyocallis; 4, Pleopeltis stigmatica. —*H. Rudd.*—1, Dendrobium nodatum; 2, Lycaste aromatica. —*J. Jamieson.*—1, Dendrobium Linawianum; 2, Celoglyne flaccida. —*J. H.*—Chysis bracteescens. —*W. H.*—Rubus spectabilis. —*Anon.*—Saxifraga oppositifolia major. —*Mrs. Kingham.*—Cupressus Lawsoniana erecta viridis. —*Mrs. Blackwell.*—Triteleia uniflora lilacina. —*J. D., Clapham Lodge.*—Probably Tropaeolum tuberosum.

Name of fruit.—*A. M.*—Apple Northern Greening.

WOODLAND.

THE WHITE PINE.

As a timber tree the White Pine possesses more good qualities than any other tree that is a native of Massachusetts. It is easy to grow it from the seed or transplant it when young; it will grow on a light sandy soil or on a peat meadow; on an ordinary soil the growth is quite rapid, making in thirty-five years from the seed a tree large enough to be sawed with profit into box boards or coarse lumber; it makes lumber that can be used to advantage for a great variety of purposes.

When a Pine forest is to be grown from the seed, an effort should be made to secure seed that is new and taken from the cone but a few days before the time it is wanted for planting. The cones containing the seeds begin to grow in June, and when of the size of the end of one's finger they stop growing until the following year, when, during the summer, they grow to full size, and perfect their seeds early in September; the first frost severe enough to kill Squash vines opens the cones and the seeds drop out; they are about the size of a Parsnip seed, are very light, and, having a little wing on them, they float along through the air in a slightly downward direction, reaching the ground sometimes twenty rods from the parent tree, but more frequently not more than from one to five rods. Soon after reaching the earth the little wing separates from the seed, and if the seed is to germinate it becomes partially or wholly covered with earth by a heavy rain, or by the pressure of the foot of a passing animal, or the falling leaves may furnish sufficient protection to preserve its vitality. When Nature is permitted to carry out her own plan of propagating the White Pine, her work is more irregular than when assisted by man. Should the seeds leave the cones when there is but little force to the wind, they will drop very near each other at no great distance from the parent tree, and the result will be that a hundred small trees will grow on a space not large enough for more than one large one; but if the seeds leave the cones when the wind is high, they will be carried great distances and spread over a wide territory. When man, without too much labour, can assist Nature in the more even distribution of the seed, it is desirable he should do so; but when he cannot, he may be able to prevent crowding by removing some of the small trees where they cover the ground too thickly, setting them out in another place where they cannot interfere with each other.

When the seed is to be planted by man, the cones should be gathered just before the first frost in the autumn and placed small end up in the Grass away from all enemies. After the first heavy frost, gather up the cones and shell out the seed by turning them small end downward over a vessel and giving them a rap with a stick, when the seeds will drop out. As soon as the seed is shelled it should be planted; it is a mistake to dry Pine seed several months before planting.

The method of planting must depend on the condition of the soil. If it is a barren plain, shallow furrows may be ploughed from east to west 5 feet apart, turning the furrows to the south to afford a partial shade to the young plants. The seed should be planted on the south side of the open furrow, dropping two seeds near each other, then leaving a space of 4 feet or 5 feet, and covering the seeds with earth enough to keep them moist, say not far from one-half an inch in depth. On rocky land, or where the soil is hard, dig out with a sharp spade a small sod where the seeds are to be planted, leaving the sod near the hole on the south side for shade, and planting the seed the same as in furrows. In a favourable season enough seed will germinate to cover the land; but if the season be unfavourable, a portion of the land will have to be re-seeded the following year. Where the land is shaded by trees, germination will be more certain; but in such places when the seedling Pines are two years

old they should be let out into the sunshine by removing the trees that shade them.

In localities where seedling Pines that grow naturally are numerous, it is not expensive to cover land with Pines by transplanting the young trees. To do this to the best advantage, trees should be selected that are not over 6 inches in height, and in removing them a small ball of earth should be removed with each tree, care being taken not to expose the roots to the light or the air, and it is always best to do the work on cloudy days. The trees should be set 5 feet or 6 feet apart, and as they grow, a sufficient number should be cut out to prevent crowding. When large enough for box boards or coarse lumber, not more than four or five trees should be left on each rod of land.

On an average soil, thirty-five years are sufficient to produce White Pine timber of a profitable size to cut for coarse lumber. It is more profitable to cut the trees at this age than to let them stand long enough to produce trees large enough for clear lumber. It is a mistake to suppose that trees large enough and good enough for clear lumber can be grown on any soil; it is only on soils best adapted to the growth of the White Pine that it is wise to let the trees stand after they are more than 20 inches in diameter. On ordinary, and even on very barren soils the young trees grow quite rapidly, and unless the soil is very unfavourable, they will make a satisfactory growth until the largest trees are 10 inches or 12 inches in diameter. Beyond this size, if the land be well covered with trees, a very large portion of them will show signs of decay, and only a few growing in the most favoured places will continue to grow rapidly; thus the decay on the lot will be nearly equal to the growth.

While it requires but from twenty-five to thirty-five years to grow the White Pine large enough for box boards, it requires from sixty to seventy years to grow it large enough for clear lumber. When we consider the fact that there is always a ready sale at remunerative prices for coarse lumber, and also the uncertainty of getting first quality of lumber by thirty years of additional growth, it would seem unwise to encourage owners of Pine timber forests to let the trees stand after they are large enough for coarse lumber, except on land strong enough to keep up a rapid growth until the trees are 3 feet or more in diameter.

Four White Pine trees set thirty-one years ago now measure at 3 feet from the ground, as follows: one 60 inches in circumference, one 65 inches, and two 66 inches; the 65-inch tree grows in a wet soil, the remaining three are in a gravelly loam not rich enough to produce more than 800 pounds of hay to the acre. These trees when transplanted were not over 6 inches in height, and they have grown with other trees set at the same time so near each other that they now completely shade the land. Two trees set on a poor gravelly knoll twenty-five years ago now measure 33 inches and 39 inches in circumference; these trees were about 12 inches in height when set; they have grown on open land.

There have been many opinions advanced in regard to thinning and trimming White Pine forests, and these divergent views have to some extent been caused by a difference of opinion as to how long the trees should be permitted to grow. If a Pine forest is to be cut when large enough for coarse lumber, it should be treated differently from one that is to stand long enough to make clear lumber; but little need be done with the former except to cut out the dead and dying trees, while the latter should be carefully looked after from the time the trees are 8 feet high until the limbs on the trunk are all off to the height of 20 feet or more. As early in the growth of the forest as possible, the trees that are to remain for lumber should be selected, and the lower limbs on the trunk cut off as fast as it is considered safe to do so and not injure the vigour of the tree; this work should be done in June. After having chosen the trees that are to make the future forest, all the trees between them should be kept back and destroyed as fast as they appear to crowd the selected trees; but it is well to let the trees between stand quite near to the selected ones until they are 20 feet high if they do

not overshadow them. By so doing the trees will grow higher and the trunks will have fewer limbs, thus securing clear lumber; in fact, a good White Pine timber tree rarely ever grows in an exposed position; it must grow where it is surrounded by other trees, or it will not make a long, straight and clear timber-log; he who is to trim a timber lot must ever keep this fact in mind, and do his work in such a manner as will best assist Nature in her efforts to produce trees of the best type for man's use. It is not wise to attempt to grow more than 160 or 170 timber trees to the acre.—EDMUND HERSEY, in *Garden and Forest*.

Distances of planting Larch.—With the remarks on this subject on p. 248 I cordially agree. During the last twelve years I have planted here close upon 400,000, and in all cases but one the distance was 4 feet from row to row, and 3 feet in the rows. This space leaves the trees in the right position for thinning. The practice in this neighbourhood is to commence to thin at the end of twelve years' growth, using the thinnings for Hop poles, which range from 11 feet to 14 feet. After that the trees come in for fencing rails used whole, the next stage being for the same purpose, but sawn down the middle. The exception previously noted was in the case of a number of plants that were eaten partly off by rabbits. Instead of pulling those up that were damaged, new trees were put in, the result being that many are now standing but 2 feet apart; poor weakly things they are in many instances, affording a capital object lesson. Two years since I saw on a nobleman's estate a batch of Larch, growing much less than 18 inches apart from each other, and sorry objects they were, fit only for firewood.—E. MOLYNEUX, *South Hants*.

Tree planting.—The Irish Land Commissioners are this season engaged in planting a considerable area in Galway, principally for shelter and wind belts in the south-west portion of the country, which is exposed to the sweep of the Atlantic gales. This is a part of the congested districts scheme initiated by the late government, and now being carried out by the present one. There is a very large acreage of ground in this section of Ireland lying waste, without practically any attempt at cultivation, except in very small patches, and with the exposure to western gales, any attempts at cultivation of the land must be accompanied with very questionable results, but after shelter is obtained and drainage of the land carried out, thousands of acres could be made available for agricultural purposes, and now that a light railway has been run through the district, market towns will easily be accessible for the produce. The number of forest trees that the Irish Land Commissioners are planting this season is a little over one million, principally Scotch Fir. In this item Messrs. Wm. Fell and Co., of Hexham, were entrusted this season with orders for over 350,000 trees.

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Abutilon vexillarium
do. vitifolium
Acacia dealbata
do. leprosa and lineata
Acantholimon venustum
Adenocarpus decorticans
Aerides Lawrencei
Aethionema pulchellum and Anemone
vernalis
Agonis flexuosa and Kennedyia coccinea
Allamanda grandiflora
do. violacea
do. Williamsi
Alstroemeria aurantiaca and vars.
do. hybrid
Amaryllis Belladonna
do. Nestor and splendid
Amelanchier canadensis
Andromeda fastigiata and Veronica pin-
guifolia
Androsace foliosa
do. lanuginosa
Anemone alpina sulphurea
do. Fannini
do. japonica, pink and white
do. Japanese
do. nemorosa, forms of
do. Pulsatilla (the Pasque Flower)
do. ranunculoides and A. thalic-
troides
Angraecum caudatum
Anoanthus breviflorus
Anthurium atrosanguineum
do. Rothschildianum and vars.
Antirrhinum, group of
Aquilegia Stuarti
Arctotis acaulis
Arenaria baccarica
Aristolochia elegans
Aster acris
do. Anellus and A. linarifolius
do. Stracheyi
Auricula Golden Queen
Auriculas, group of
Azalea Deutsche Perle
do. Hexe
Azaleas, occidentalis vars.
Beaufortia splendens
Beaumontia grandiflora
Begonia Haagiana
do. John Heal
Begonias, two tuberous
Benthamia fragifera
Berberis vulgaris asperma
Bessera elegans
Lignonia Cherere
do. speciosa
do. Tweediana
Billbergia vittata
Blandfordia Cunninghamii splendens
Bomarea conferta
do. frondea
do. oculata
Boronia heterophylla
Bouvardia President Cleveland and B.
Mrs. R. Green
Brier, Austrian Copper
Briers, Scotch
Browallia Jamesoni
Burtonia scabra, villosa and Johnsonia
lupulina
Caesalpinia japonica
Calanthe Veitchii
Calanthes, hybrid
Calceolarias, a new race of
Callicarpa purpurea
Callistemon rigidus
Calochortus flavus
Caltha leptosepala and Alyssum mon-
tanum
Camellia reticulata
Camellias, two new Japanese
Campanula isophylla and var. alba
Canna Louis Thibaut and Victor Hugo
Cantua dependens
Carnation Harmony
do. Ketton Rose
do. M. Bergendi and Mlle. Roussel
do. Queen
do. Tree, Mr. A. Hemsley
Carpenteria californica
Catasetum Bungei
Cattleya Percivaliana
Celsia cretica
Cercis siliquastrum
Cereus Lemairi
Cerinthe retorta

Chimonanthus fragrans
Chionodoxa Luciliae var. gigantea
Chrysanthemum America and C. Lady
Brooks
do. Elaine and Soleil d'Or
do. a single
do. (single) Jane and its
yellow var.
Chrysanthemums, Japanese Anemone-
flowered
do. two hardy
Cineraria aurita
Cistus crispus
do. florentinus
do. formosus
do. ladaniferus var. maculatus
do. purpureus
Clarkia elegans fl. pl.
Clematis Stanleyi
Clerodendron Kämpferi
Climanthus Dampieri marginatus
Clitoria ternatea
Coburgia trichroma
Coeogyne cristata maxima
Convolvulus mauritanicus
Coreopsis tinctoria var.
Cosmos bipinnatus
Crataegus tanacetifolia
Crinodendron Hookerianum
Crinum Powellii
Crocuses, group of autumn
Crossandra undulata
Cyclamen Coum and C. Atkinsi
do. repandum and Rosa alpina
Cypripedium acule and C. pubescens
do. Dominianum
Cytisus Andreana
do. nigricans
Daphne Genkwa
do. Mezereum autumnalis and Cy-
donia japonica Moerloosei
do. Mezereum vars.
Dendrobium thyrsiflorum
Dianthus alpinus and Erodium macra-
denium
do. neglectus
Dictamnus Fraxinella var. alba
Diets Huttoni
Digitalis, spotted variety
Dimorphotheca graminifolia
Disa racemosa
do. Veitchii
Dodecatheons, a group of
Echium callithyrum
Eleagnus parvifolia
Eleocharis cyaneus
Eomecon chionantha
Epacris, new varieties of
Epidendrum macrochilum album
Eranthemum cinnabarinum
Eremurus Bungei
do. robustus
Erica hyemalis and E. h. alba
do. propendens
Erigeron aurantiacus
Erysimum pumilum and Sedum spatuli-
folium
Erythronium Dens-canis
Eucalyptus leucoxylon
Eucharis amazonica
Exacum macranthum
Forsythia suspensa
Franciscea calycina grandiflora
Fritillaria aurea
do. Meleagris var.
Fuchsia dependens
do. triphylla
Gentiana bavarica and Aquilegia glan-
dulosa
Gerbera Jamesoni
Gesnera cardinalis
do. longiflora
Geum miniatum
Gladioli, new hybrid: 1, La France; 2,
L'Alsace; 3, Masque de Fer
Gladiolus sulphureus
Gloriosa superba
Griffinia hyacinthina
Haberlea rhodopensis and Campanula
turbinata
Habrothamnus Newelli
Hamamelis arborea
Helenium autumnale pumilum
Helianthemum algarvense

Hemerocallis Dumortieri
Heuchera sanguinea
Hibbertia dentata
Hibiscus Hugeli
do. Rosa-sinensis fulgens
do. Trionum
Hunnemannia fumarifolia
Hyacinthus azureus
Hypericum oblongifolium
do. olympicum
do. triflorum
Hypocalymna robustum
Illicium floridanum
Impatiens Hawkeri
Ipomoea Horsfalliae
Iris aurea
do. histrioides
do. Histrio
do. ochroleuca and I. Mouspur
do. pallida
do. paradoxa
do. pavonia and I. pavonia cœrulea
do. susiana
do. tingitana
Ismene Andreana
Ixora Westi
Kempferia rotunda
Kennedyia Marryattiana
Kniphofia aloides var. glaucescens
do. caulescens
Lelia albida
Leonotis Leonurus
Leschenaultia biloba major
Lewisia rediviva and Micromeria Pipe-
rella
Lilium canadense, red and yellow forms
do. Henryi
do. japonicum
do. nepalense
do. nepalense var. ochroleucum
do. speciosum rubrum
do. superbum
do. Szovitzianum
do. Thunbergianum Alice Wilson and
Van Houttei
Limncharis Humboldtii
Linaria alpina and Phyteuma humile
Linum arboreum
Lonicera sempervirens minor
Luculia gratissima
Magnolia conspicua
Malva lateritia
Marica cœrulea
Mascarenhasia Curnowiana
Maxillaria Sanderiana
Miltonia spectabilis and var. Moreliana
Mina lobata
Montbretia, new hybrid
Muscari neglectum, Heldreichi, conta-
minatum, botryoides album
Mutisia Clematis
do. decurrens
Myosotidium nobile
Narcissus Broussonetti
do. triandrus var. albus and N.
cyclamineus
Nigella hispanica
Nymphaea Marliacea (Canary Water Lily)
Odontoglossum Cervantesi decorum
do. Harryanum
do. Wattianum
Oenothera marginata
Olearia insignis
Oncidium Cressus
do. Jonesianum
do. Lanceanum
do. Phalaenopsis
Ornithogalum nutans
do. pyramidale
Orobanchaceae
Ostrowskyia magnifica
Oxalis Bowieana
Oxera pulchella
Oxytropis Lamberti and Acantholimon
glumaceum
Paeonia albiflora Adrian
do. decora clatior, P. lobata, P.
anemoniflora
do. Moutan var. Reine Elizabeth
do. Venus
do. Whitleyi
Paeony, single white Moutan

Pansies (tufted) Duchess of Fife and
Hartree
do. Quaker Maid and Jackanapes
Pansy (tufted) Violetta
Papaver orientale
Passiflora cœrulea Constance Elliott
do. racemosa
do. Watsoniana
Paulownia imperialis
Pavonia Wioti
Phalaenopsis gloriosa
Philadelphia microphyllus
Phlox Drummondii (some good vars. of)
Phyllocactus delicatus
Pinguicula caudata
do. grandiflora and Viola pedata
Pink Her Majesty
Podalyria sericea
Polygala Chamæbuxus purpurea
Primrose College Garden seedling
do. Oakwood Blue
Primula floribunda
do. imperialis
do. minima and Epilobium obcor-
datum
do. Sieboldii, white and light vars.
Prunus Pissardi
do. trilobus
Ramondia pyrenaica and Omphalodes
Luciliae
do. pyrenaica alba
Ranunculus Lyalli
Reinwardtia tetragynum
Rheum nobile
Rhododendron Ceres
do. kewense
do. multicolor hybrid
do. nilagiricum
do. racemosum
Rhododendrons, Hybrid Java: 1, luteo-
roseum; 2, Primrose; 3, jasmini-
florum carminatum
Rosa indica var.
Rose Anna Ollivier
do. Comtesse de Nadaillac
do. Innocente Pirola
do. Jean Pernet
do. Laurette Messimy
do. Mme. de Watteville
do. Mme. Nabonnand
do. Marquise de Viven
do. Marie van Houtte
do. Mrs. Paul
Ruellia macrantha
Saccobolium bellinum
Sarracenia, new hybrid
Saxifraga Boydii
do. Fortunei
Scabiosa caucasica
Schubertia grandiflora
Sedum corsicum
Senecio macroglossus
Shortia galacifolia
Snowdrops and winter Aconite
do. eight kinds of
Solanum Seaforthianum
do. Wendlandi
Stanhopea platyceras
Stenandria lutea and S. angustifolia
Stigmaphyllon ciliatum
Streptocarpus Galpini
do. vars. of
Streptocarpus, hybrid
Sweet Peas, Hill, Stanley, Mrs. Eckford,
Orange Prince, and Dorothy Tennant
Thalictrum anemonoides and Saxifraga
caesia
Thunbergia laurifolia
Trolius europeus and T. e. aurantiacus
Tulipa vitellina
Tulips, old garden
do. southern (T. australis)
Tydea Mme. Heine
Urecolina pendula
Ursinia pulchra var. aurea
Vanda teres
Vesicaria graeca
Wahlenbergia saxicola
Waldsteinia triflora
Xerophyllum asphodeloides
Zauschneria californica
Zenobia speciosa pulverulenta
Zephyr Flower (Zephyranthes Atamasco)
Zephyranthes candida
Zygopetalum crinitum

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"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare.*

ORCHARD AND FRUIT GARDEN.

TOO MANY VARIETIES: TOO MUCH ALIKE: NOT GOOD ENOUGH!

MUCH has been well said in gardening papers of late on this timely topic. It is indeed high time to stop this unending flood of varieties of flowers and fruits which is sweeping over both Europe and America. This is especially true with Roses and Chrysanthemums, Strawberries and Grapes, and also applicable more or less in the case of many other flowers and fruits. A vast number of these so-called varieties, new and old, a majority doubtless, are practically worthless in view of the better kinds which can easily be had to replace them. Then there are numerous varieties which are so much alike in colour, flower, or general habit and characteristics, that it often requires an expert with a lively imagination to distinguish them. Thus our lists are lumbered up with a mass of names and descriptions that bewilder and annoy the seller as well as the planter and grower. Much controversy often arises between growers and sellers and fruit men generally as to the identity of sorts, and a vast amount of clean white paper in some very excellent gardening magazines is wasted in discussing the infinitesimal points of variation and the imaginary claims of merit.

Now I must not be understood as opposing the production of new varieties; not by any means. There is room enough for improvement, and every progressive effort should be encouraged. But I would proceed to reduce the number of varieties in our leading fruits and flowers, and keep at it systematically and carefully year after year until the inferior and superfluous sorts are eliminated. Let nurserymen and florists do this, and state why certain kinds have been dropped from their catalogues, then further inquiry and demand for such varieties will soon cease. Some of our best American tree and plant producers are already engaged in just this work, I am happy to say, but all should follow the example. Then all new candidates for popular favour should be carefully and thoroughly tried, and not a single one should be admitted to the list until its actual superiority or novelty above any existing sort had been fully demonstrated by competent authority. It is not enough that a new variety should be as good as an old one and not essentially different. Reject all such, but reach out eagerly for the kind which is better.

This, it seems to me, is a field in which our various organised fruit and floral societies have not laboured as intelligently and

effectively as they might have done. In our American Pomological Society, for instance, we have at times nobly resolved to purge the old fruit list which is loaded with indifferent, superfluous, and worthless varieties in spite of all the very excellent things which have been said about it. But most of them reappear in print at every revision of the catalogue, and the members are content to simply denounce the committee and talk earnestly of what ought to be done, as I do now. The same thing is even more apparent in the floral societies' lists, where little attempt has been made to do any weeding out. But how long can we afford to go on in this way?

In fact, our vegetable catalogues are padded much in the same way. Look at our lists of Potatoes, Peas, Corn, Cabbage, Beans, &c. Not over half, perhaps not more than one-third, the varieties named have any legitimate reason for retention or existence except for the mercenary advantage of the seedsmen.

Then, again, in the case of fruits, quality and flavour are remorselessly sacrificed for size and appearance. If a Strawberry is large, attractive in colour, and bears abundantly, it sells in the market and pays to grow, no matter about its flavour, or if it has any at all. A fine-flavoured Potato! Why, how many people ever stop to think about that? If it grows well, does not rot, and boils dry, the people call it a good Potato, and the market registers their opinion. But is that the true test for a table Potato? Then look at the monster Chrysanthemums, the gigantic Roses. They are indeed monstrous to every true lover of flowers. But they are fashionable and popular all the same. Must all these abnormal tendencies and corrupt tastes go on for ever? Perhaps so; yes.

Kingston, N. Y.

H. HENDRICKS.

MILDEW ON VINES.

ONLY those who have had any experience of a bad attack of mildew are in a position to fully appreciate the trouble and anxiety it causes, few other scourges doing so much damage in a short time. A house of Grapes may to all appearance be in the best of health and condition at the beginning of the week, but be nearly spoilt by mildew before the end. Not only will this much-to-be-dreaded fungoid growth quickly lower the value of, if not completely ruin a crop of Grapes, but the foliage is also liable to be overrun and suffer badly, though the full effects of this may not be seen till the following season. In order to be able to contend or, better still, effectually ward off attacks of mildew, we must first discover the cause, the effect being only too plain. There must be germs at the outset, and the question is, do these lurk in a house, or are they carried about by winds? There is no such thing as originating this disease either by faulty root treatment or bad top culture, and I cannot understand anyone who has had any experience in the matter insinuating that restoring the roots to a healthier state is a remedy for mildew. It is possible for the roots to be deep down into a cold subsoil, and in fact nobody knows where, and yet no mildew be present on the Vines, and if there were no germs lodging on either the bunches or leaves, too much atmospheric mois-

ture or a stagnant atmosphere would not cause mildew. Probably unhealthy subjects are the most liable to take the disease, though even this is open to doubt, and it must also be admitted a certain course of house treatment does favour a rapid spread of mildew.

It has been my misfortune to be associated with two bad attacks of mildew under very different circumstances and in districts very wide apart. In one instance only a single second early house was affected; in the other the Vines in every house on the place were overrun by it. Nor were we alone in our misfortune, for a great misfortune it proved, as the growers throughout the district had the same trouble. From experience gained then and since, I am of opinion the certain cause and almost surest way to invite an attack of mildew are a too free use of front ventilators. In the case of the single house alluded to, no mildew had ever been seen in it previous to the bad attack, and then it commenced on the lower part of the Vines all along the front, that is to say, immediately in front of the ventilators. The stems were not naked, but were furnished with lateral growths down to the ground, and the way the mildew over-ran the leaves and spread upwards was enough to startle the most phlegmatic observer. Up to the early part of May no front air had been admitted, but the man in charge very foolishly set the front ventilators wide open on a very bright day with an easterly wind blowing. They were closed before 12 o'clock, or directly I caught them open, but the mischief was done and the easterly wind had brought us mildew. The general attack mentioned also most undoubtedly followed in the wake of a spell of very bright weather in May, the wind blowing strongly from the east the whole of the time. There would appear to be a stage of growth when mildew can most easily effect a lodgment on Vines, and it is also very evident that the bunches take the disease more readily than do the leaves. It has been suggested that the practice of giving front air during the time when the bunches are in flower is responsible for very many attacks of mildew, and there may be and most probably is some truth in this suggestion. More often than not the disease is first observed when the berries are about the size of peas, but it may take longer to develop than we are generally aware of, though it spreads only too rapidly when once it has gained a good foothold.

All authorities are agreed that prevention is better than cure, and, in fact, no one who has had anything to do with mildew or noted its effects would think differently. A winter cleansing of rods and house generally, sulphur in particular being freely used in some form, will do much towards destroying what germs there may be left behind after a bad attack of mildew, but if my theory is right, this is only a detail, judicious or very careful ventilation being the best and only effective remedy. Especially ought a rush of front air to be prevented. It is bad for the contents of the house even supposing there was no such thing as mildew, but if admitted recklessly, and in particular when easterly winds prevail, this amounts to culpable recklessness. As very often happens, there is most inducement to admit front air when easterly winds are blowing, cloudless skies being a frequent accompaniment. With a fierce sunshine the atmosphere of a partially closed vinery soon becomes parched and heated, and the way out of the difficulty that first occurs is to open wide the front ventilators. Some vineries are not so much exposed to winds from the east

as others, or otherwise we should hear of more bad cases of mildew than at present, but no risks ought to be run anywhere. When a bright day is anticipated, the fires should be kept very low, the hot-water pipes being only just warm, and a little top air ought to be admitted early or before the heat in the house rises above 70°, more being gradually given as the sun gains in strength. If ventilation is commenced thus early, the atmosphere never becomes unduly heated and feels softer throughout the day; there is such a difference, in fact, that a close observer could soon learn to judge whether air had been given early or a delay had taken place till the heat had risen considerably. By ventilating early, sudden changes of temperature are avoided, or, in other words, no rush of cold air takes place either from the fronts or downwards. It is quite possible to admit mildew through the top ventilators, and I once saw a lot of strong Vines growing against a high back wall that were much affected by mildew, the crops on the roof escaping. This shows what a rush of cold air will do. Rather than admit much front air before the Grapes were ripe, I would greatly prefer shading the roof as being a safer means of preventing injuriously high temperatures. If front air must be given, then let it be very sparingly indeed, or only a chink all along instead of opening a few lights wider.

When once mildew has been discovered on the Vines, there must be no delay in making the attempt to check its spread. I repeat making the attempt, for it is easier to suggest remedies than to carry them out satisfactorily. It spreads most rapidly in a moisture-laden atmosphere, stagnation also favouring its growth. Do not rush to the other extreme and admit front air in large quantities, nor is it advisable to keep the house very hot and dry, or other troubles will have to be reckoned with. Strive to keep up a gentle circulation of warm air, avoid very early closing and only lightly damp down about twice a day, that is to say, in the mornings of clear days and again when closing. If only a few isolated berries are covered with the mildew, cut these out very carefully and destroy. The attack not being very serious, this may be all that will be necessary, but very often the disease gives early signs of spreading, breaking out in various places, blotches also showing on the upper surface of the leaves. There ought, therefore, to be no delay in applying the only remedy that will arrest the disease without spoiling the crop, this being flour of sulphur. There seems to be a dread of using this sulphur, owing to the difficulty of clearing the bunches of it again. When applied in anticipation of mildew, sulphur will do its work and be easily got rid of again, a pair of bellows, or, better still, two or three seconds under a good pressure of clear water, effectually removing the powder without detriment to the bloom. When, however, sulphur is applied to mildewed berries, it destroys the latter, but sticks rather badly. Better that, however, than bunches of no good whatever. What I recommend, and what I practise, is to puff flour of sulphur well into the bunches on the first signs of mildew, and the leaves also ought to have a coating. Flour of sulphur can be had cheaply from any chemist, and is most readily distributed by the aid of the ordinary india-rubber distributors.

W. IGGULDEN.

with him, but for a period of twelve years or so after planting I (and a good many others) find this Apple will not bear. I have several trees of it both standards and bushes planted fourteen years since. These have never borne fruit freely until about two years ago.—E. M.

PEACH ALEXANDER.

I AM grateful to those numerous correspondents who have replied to my inquiry and who have, therefore, tried to explain the pernicious habit of prematurely and habitually dropping of the best buds, in a semi-wholesale fashion, of this precocious variety when early forced. With all the information yet advanced, I am really but little wiser or nearer to solving the problem, for the simple reason that not one single correspondent has given any specific reason beyond that of inference or conjecture, and the same may be said of the correspondence in other gardening papers originating from this same inquiry. Doubtless there is a specific reason for this vexatious habit of bud-dropping in the case of Alexander, but it is quite clear none of us have yet discovered the precise cause, neither are we able to tell how to prevent it. Of course, prevention is the only means to cure, for once the buds commence to drop, nothing will stop them. It is not safe to accept any information gathered from a promiscuous visit to a friend's garden without corroboration. We are all agreed that Alexander is prone to cast its buds under glass, and probably the earlier the forcing the worst cases are found; but so far as information has reached me, and in conjunction with my own experience as regards outside cultivation on walls, bud-dropping is comparatively unknown. Houses with fixed lights have, doubtless, something to answer for in this respect. Mr. Iggulden says at page 236, "There is bad blood in these American introductions, inherited from one of the parents;" whilst further on he says, "This would almost point to the necessity for more sunshine to ripen the wood than is needed for English-raised varieties." Now my experience and conclusion from experiments made are the opposite.

Of course, we all admit that the large-flowered types of Peaches do not set so freely as the smaller ones, also that it is the large-flowered ones that drop worst, with a few exceptions. Again, we are all willing to admit that the Alexander Peach takes the least time to ripen of all Peaches yet in commerce; by this I mean from time of starting into growth to gathering the fruit, this short period required to mature being its chief characteristic. Therefore if one is allowed to reason by analogy, it would be perfectly fair to assume that the same characteristic precocity would be maintained all through, and that the wood, buds, and growth would also mature early in an equally shortened space of time. If such be true, and such is my opinion, it is at least feasible that the buds are kept growing on too long through the late summer and early autumn warm weather, which cannot be prevented, especially in fixed roof houses; consequently the buds do not get their essential rest early enough, but keep on swelling so long as to positively become liable to fall off when followed by colder autumn weather, which causes a check. At such an advanced stage the actual results are not visible until the house has been closed for a few weeks, and much later on. No matter how carefully or slowly forcing operations begin, the results are the same—the buds drop prematurely.

Our house in which this kind has been grown has generally been closed about December 1, but not fired regularly before January 1. The fruit is ripe last week of April, and for the last two years, owing to sad circumstances, it has been disposed of at two guineas per dozen in Covent Garden. It will thus be seen what a long season remains (from end of April through the entire summer) for the tree to remain stationary, as nearly all growth is made by the time the fruit is gathered; so, I think, it ought not to be wondered at that the buds become, in fact, too plump and over-ripe, consequently unable to stand a check in such a stage.

Whether this be the true solution of the problem or not readers are at liberty to question, but whether accepted or not, I am positively certain that Alexander's bad behaviour at Madresfield is not due to too hard firing at first, dryness at the roots, too strong insecticides, a too loose rooting medium, bad stocks, and the various items of failure so freely and so repeatedly advanced by correspondents.—W. CRUMP.

— If Mr. Iggulden's theory is the correct one, that more sunshine is needed to ripen up the wood of these American-raised Peaches than is needed for English varieties, why is it that dropping of the buds on trees growing against open walls of the same varieties does not happen? My impression is that it is on account of the wood becoming too early ripened artificially, as it certainly does when the trees are grown solely under glass and kept under cover throughout the season. Mr. Coleman once gave it as his opinion in the pages of THE GARDEN that if these American Peaches are to be grown successfully under glass, it should be as pot trees, and as soon as the fruit was gathered, or as soon as the trees could be removed with safety, they should be placed behind a north wall until needed for forcing again. This is certainly in direct antagonism to Mr. Iggulden's theory.—Y. A. H.

SYRINGING VINES.

WHETHER there is any real advantage in syringing Vines until the bunches come into flower is a point on which people differ very much. For years I have practised syringing until the shoots were a couple or so of inches long, and with very good results, and I have also had similar crops of fruit when the Vines were not syringed from the time of starting them into growth until the Grapes were cut. When I lived in Cheshire in a rather large Grape-growing establishment, none of the Vines were ever syringed. One lean-to house 200 feet long, quite low in the roof, was treated exactly like the rest in respect of syringing. The house in question was partitioned off into three, one end being occupied with late varieties, such as Alicante and Lady Downe's, the other with Muscat of Alexandria, and the third with Black Hamburg. Abundance of moisture was supplied by damping the floors and walls of the houses as well as regularly filling the evaporating troughs on the hot-water pipes. I am treating the Muscat viney here this season in exactly the same manner, and so far with very promising results. The Vines at the time I write (March 25) are just bursting into bloom. The rods broke regularly and rather more strongly, I think, than they did last year with syringing. Moisture in the atmosphere is supplied regularly and freely in the usual way, and also by watering the numerous plants underneath the Vines with which the house is fully stocked, I am sorry to say. I know some persons advocate syringing Vines until the berries are thinned; indeed, some recommend that it be continued after that stage. I have not yet seen good results from this—to me—needless method; certainly I have not seen any bunches I should like to place on the exhibition table. If those persons who follow that plan were compelled to do so with the water here, the berries would be in a sorry plight at ripening time. The water is mainly pumped from deep chalk wells, and leaves a deposit wherever it rests. By precipitating the chalk that is held in suspension in the water to the bottom of the tank by artificial means in softening the water, quite a thick substance is deposited, and when stirred it reminds one of whitewash. Under such conditions as these, syringing the bunches of Grapes would be the height of folly. While not condemning the practice of syringing the Vines at all, I assert that good Grapes can be grown without overhead syringing. This alone will not prevent attacks of red spider if other conditions are favourable to its presence, but syringing will do much to check the spread of this insidious pest.

E. M.

Apple Blenheim Orange.—If Mr. Mackay had stated that this old favourite is a sure cropper when the trees have become somewhat old I could agree.

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STOVE AND GREENHOUSE.

ZONAL PELARGONIUMS FOR WINTER FLOWERING.

THE present is a very suitable time for drawing attention to this most useful and very showy class of plants, inasmuch as it is now that propagation should be taken in hand for next winter's display, so as to secure examples of good size in about 6-inch or 7-inch pots. It is very easy to strike too soon in the case of these Geraniums (a name which I must confess I still prefer to that given as the heading) in

not any excess of moisture will do well for propagating, or they may be struck in houses on shelves where a little shaded. When safely rooted, a lower temperature will be better in every way. Supposing the cuttings have been struck in 2½-inch pots, which are quite large enough, the first shift should be into 3-inch pots, which will give ample room for a good start. As soon as these are filled (not pot-bound) with roots, 4½-inch pots should be the next shift, and thence into 6-inch pots, and the largest into 7-inch pots later on if desirable. In any case, however, the pots should be thoroughly well filled with roots by the end of August, leaving September for the ripening of

doors. This should point to the fact that some lime rubble broken up finely and mixed with the soil is good for them. Failing this useful article, some bone-meal will do almost as well, being easily assimilated by the plants, although it does not keep the soil quite so open. As to soil, nothing can surpass good fibrous loam and the best of leaf-mould, one-fourth of the latter to three-fourths of the former being good proportions. Firm potting is decidedly the best, as it keeps in check any tendency to rank growth, which ought to be avoided. In the early summer, as soon as all danger of frosts is over, the plants should stand out of doors in a sunny spot upon a bed of ashes at a fair distance apart, as in the case of forced Strawberries in growth. Two stoppings at least will be needful; if the plants have progressed in the best manner, three will be better. This should give from ten to twelve good blooming shoots by the time they are required. In any case, rather than have to pick out the first flower trusses when formed too early, it is much better to stop once more, provided there is time, than thus to waste the energies of the plants to no real purpose. Any assistance in the way of manure should be deferred until the plants are showing for flower. In this there is one essential object to be aimed at which oftentimes is lost sight of by cultivators; it is that of keeping in check a too rank development of leaf growth, which serves no actual good.

There is such a host of varieties in cultivation, that it is a difficult matter to really select just a few as the very best of each colour. Niphetos, the white variety now illustrated, stands out, however, as one of the very best of the pure whites. The growth is dwarf and compact, the leaves never large under careful treatment, whilst it is a profuse flowering kind. It is also well suited for bedding out of doors in dry positions. Swanley Single White is also a good variety of dwarf branching habit. Of the crimsons, Lord Rosebery and H. Cannell, Jun., are two of the best; Lord Chesterfield, a soft magenta, is a grand variety. In the salmon shades, Mrs. Robert Cannell and Lady R. Churchill can be strongly recommended. As a dark pink Maud of Wales should be noted, as should Mrs. Wildsmith of the rose-pinks. Of the blush-coloured kinds, Lady Brooke and Bridesmaid are two capital kinds. Another good one to complete a dozen is Marquis of Dufferin, a crimson-magenta, also a free flowering variety.—GROWER.

Messrs. Dobbie and Co., who sent us the photograph (by Messrs. Sweet and Kinloch, Rothesay) from which the engraving was made, write as follows:

This belongs to the Nosegay section. As its name implies, the flowers are pure white, never becoming tinted under the strongest sun. It is the freest and most persistent blooming of the whole family. We have had plants in bloom continuously for two years in 6-inch pots with an occasional top dressing of some plant food.

Lachenalia tricolor in baskets.—Those who have not previously grown this *Lachenalia* in baskets have missed one of the finest floral treats imaginable. For years I have grown them in this way, having at the present time baskets with not less than 500 bloom-spikes in each. A correspondent a short time ago in THE GARDEN referred to *Lachenalias* in baskets, and spoke of as few as half a dozen bulbs in a basket; we employ not less than 200 bulbs in one of ours. The larger the baskets in reason the better the effect produced, as long as they are not unwieldy to move about. Considering what little trouble *Lachenalias* in baskets are as compared to growing them in pots, the wonder is that more do not follow the basket



Zonal Pelargonium Niphetos. Engraved for THE GARDEN from a photograph sent by Messrs. Dobbie and Co., Rothesay.

more ways than one. Firstly, when propagated early, the growth is made under less favourable conditions and is no real gain in point of time; secondly, in striking them early there is every possibility (in private establishments at least) of the young plants being crowded together through want of room by reason of the bedding plants taking up so much space. In this way all receive similar treatment, whereas those now under notice should have as favourable a position as can be accorded them, even from the time of striking the cuttings. In striking the cuttings, it is better to insert each singly in a small pot to prevent the earliest growth from becoming drawn, as well as to avoid a check in the first potting off. A frame or pit with a moderate warmth, and the wood in an exposed position. By the end of the latter month the plants should be brought under cover into a dry house or pit where ventilation can be given as freely as possible by night as well as day. When there is the slightest suspicion of damping, or the atmosphere appears to be moisture-laden, some warmth should be applied to keep it dry and buoyant. This warmth will also assist in the development of the flower-trusses, and is really necessary to obtain the best results. A night temperature at that time of from 45° to 50° will give a good return in flowers, allowing, of course, a corresponding rise during the day. Geraniums, it should be borne in mind, do best in a dry atmosphere. They are also found to do in chalky soils out of

plan, especially where empty conservatories have to be furnished; the effect produced by these baskets is most marked when contrasted with the surrounding greenery of the creepers growing under the roof. Cool treatment agrees with *Lachenalias* much better than giving them heat; ours grow in a Peach house, from which frost is simply excluded, and they need no more warmth than that. When the foliage dies down after flowering no more water is given them until new growth again commences in September, at which time the bulbs are removed, sorted, and returned to the baskets if needful. We do not renovate ours more than once in two years.—E. M.

Lilacs in pots.—These are a feature of interest in the nurseries of Messrs. Paul and Son, Cheshunt, the neat little bushes bearing a free display of flowers. The chief variety grown is *Mme. Legrange*, the flowers produced in large clusters and of the purest white, *Alphonse Lavallée*, lilac, being a favourite variety. But the most beautiful of all, apart from the single white variety named above, is *Leon Simon*. This has excellent clusters of flowers, which are quite double, each like a little rosette, and very soft lilac in colour—a refined and pleasing shade. It is well worth forcing gently in pots for the conservatory or greenhouse at this season. Lilacs thus grown are useful in groups, as they flower freely, and the soft lilac colour is especially charming.

Allium neapolitanum in pots.—This is undoubtedly the best of the *Alliums*, and one that deserves more extended cultivation in pots, considering what a long time it can be had in flower and with little trouble. The flowers last a long time cut and placed in water, the length of the stalks rendering them most suitable for arranging in vases with other flowers. Anyone with but a cold frame may grow this *Allium* and have it in flower during the month of April. By placing five bulbs in a 3½-inch pot in any ordinary soil, plunging them in a cold frame in ashes secure from frost, no further trouble is needed beyond keeping the soil just moist. When growth is fairly on the move abundant supplies of liquid manure will be beneficial.—E. M.

Bougainvilleas at Algiers.—At this season Algiers and its neighbourhood are most brilliant with numerous spring flowers, but none, perhaps, are so attractive as the *Bougainvilleas*. These, from their bright colours, have brought the various species into special notice and favour, and so are planted in every available place where the branches can be trained to walls of houses, the plants, one mass of bright colour, reaching to the chimney-tops. There are several species grown, but some of them are too tender to stand the light frosts that sometimes visit them, so are killed to the ground, to spring up again and flower in more favourable seasons. The species most commonly grown is named *B. Warszewiczii*. This has the darkest bracts, much darker than *spectabilis*, and flowers most profusely. My object in writing these notes is to bring before the notice of your readers one old plant of the dark species that I saw growing in a bank of hard sterile soil at the foot of a large Plane tree (*Platanus orientalis*). It had grown at will amongst the branches of the Plane to a height of from 60 feet to 80 feet, and at many points had reached the extremities of the branches out of the shade of the broad leaves. Here the *Bougainvillea* received the necessary sunshine to ripen the wood, and at this season may be seen large clusters of dark bracts hanging from the leafless Plane. I gather from the above example that, all other conditions being favourable, soil is quite a secondary consideration, judging from the above example, where the roots of Plane and *Bougainvillea* were each struggling for moisture in a hard impervious soil. In our less favoured climate the *Bougainvillea* should get all the sun-heat possible to well ripen the wood, and be kept quite dry for two or three months after it has finished its growth, and at no time should it be grossly fed.—W. O., *Fota, Cork*.

Mackaya bella.—In a warm greenhouse the flowers of this pretty *Acanthad* form a very attrac-

tive feature at this season of the year, that is, when the blooms are plentifully borne, which is, however, not always the case. The most successful way of flowering it is to grow the plants freely during the summer, and give them a season of comparative rest in the autumn and winter; then as they start away with a little additional heat in the spring the flowers make their appearance. They are borne in racemes, each containing a dozen or more flowers, which are somewhat bell-shaped, nearly a couple of inches in diameter, and of a deep mauve, beautifully veined with purple. Apart from the beauty of its blossoms, a great charm possessed by this *Mackaya* is that the blooms are totally distinct from those of any plant in flower at the present time. Cuttings strike root very readily, and in the temperature of an intermediate house they grow away freely. This *Mackaya* is a native of Natal, and was introduced therefrom about twenty years ago, but even now it is little known, though a coloured plate of it was given in Vol. XVI. of *THE GARDEN*.—H. P.

HYBRID GREENHOUSE RHODODENDRONS.

THE various hybrid *Rhododendrons* that require the protection of a greenhouse may be divided into two very distinct groups. Firstly, the Javan, or tube-flowered forms, that at least in some instances are almost perpetual blooming; and secondly, the hybrids claiming parentage from various Himalayan species, that commence to flower at this season of the year, and after blooming make their growth and set their buds for the following season. The Javanese forms have had a good deal of attention directed towards them within the last year or two; therefore I will limit my remarks to the hybrids obtained from the Himalayan species. The two which have been employed to the greatest extent by the hybridist are *R. Edgeworthii* and *R. ciliatum*, the former being especially remarkable for its rugose leaves and large, highly fragrant blossoms, of a pure white tint, except a central stain of lemon; and the second for its dwarf compact habit and profusion of bloom. One of the oldest of these hybrids that I am acquainted with was obtained by the intercrossing of these two species. It is *Princess Alice*, for which Messrs. Veitch were awarded a certificate by the Royal Horticultural Society thirty-one years ago. It is in general appearance about midway between its parents, and combines the free-flowering qualities of *R. ciliatum* with the delicious fragrance of *R. Edgeworthii*. The flowers of this are white, tinged slightly on the exterior with pink. This *Rhododendron* is still one of the best, and a very popular plant at the present day. A pretty hybrid and one that has been employed in the production of several other varieties is *multiflorum*, a very characteristic name. It was obtained by crossing *R. ciliatum* with *R. virgatum*, and it is one of the hardest of its class. *R. multiflorum* forms a compact twiggy specimen that will flower profusely when not more than a few inches high. When in full bloom its neat dark green leaves are almost hidden by clusters of white blossoms. In some individuals they are more crisped at the edges than in others, while a few may be found in which the flowers are slightly tinged with pink. These little variations are to be found among all the hybrid *Rhododendrons* of this section, no doubt owing to the fact that quantities have at different times been raised, and as a matter of course they vary somewhat; whereas, with some classes of plants they are all propagated from a single individual, and consequently maintain its distinctive characteristics. Among the popular varieties originating from *R. multiflorum* may be mentioned a group raised by Mr. Davies, of Ormskirk, viz., *Countess of Derby*, *Countess of Sefton*, *Duchess of Sutherland*, *Lady Skelmersdale*, and *Mrs. James Shawe*. Their other parent was *R. Edgeworthii*, which has transmitted its fragrance to the progeny. Of the five, *Countess of Sefton* and *Duchess of Sutherland* partake more of the character of *R. Edgeworthii* than the other three. As dwarf bushes from 1 foot to 18 inches

high they flower profusely. The most delicate of the five is *Countess of Derby*, while the flowers of it are the finest of all. Other valuable varieties from the same raiser are *Pixie Queen*, a good deal in the way of *R. multiflorum*, but rather dwarfer, while the flowers are of a purer white and more crisped at the edges than in most of the *multiflorum* hybrids. *Queen of Dwarfs* is said by Mr. Davies to have been raised from *R. multiflorum* crossed with the best large-flowered hardy white varieties, whatever that may mean. At all events it is a beautiful little *Rhododendron*, as neat almost as a Box bush, every twig of which will produce a cluster of comparatively large pure white blossoms. The roundish leaves of this are very different from those of any of the others.

While the Javan hybrids are but little affected by the smoke of London (as the examples shown by Messrs. Veitch will testify), some of those raised from the Himalayan species are apt to suffer occasionally from dense fogs in the depth of winter, but none of the others to anything like the same extent as *Queen of Dwarfs*, which is often greatly injured. *Rhododendron Dalhousiae* with its loose rambling habit produces such large, showy, bell-shaped primrose-coloured blossoms, that it was a happy thought to intercross it with *R. ciliatum*, the progeny, *Countess of Haddington*, being one of the very finest of all greenhouse *Rhododendrons*. The flowers of this are tubular in shape, deeply tinged with pink on the exterior, and almost white within. After expansion the flowers become pale, and in some individuals they become nearly white. It is an old variety, having been awarded a certificate at the same time as *Princess Alice*. *R. Countess of Haddington* is a good free grower, and forms a very handsome specimen if planted out in the conservatory. *R. fragrantissimum* and *R. Sesterianum* are two free-growing varieties rather apt to run up tall unless often stopped during their earlier stages. Their blossoms, however, are really magnificent, being very large, pure white, except a yellow blotch towards the base of the upper segment, and most deliciously fragrant. The parents of these are *R. Edgeworthii* and *R. formosum*, and I should think that *Lady Alice Fitzwilliam* is of the same origin. The *Moulmein R. Veitchii* is one of the most beautiful of the entire genus, the blooms being large, of a pure waxy white, except a lemon stain in the centre, while the edges of the petals are crisped and undulated in a charming manner. True, this latter feature varies a good deal in different individuals, and in the variety *lavigatum* the edges of the petals are smooth. This is not nearly so attractive as a good form of the typical kind. *R. Veitchii* is not so pleasing in a small state as many of the others, for it is rather apt to run up somewhat thin during its earlier stages, but as a large plant it forms a handsome freely-branched bush, noticeable at all seasons by the bright glossy green of the upper surface of the leaves, which are more or less glaucous underneath. There are not many hybrid varieties claiming parentage from *R. Veitchii*, the most noteworthy being *Forsterianum* and *exoniense*. *Rhododendron Forsterianum* was raised by Mr. Otto Forster between this species and *R. Edgeworthii*, and, as would be expected from its parents, the flowers are very large. It is a grand *Rhododendron* that should be freely stopped when young. *R. exoniense* has for its second parent the little *R. ciliatum*, and consequently it is much dwarfer and more freely-branched than *R. Forsterianum*. *R. exoniense* shows at the first glance more of the character of *R. Veitchii* than of *R. ciliatum*, but ample traces of this latter are to be found in the dwarf and more compact habit, slightly hairy character of the young leaves, and in the flowers being tinged with pink on the exterior. The blooms of this are very sweet-scented. This *Rhododendron* was raised by Mr. Robert Veitch at Exeter, and has been long grown as a valuable decorative variety.

One other hybrid form which though hardy is a very valuable plant for the decoration of the greenhouse. This is *R. præcox*, one of the earliest hybrids raised by Mr. Davies, of Ormskirk, by

crossing *R. ciliatum* and *R. dahuricum*. This latter, of which two or three forms are to be met with, is a native of the colder mountainous districts of Europe and Siberia, and forms a very pretty early-blooming, hardy shrub, rather apt to get its flowers injured by late spring frosts. *R. præcox* varies a good deal in the colour of the blossoms, the deepest tinted form being known as *rubrum*, of which a coloured plate was given in THE GARDEN July 12, 1890. H. P.

Callicarpa purpurea.—For several years at the Chrysanthemum show held in the Town Hall, Birmingham, I have noted fine examples of this showy berried plant. A loose form of training being adopted, the plants presented a graceful appearance. Well grown specimens make a really good display during the middle of November.—E. M.

Darwinia tulipifera.—The Darwinias form a genus of neat-growing evergreen shrubs, all of which are natives of Australia, and consequently in this country they need the protection of a greenhouse. They belong to what is usually spoken of as New Holland plants, and will succeed well with much the same treatment as that given to the different kinds of *Epacris* and similar subjects. *D. tulipifera* forms a somewhat upright-habited bush, which will flower freely when about 18 inches high. The oblong-shaped leaves are small, firm in texture and of a deep green tint; while the flowers are borne in terminal heads on the points of all the stronger shoots. The floral arrangements are somewhat curious, for the blossoms themselves are small and inconspicuous, but each cluster is surrounded by a large involucre composed of petal-like bracts, which present the appearance of a drooping bell-shaped blossom. It is of a straw colour, striped in an irregular manner with bright crimson, and remains fresh a considerable time. A second species, *D. fuchsoides* or *Hookeriana*, is smaller growing than the preceding, but it is also a pretty flowering plant. Some years ago, when specimen plants were far more often seen than they are at the present day, *D. tulipifera* was very generally employed for the purpose. Among other features, it boasts of a multiplicity of names, for besides the three genera—*Darwinia*, *Genetyllis* and *Hedearoma*—in which this plant is placed by different authorities, it is also known by two specific names, *tulipifera* and *macrostegia*.—H. P.

Hibbertia Reidi.—The different species of *Hibbertia* vary greatly in general appearance from each other, for *H. volutalis*, a very old garden plant, is a strong growing climber, while *H. dentata* is also of scandent habit. This latter is a very desirable subject for the roof or rafters of a greenhouse, in which situation it will flower from the early days of the new year for months together. A coloured plate of this species, showing not only its golden blossoms, but also the pretty bronzy leaves, was given in THE GARDEN, July 28, 1888. *Hibbertia Reidi*, on the other hand, differs widely from either of the above, as it forms a neat twiggy little bush which, when not more than a foot high, will flower profusely. The individual flowers are about three-quarters of an inch in diameter and of a rich bright yellow colour. So numerous are they, that when at their best the plant is quite a mass of bloom. The leaves of this are small and narrow. It is one of the numerous Australian plants that Messrs. Low have taken in hand, and within the last two or three years they have frequently shown what a pretty little subject it is.—T.

Anopterus glandulosa.—The Tasmanian Laurel, as this has been called, is a decidedly ornamental and at the same time uncommon shrub, well suited for a cool greenhouse or conservatory. The oblong-shaped leaves, each from 6 inches to 8 inches in length, are leathery in texture and of a deep green tint, so that, irrespective of blossoms, it is very ornamental. The leaves are borne principally on the points of the shoots; therefore when the plant is small it has a somewhat leggy appearance, which at that time detracts from its beauty, but as a larger specimen these features disappear, and it is then a really handsome shrub. The flowers, which are borne in erect terminal

racemes, are pure white, saucer-shaped, and about three-quarters of an inch in diameter. It will flower freely in a small state as well as when it reaches a larger size. This *Anopterus* is not at all a difficult plant to cultivate, for it will be just at home if given much the same treatment as the greenhouse *Rhododendrons* of the Himalayan section. A little loam may, however, with advantage be added to the soil. Cuttings of the half-ripened shoots are by no means difficult to strike, though they often stand some time before roots are produced. Notwithstanding the fact that in general appearance this *Anopterus* suggests an affinity to *Clethra arborea* or to some members of the genus *Pieris*, it is really widely removed therefrom, being a shrubby member of the Saxifrage order.—H. P.

Cineraria cruenta is interesting as the species that has been used largely in the building up of the gay flowers of the florists' class, that give colour to many greenhouses at this season of the year. But there is no need to ignore the type, as it is a plant of much value, although very different in aspect from the *Cinerarias* so familiar to the general public. *C. cruenta* is of vigorous growth, reaching several feet in height and bearing a profusion of small flowers in large spreading corymbs, and varying in colour from pale purple to a very deep shade of the same tone. A group may be seen now coming into full bloom in the greenhouse at Kew, and the fine aspect of the plants suggests an extensive use of *C. cruenta* for this purpose. Individually the flowers are of little value, but in the mass have a bright effect.

SPRING FLOWERS AT HOLLOWAY.

THESE are grown in great numbers at Mr. Williams' nursery. Amongst the best of the *Clivias* I noted some few kinds as very fine; amongst these were *Prince of Orange*, *Model*, *Meteor*, *General Gordon*, *Baroness Schroeder*, *Ambroise Verschaffel*, *Mme. van Houtte*, and *Surprise*. The *Hippeastrums*, better known by their name of *Amaryllis*, have long been grown here, and they now are blooming in great abundance. I picked out about half-a-dozen to make a special note of; most striking were *Ophelia*, a splendid light flower, of fine shape and large size, measuring some 7½ inches across, having a creamy white ground, the centre suffused with rosy purple; *Lord Salisbury*, a large flower, and of good breadth and substance, centre of petals having a broad white stripe, rich and bright crimson-purple, becoming deeper towards the base, *Empress Frederick*, flowers large, with light centre, the colour being rich orange-scarlet, flaked with purplish crimson; *G. Wainwright*, a grand flower with bold broad petals measuring 8 inches across, the colour a rich vermilion-crimson with a white star-like central stripe; *Curiosity*, a dwarf, good kind, having large flowers with a creamy white ground, reticulated with rosy salmon, which is darker towards the base, the outer border being white; and *President Harrison* with large flowers, with a white star-like centre, the colour being light crimson. Of the numerous *Hyacinths*, the most of these are well-known kinds, and certainly the very finest white was *La Grandesse*; the next best was *L'Innocence*. A fine variety also is *Baroness van Tuyl*, having a fine long truss of numerous creamy white large pips; *Grandeur à Merveille* is a fine soft blush. Amongst bright crimsons, *Pelissier* and *Linnaeus* must be reckoned amongst the finest, although *Lina* and *L'Étincellante* appeared to have been fine, but were past their best. *Macaulay* and *Monno* were the best amongst the deep rose-coloured flowers, whilst the blues were magnificent. Amongst the dark blues may be named *Mimosa*, *Sir N. Barklay*, *Marie*, *Charles Dickens*, *Sir E. Landseer*, and *King of the Blues*, the last-named the finest of them all; and amongst blues of a lighter shade I may mention *Czar Peter*, *Captain Boyton*, *Queen of the Blues*, *Lord Derby*, *Grand Lilas*, and *Princess Mary of Cambridge* as being charming flowers. The best yellows were *Ida*, with large pips of deep yellow; *Obelisque*, with flowers of a citron-yellow; *Bird of Paradise*, fine

clear yellow; whilst *King of the Yellows* has a splendid truss of large pips, the colour a full clear yellow. This is by far the best yellow in the Holloway collection. Tulips were very gay and attractive, these forming one of the most brilliant displays. I give the names of a few of the best: *Canary Bird*, rich yellow; *Cardinal's Hat*, brilliant scarlet; *Cerise Grisdelin*, bright carmine, with a white border; *Duchesse de Parme*, rich crimson, with a marginal border of yellow; *Joost van Vondel*, bright rosy crimson, flaked white; *Ophir d'Or*, the finest yellow; *Proserpine*, rich soft rose; *Roi Pepin*, bright rosy carmine, flaked with white. These, together with *Lily of the Valley*, *Freesias*, *Callas*, and some few early *Irises*, make up a fine display. W. H. GOWER.

KITCHEN GARDEN.

VEGETABLE MARROWS ON RUBBISH HEAPS.

WITHOUT in any way committing myself to the assertion that the orthodox heap of decaying vegetable matter is the best place for growing Vegetable Marrows, I yet consider there is much to be said in favour of the time-honoured custom of either planting or sowing the seed in such positions. All have not space to grow Marrows market growers' fashion, that is to say, in the open ground with only a good spit of manure under them, but in nearly every place there is a corner given up to rubbish, and why not turn this to good account? Instead of the rubbish heap being an eyesore it may be a source of pleasure and profit if only a very little pains are taken in fitting it for the reception of the crops that I shall recommend to be grown on it. Added to this the miscellaneous material composing the heap will go on steadily decaying, or at any rate the greater portion of it will do so, especially if water or liquid manure is freely applied during the summer, and a very serviceable lot of manure, as I shall presently show, be available for a variety of other purposes.

Vegetable Marrows will not thrive in a cool shady position, and to have them in a productive state during the whole of the season a sunny sheltered site ought to be chosen for the heap, or, say, a corner in the frame ground or yard where hotbeds are made, soils stored, and such like. To this corner commence at once to wheel all old heating material, notably the leaves and manure that may have been previously used for forcing Rhubarb and Sea-kale, all fresh leaves that can be spared, sweepings from drives, paths and lawns, edgings from walks, and all kinds of vegetable refuse, stalks and weeds from the kitchen garden. It is astonishing how rapidly rubbish of all kinds accumulates, and with what there is in evidence now a very respectable heap should be got together by the first week in May. About that time all should be well mixed and shaken up together in the form of a level-topped heap not less than 30 inches deep, making it quite firm. In most instances this will hasten fermentation, so that a gentle warmth be generated, or sufficient to give either the seeds or plants a good start. Sowing the seeds where the plants are to grow is perhaps the least trouble, and this being done during the first or second week in May, the plants ought to be growing strongly early in June. Those who have the convenience will gain a few days by sowing seeds singly in 3-inch pots late in April or early in May, placing them in gentle heat to germinate, hardening off the seedlings and planting out before they become badly

root-bound. Too often the plants are raised long before they can be turned out, and the consequence is they become leggy and starved, and are slow in growth afterwards.

The one great drawback to these heaps of decaying rubbish for Vegetable Marrows is the fact of their promoting an extra strong growth of haulm at the expense of productiveness. There would, however, be fewer causes for complaint if the plants were not planted or raised so thickly at the outset. Three plants are ample for a heap 6 feet square, and for convenience these may well be grouped together. Where it is intended to sow seed or put out plants, place about a bushel of leamy compost in mounds in the centre of a small heap and, say, 6 feet apart through the centre of larger beds. This small quantity of soil is needed for the purpose of establishing the plants, but the roots will soon leave this for the more tempting food below. Having the plants well together admits of their being enclosed and protected for a time either with a small frame, handlights, or even inverted flower-pots, tubs, benders, and mats. Thus screened from late frosts and cold easterly winds a good early start is made, and it will not be long before the plants will want more liberty. Let them ramble freely in all directions, and they will soon commence bearing, continuing to do so without much further trouble till cut down by frosts. Rubbish may be added as it is collected, and wheeled against the Marrow bed till the spread of haulm renders this impossible, and though not absolutely necessary, an occasional thorough soaking with water will not be wasted on either the Marrows or the heap of rubbish.

After frosts have destroyed the Vegetable Marrows the time has arrived for overhauling the heap that has supported them. The latter should be turned, all sticks, stalks, or anything that will not readily decay, but which will burn, being forked out, stones only being discarded. Experts advise that 1 bushel each of salt and quicklime be added to every cartload of decayed and decaying rubbish, and there is not the slightest doubt this would add considerably to the manurial value of an old Marrow heap. So also would the residue of a good slow fire made up of the aforesaid insoluble rubbish and various other combustibles. All being shaken well up into a heap, there will in two or three months be a grand supply of light manure that would suit almost any crop, and in particular serve admirably for mulching or lightly forking into fruit borders. Some of the most profitable pyramid Apples and Pears in the west of England are sustained in their remarkable vigour, without prejudice to productiveness, solely by annual light surfacing of old Vegetable Marrow beds. I. M. H.

Ragged Jack Kale.—I know of nothing in the whole section of Kales to equal this for use at this season. When cooked it has not the strong taste which many of the Kales contain at this season. For years I have depended upon the old Cottager's Kale, one of the best kinds for standing the winter, but I find that the above variety is far superior to it for use in the month of March. Why it is not more generally grown is owing, I suppose, to its being one of those vegetables known as common and coarse-looking, but to all those who are sceptical on this point I would say, try it.—E. M.

Hardiness of Broccoli.—I have a fairly good patch of Broccoli, although on January 3 we had 20° of frost. I never lay over the heads to the north, nor earth up the stems in any way. I once tried protecting Broccoli with litter, but lost more plants than at any other time when nothing

at all in the way of protection was done. Mr. Wythes seems to favour late sowing for the late varieties, while I have found the reverse to be the case. My opinion is that many plants are lost through late sowing, as only a short season is allowed for the growth to become matured. All our Broccoli seed was sown this year on March 20. This may appear two months too soon for Mr. Wythes when the latest sort, The Queen, is included, but following out previous year's plans, I have no fear of the result. If I were compelled to allow the plants to remain in the seed beds to be drawn up weakly and rendered really unfit for use, I should then defer the sowing for awhile, but not having to consider this, I sow at the time named and put out the plants into their permanent quarters as soon as they are large enough. With the plan of pricking out the seedlings into nursery beds I have no sympathy, and rather look upon the method as so much wasted time. I grow the Broccoli in a field, thoroughly exposed to the east, but sheltered by some buildings from the north. The soil, I may say, is heavy and very retentive of moisture, although water does not actually lie on the surface. The more deeply the ground is dug, and the drier the weather too when this is done, the greater the success of the crop. Mr. Wythes does not name Leamington, an excellent variety, although an old one. If he does not grow it, I would advise him to do so.—E. M., *Swanmore Park, Hants.*

PLANTING POTATOES.

THE very fine dry weather which prevailed through March naturally led to unusually early planting of Potatoes of all kinds. It is perhaps old advice to say that it is always better not to be in too great a hurry to plant Potatoes, because the growth is so susceptible to harm from late frosts, but still it is good advice, especially when we have very early in the spring such tempting weather as we have recently experienced. All the same, almost certainly will come sharp frosts, up perhaps to the middle of May or later, and if out in the open the new growths get very tender and close on the ground have to endure but 3° or 4° of frost, then it would have been better for them had they not appeared above the soil. Last year in many exposed or low-lying districts Potatoes when fully 12 inches in height and earthed were very much injured by a sharp frost on the 15th of June, but that is a contingency so late and so unlikely to occur that provision against it is impossible. All the same, we are not wise in exposing our Potato tops to sharp May frosts, for these are almost certain to come, and once the plants are frosted, if even slightly, they never become later so robust as are those unharmed. Whilst it is comparatively easy to give some protection to small breadths, whether for a short time by drawing soil over the growth, by giving a covering of litter or Fern, or by fixing over some rough framework of wood on which can be laid mats or other material, large breadths must take their chance. Now, whilst it is very common to advise that late strong-growing varieties be planted first and the earlier ones latest, it is advice that is but too rarely followed. Strong-growing varieties are naturally much later in starting, and these are longer in getting through the soil than are the early sorts. Still, with these there is no gain in planting earlier than the first week in April, whilst except where, as previously stated, special protection can be given, it is quite soon enough if earlier or precocious sorts be planted at the end of April. It may be that sometimes roots make stronger growth if sets be planted early, but still roots are pushed from the base of the shoots only, and are quite dependent for their development on the robust expansion of leafage. Generally, the longer the tuber-shoots are in making their appearance through the soil—and that appearance depends very much upon the soil and the air above—the weaker they are and the more susceptible also to injury from insects or grubs. Shoots that are partially formed, stout and well hardened ere the sets are planted, and which make rapid and robust growth,

invariably in the end produce the best crops and early ones. It is not wise to advise deep planting, as that simply gives the shoots all the more work to do to reach the surface and develop leafage. Tubers are amply buried with 4 inches of soil, and that should be well pulverised and not allowed to become hard or baked. There should be ample room between the rows to allow earthing to be done freely, and, still further, ample light and air are permitted to reach the leafage and render it stout and healthy. A. D.

FLOWER GARDEN.

NOTES FROM SHEPTON MALLET.

GALANTHUS ELWESI.—Last autumn Mr. Whittall very kindly sent me roots of *G. Elwesi* collected in some half-dozen different districts. Whilst all were undoubtedly varieties of *Elwesi* they differed considerably in the style of flower, leaf, and general habit. Most of them had long narrow leaves and small flowers borne on long stems, as though they had had to force their way through some low-growing shrub. Those from one or two places were dwarf in growth, and had broad leaves and large flowers, but even amongst these would be a few with the lanky habit of growth, indicating the varying conditions under which they had grown. The very marked feature was that with one exception these collected roots flowered much earlier than any cultivated forms of *Elwesi*; in fact, they were open at the same time as the early form from Corfu. As one set of these collected roots flowered at the ordinary season, it may be hoped that the precocity of the others will be permanent. One lot of roots received from Mr. Whittall in 1891 contained some very fine varieties with handsome, broad, glaucous leaves, much like those of *G. caucasicus* and large flowers. Amongst these may be some hybrids, as three roots have given flowers with green marks on the outside petals.

OTHER NEW SNOWDROPS.—Two of Mr. Whittall's kind contributions to my collection have not flowered this spring. The first of these is a *Snowdrop* from the island of Nikaria, which was collected when in full growth, and, of course, suffered in consequence. This has most peculiar leaves, somewhat like those of a *Leucojum*. It is quite impossible to predict what kind of flower this plant will produce, but there cannot be a doubt as to its being an entirely new species. The other plant is also a *Snowdrop*, but this was found on the *Taurus* range. It has very narrow, rather long glaucous leaves, which at a little distance might very easily be mistaken for those of *Iris reticulata*. This, too, I expect will prove to be a new species.

CROCUS CREWEL.—Amongst some collected roots kindly sent to me by Mr. Whittall in 1890 I found two corms of *Crocus*, which I planted separately. This season I am delighted to find that they are the rare and beautiful *C. Crewel*. This species is a near ally of *C. biflorus*, but the almost black anthers and rich orange centre give a very distinct and attractive character to the flower.

CROCUS TAURI.—Two years ago my good friend Mr. Whittall sent me some *Crocus* corms which he thought might be a variety of *C. Sieberi*. This spring some of these roots have flowered, and on my sending a specimen to Mr. Baker, he pronounced it to be *C. Tauri*. It is quite the most lovely *Crocus* I have ever seen, and varies considerably in the shades of blue, which is its prevailing colour. The form is very perfect and the interior is white, or white delicately shaded with blue,

nicely set off with a rich orange centre. The exterior is rich dark blue. In one case the outer petals had dark blue feathers. Like most of the Crocuses, it is a worshipper of the sun, and it is only when the sun shines fully on it that the flower opens and shows its perfection of form and colouring. One plant has given me a flower with anthers that are almost black. To this Mr. Baker has given the name of *C. Tauri* var. *melanthorus*.

GALANTHUS BYZANTINUS.—Last autumn some collected Snowdrop roots were offered to the English trade as *G. Elwesi* and *G. Redoutei* from Constantinople. They did not belong to either of these species, but amongst them there was quite a new form, having distinct plicate leaves and flowers unlike *Elwesi* in shape, but with double green markings on the interior petals, very similar to those belonging to that species. From specimens sent to me and from plants growing in my own garden, I was at once convinced that this was a new species, and when Mr. Ware submitted specimens to Mr. Baker, he confirmed my opinion and named it *G. byzantinus*. As these collected roots were mostly very weak,

ERANTHIS CILICICA.—This has flowered with me for the second season, and I am pleased to be able to report favourably on it. It is at least a fortnight later than the old Winter Aconite, and when coming through the soil the stem and frill are of a rich chestnut-red colour, but this is not permanent. The flower is more globular, and I think the colour is slightly richer than in *E. hyemalis*. The seed is almost black and is much smaller than that of the old species, and the seed-leaf is only about half the size. For this I am indebted to Mr. Whittall's kindness.

FLOWERS IN GRASS.—My "Grass garden" has been very lovely this spring. I think the early flowers look better in the Grass than in any other situation, and they are better protected against the vicissitudes of storm and frost than when growing in the ordinary borders. In the autumn most of my surplus roots are planted in the Grass, and in the spring chance seedlings find the same resting place. I know of but one drawback connected with Grass gardens, and it is that the mowing cannot commence before the end of

a "battle of flowers" and Dandelions, in which I trust the weed will not come off victor.

JAY AYE.

CHIONODOXA LUCILLÆ VAR. SARDENSIS.

THE charming variety here figured was introduced by Barr and Son, of Covent Garden, in the spring of 1883, and two years later received a first-class certificate from the Royal Horticultural Society. The flowers, though more numerous, are smaller than those of any of the other *Chionodoxas*, but of a brilliant true gentian blue, and altogether distinct from those of *C. Lucillæ*. The bulbs were found close to the ruins of the ancient town of Sardis at 4000 feet to 5000 feet above sea level. It is perfectly hardy and a useful bulb for forcing.

Primula rosea, which is one of the sweetest gems we have received from the Himalayas, is in full bloom at Long Ditton. The flowers, although always bright in colour, vary considerably in shade, some very pale rose, others deepening to quite a purplish shade. This species loves moisture, and affects damp situations in its native habitats. A colony of it by the side of a stream is very charming.

Hepaticas on the Grass.—The Hepaticas, especially the blue varieties, have a beautiful effect on the Grass. We noticed a bed on the lower part of the mound near the Cumberland Gate at Kew. The Hepatica requires a good ordinary soil, a fair amount of shade and shelter, and to be planted in a mass to get a rich effect. On the rocky the various varieties of *H. triloba* are very charming grouped together, double red, rose, pink, white and so forth, the colours of the flowers being remarkably pleasing and bright. The larger-flowered *H. angulosa* is a splendid rock plant for early spring, the bold large blooms, of a clear sky-blue colour, being in rich contrast to Moss-covered stones, against which a clump may be planted. The Hepaticas are not made sufficient use of in English gardens. There is an idea that they are not very easily managed, but it is worth some trouble to get such brilliant masses of colour early in the year.

INTERMEDIATE STOCKS.

THESE are grown in large quantities for market, and find a ready sale. Yet it is not often one meets with them in private establishments. At one time it was difficult to secure a good strain, but seed which will give a large percentage of doubles may now be bought of any reliable seedsman. The colours, too, are very distinct; the crimson and white varieties I find the most useful, particularly the crimson, which is a great improvement on the old red variety. There is also a good purple variety, but this is not so serviceable. A great recommendation to these Stocks is that they come into bloom early in the spring, and may be used for beds or window boxes without fear of being damaged by cold or frost. Although hardy, it is best to grow them on through the winter in a pit, where they can be given sufficient warmth to keep out frost, as they then come into bloom much earlier than when grown in unheated pits.

To have them in bloom about the first week in April the seed should be sown early in August. The seed may be sown in a frame; a shady position is best. The seedlings should be ready for potting singly about the middle of September, by which time the sun will not be so powerful and the Stocks will stand full exposure, or they might have a slight shading for a few days should the weather be very bright. Mildew is sometimes troublesome in the autumn, but a good dusting with soot and sulphur will soon arrest its progress. After the plants are well established light and air are their chief requirements. I must not, however,



Chionodoxa Lucillæ var. *sardensis*.

it is impossible to estimate the value of this new species at present. I should not be surprised if yet another new form should be found amongst these roots, whose native habitat is at present as great a mystery as the home of the Mahatma.

SCILLA SIBIRICA ALBA.—This is a Continental variety of the well-known species which is such a general favourite. It has flowers of the purest cream-white colour, and as my solitary bulb has sent up six spikes of bloom, it promises to be a very attractive plant.

SCILLA SIBIRICA PALLIDA.—This is a very pretty variety of the lovely blue species, which is one of the greatest attractions in our spring gardens. This form has white flowers, with a pale blue stripe down the middle of each petal. Its delicate beauty should make it a favourite.

SCILLA ANTE TAURUS.—Without doubt this is a form of *S. sibirica*, which has been found by Mr. Whittall on the Ante Taurus range. It usually flowers rather earlier than the type, but is not nearly so brilliant in colour. The form of the flower is superior to that of *sibirica*, and the dark stripe down the middle of each petal sets off the pale purple ground colour to great advantage. It flowers freely and grows well.

May, and previous to that time many Dandelions ripen and distribute their seed all over the place. Amongst the plants I at present grow in the Grass I may mention:—

Snowdrops of various sorts	Anemone trifolia
<i>Leneojum vernum</i>	<i>A. blanda</i> , various colours
<i>Bulbocodium vernum</i>	<i>A. apennina</i>
<i>Iris reticulata</i> and <i>Kre-lagei</i>	<i>Scilla bifolia</i>
Crocuses of many sorts	<i>S. b. alba</i> and <i>carnea</i>
and colours	<i>S. sibirica</i>
<i>Erythronium d. c.</i> of all colours	<i>S. umbellata</i>
Winter Aconite	<i>Chionodoxa Lucillæ</i>
Early Daffodils	<i>C. sardensis</i>
<i>Anemone nemorosa</i>	<i>C. cretensis</i>
<i>A. Robinsoni</i>	<i>C. gigantea</i>
<i>A. ranunculoides</i>	Fritillaries, various
	<i>Puschkinias</i>
	<i>Muscari</i> , various

As most of the plants mentioned do well, I intend to try the yellow and citron *Corbularias*, *Narcissus juncifolius*, *N. minimus*, *N. nanus*, *Erantnis cilicica*, *Ornithogalums*, *Fumitories*, &c. I may add that no plants seem to be happier in the Grass than the *Erythroniums*, and after their flowers have faded, the leaves are quite ornamental. Besides planting roots, I scatter quantities of the spring-flowering bulb seeds on the Grass every season, and in a few years I anticipate there will be quite

omit to say that watering must be carefully attended to, for once let them get very dry in the pots and they will be crippled beyond recovery. They should be ready for potting into 5-inch pots early in January; good loam with some well rotted manure and a little soot added will suit them well. In repotting it is necessary to be careful not to break the balls, and they should be potted fairly firmly.

Provided they are not allowed to suffer from neglect, their cultural requirements are simple enough; the flowers last for a considerable time and make a bright display, their pleasant perfume being a further recommendation. F. H.

THE ROCK GARDEN.

CONSTRUCTION OF ROCKS FOR LARGER PLANTS.

FROM the hints and suggestions in the last chapter, dealing with the construction of the most select part of the rock garden, which should be almost exclusively devoted to the dwarfest and neatest mountain plants from the highest altitudes, it will be seen that the preparation of the narrow crevices recommended for these plants is not a very difficult matter, although it requires a little extra care and forethought. But there are hundreds of varieties of lovely alpine flowers in the middle and lower mountain regions which do not require this somewhat elaborate preparation. It must, therefore, not be supposed that the construction of crevices, so fully described, would be necessary in all parts of the rock garden. Plants of more robust growth or of fast-spreading habit, like *Veronica alpina*, *Acena argentea*, *Thymus lanuginosus*, *Aubrietia*, *Alysum*, *Arabis*, &c., would be out of place among the dwarf gems in the select part, which they would quickly overrun, but that is no reason why they should be banished from the rock garden altogether. We cannot dispense with their large sheets of showy blossoms or pretty foliage on that account, but we should take care to assign to them a place where they could flourish as they please without any injurious influence over other plants, and as they are of a bolder type than the smaller kinds of mountain plants, their proper place in the rock garden is among the bolder groups of rocks or borders where they might expand their flowery sheets over large stones, or carpet the ground between the tall plants forming the background. As the plan of building rocks for larger kinds of plants must necessarily be different from that described in the previous chapter, I will here give a few hints regarding the construction of these.

ROCKS FOR FAST-GROWING ALPINES.

The larger the plants the larger should be the rocks they are to adorn, and the larger these rocks are the larger should be the stones of which they are composed; such, at least, is my general rule, though not entirely without exception. While rocks for choicer alpine in the select part will naturally receive the closest inspection on account of the smallness of the principal plants used, rocks for larger plants should be of a bolder type, as they would have to be constructed more with a view to distant effect, showing massive rocks combined with plants arranged in masses where possible. The general rules given in previous notes on stability and on arranging the stones for effect must, of course, hold good in this case also, but everything needs to be on a comparatively larger scale to allow the plants the room they require. Stones showing, when fixed, a front 2 feet to 3 feet in height are not at all too large for this purpose. A rocky ledge made by fixing an irregular line of such stones, and then filling in behind them with a suitable soil to the height

of the stone, will be found an excellent place for planting, say, *Lithospermum prostratum*, *Veronica corymbosa*, *Aubrietia Leichtlini*, *Thymus lanuginosus*, or other plants whose flowers and foliage would soon carpet the face of such stones. When rocks of this kind are built with stones of the stratified class, it would be advisable to make the ledges themselves appear like strata by keeping those of the same group approximately parallel. Here, as in all cases of rock-building, the under edges of the stones should be hidden by soil to convey the idea of the rocks being continued underground. The construction of crevices, such as described in the last chapter as being required for choice alpine, will only be necessary here and there where we intend growing very dwarf plants among the larger rocks, in order to produce a certain amount of balance and harmonious blending with the select part of the rock garden, as otherwise the change from this to the bolder parts might be too abrupt, and appear like two distinct rock gardens of different style instead of a pleasing combination. That such crevices in the rougher part of the work must be carefully protected against invasion by roots of other plants has already been mentioned. The quality of the soil for filling the interior of the larger groups of rocks must, of course, depend on the nature of the plants to be used, but as a good general mixture for the main body of this work, I would recommend three parts ordinary sandy loam, one part peat, one part leaf-mould, and two parts broken stones of all sizes. For plants requiring a sunny situation more stones should be added, which naturally would cause the roots to penetrate more deeply into the soil, where they would be less exposed to drought. For the more shady parts of the rock garden a further addition of peat and leaf-mould will be found an advantage, while lime-loving plants might receive an extra supply of old mortar, chalk, or limestone chippings.

Though in these columns the building of rocks of a bolder type has been described after the construction of rocks for choice alpine, it will in many cases be found advisable to begin with the largest and boldest groups of rock and not to construct the smaller blocks in the select part until the more massive work has been completed. Especially would this be the case with rock gardens on a large scale, where the ground would be sunk to a considerable depth, including, perhaps, a cave or a waterfall. In all such cases the bolder features of the work would form a background, which would have to be at least roughly completed before the more delicate work in the select part is proceeded with.

ROCKS FOR HARDY FERNS.

Hardy Ferns, both British and exotic, possess a peculiar charm of their own, and there is no reason whatever why we should confine their use to shady corners out of the way or to the hardy fernery proper in a separate part of the garden. We have an endless variety of lovely Ferns, whose graceful fronds would form a delightful relief against the bare rocks, and whose delicate verdure would show to still greater advantage the bright flowers in our rock garden, and to associate them with these will be found an excellent means of introducing that most delightful of all charms—variety. There should be no abrupt separation between Ferns and flowers, but the change might be made a gradual one by mingling Ferns with flowers and flowers with Ferns, provided, of course, that the conditions are favourable for both. Ferns, with few exceptions, are lovers

of shade and moisture. The best position for them in the rock garden is therefore, generally speaking, at the foot of rocks with a north aspect or shaded by taller plants. The rocks themselves might with great advantage be also planted with Ferns, but the construction of such rocks must naturally be quite different from that of rocks for alpine plants. I would recommend the construction of rather wide, well-shaded rocky ledges, the interior of which should consist, not of narrow crevices, but of a soil specially adapted for Ferns, allowing the roots to spread as they please. When the stones which are to form these ledges have been fixed in such positions as may be advisable with regard to effect and stability, porous stones, brickbats, or clinkers to a thickness of 4 inches to 6 inches should be thrown in behind the larger stones for the purpose of drainage, and, after covering this with large pieces of peat to prevent the soil from mixing with the drainage, the whole space may be filled to a thickness of say 18 inches with a mixture of fibrous loam, leaf-mould, peat and sand according to the requirements of the Ferns to be used. For *Scolopendriums* a little old mortar or limestone chippings might be added. In this manner ledge after ledge might be completed till the requisite height has been attained. Here and there a ledge might be devoted to *Cyclamens* and other shade loving plants, while upright or slanting fissures between the stones will be found an excellent home for *Ramondias* and other choice plants, if only small kinds of Ferns are used near them, so as to avoid the danger of overcrowding. But all flowering plants used for mingling with Ferns must, of course, be such kinds only as have a decided preference for shade, and that the number of these is very considerable will be shown in the chapter on planting later on, when I shall also mention Ferns thriving in a sunny position.

ROCKS FOR SHRUBS.

Shrubs, as a rule, would have to be far away from the select part of the rock garden, and the best mode of dealing with them is to have a deep border filled with suitable soil from which a few stones protrude here and there, rather than building special rocks for them. It may sometimes, however, be desirable to introduce rare or particularly suitable kinds on the rocks themselves and nearer the choicer and dwarfier plants, either in groups or as single specimens. In such cases due allowance must be made for the spreading of the roots, and if these shrubs are to appear as growing out of a rock, the latter must not only be hollow and filled with large quantities of soil, but the soil must also be in direct communication with a still larger body of soil underneath, as otherwise the roots would in time force asunder the stones of which the rock is composed, or penetrate into the crevices prepared for alpine plants. The stones forming such rocks should, therefore, never be buried deeply into the soil, but be mostly on the surface, where a slight covering of their bottom edges will be found quite sufficient to convey the idea that the rocks are continued underground.

HARDY PERENNIALS AND BULBS.

However desirable bulbous plants and the taller kinds of perennials may be for the rock garden, we can hardly speak of constructing rocks for them. With very few exceptions, their proper place is not on the rocks, but in the borders intervening between groups of rock, or among and in front of the trees and shrubs which form the background; the size to which plants grow must, therefore, be our guide in their distribution. The bulbous plants include

many gems of the dwarfiest character, which are well adapted to grace a spot among the choicest alpine in the select part of the rock garden. The best place for these would be a little border, well drained and filled with light and porous soil in front of or between the groups of rock prepared for the dwarfiest kinds of mountain plants. Other bulbous plants of taller growth may advantageously be planted in the grassy banks referred to in a previous chapter, or be associated with the larger perennials, for which borders on a larger scale might be prepared farther away from the select part.

Exeter.

F. W. MEYER.

(To be continued.)

DAFFODILS AT LONG DITTON.

DAFFODILS are commencing to flower freely in the nursery of Messrs. Barr and Son, Long Ditton, and in the second week of April will, we think, be in their fullest beauty. If the weather remains hot and dry, as in the last week of March, Daffodil flowers will be small and the growth dwarf, the hot sun promoting premature expansion. We have for several years past made note of the various forms of Narcissi at Long Ditton when in bloom, and each year there is something fresh to witness, although the display preserves the same general features.

The collection is unquestionably the finest in the country, and the more popular varieties are grown in bold breadths, many long beds at this season presenting a surface of yellow. One of the finest of the earlier kinds is Santa Maria, a flower of splendid colour, deep self yellow, the perianth distinctly twisted and the trumpet of bold form. It is useful for either pots or the open ground, and deserves to be well grown. Breadths of the delightful little Tenby Daffodil, as *N. obvallaris* is popularly called, please by the neat compact shape of the flowers, exquisite to arrange with other things; and a breadth of *N. variiformis* is of great interest, the flowers showing considerable diversity in form, some, with creamy white perianth and rich yellow trumpet, differing not only in shade of colour, but also in size. Unfortunately, like the early-flowering *N. pallidus præcox*, it is not of strong constitution. A noble trumpet Daffodil in full beauty now is Ard-Righ, which makes a brave show of yellow, the flowers being large and of a fine telling shade of colour. This is well represented and displays vigorous growth—a point of great importance. Many beautiful Daffodils are, unfortunately, rather difficult to grow.

A very early trumpet Daffodil is princeps. It has clearly coloured flowers, blooms freely and is very strong in constitution. Large quantities are sent to the London markets at this season of the year. A noble trumpet Daffodil is Henry Irving, which has a conspicuously short, but broad perianth, the trumpet yellow; whilst note may also be made of the gay beds of Golden Spur, one of the finest of the early Daffodils for colour and boldness of character, and Countess of Annesley, which has a sulphur-yellow perianth and richly-coloured trumpet. *N. scoticus* is the Scotch Garland Lily and the wild Daffodil of Scotland, the flowers much like those of our familiar English wilding, but the trumpet, instead of having a plain margin, is distinctly serrated. It is not, like the majority of wild forms, a good garden Daffodil, as it is wanting in a strong constitution. The double *N. Telamonius*, Saragossa, Oporto Yellow, *N. bicolor* Camoens, *N. minor* and *N. nanus* are in full beauty; whilst such splendid Daffodils as Empress and Horsfieldi, with the countless other sections into which the Narcissus family is split up, will soon be in flower. But Daffodils, we think, will not be very fine this year. Unless gentle, warm rains occur soon, the flowers must be small and the growth stunted. *N. minor* is one of the best of the dwarf Narcissi, and eclipses *N. nanus* both in constitution and the effect of its flowers. The

former is of strong growth and blooms with great freedom, the showy yellow flowers making a mass of colour. It is a good form to plant in bold masses on the rockery, but seems lost in a large area of ground. The little *N. cyclamineus* is in full bloom in moist soil. It is moisture and partial shade that this type enjoys.

A long list of names is of little value to our readers, and the vast collection at Long Ditton must be visited to gain any idea of the wonderful form in the shape of the flowers, and the great variability in colouring from the sulphur-yellow of *N. pallidus præcox* to the rich tones of such fine kinds as *N. Horsfieldi*. Every section is represented, and not only so, but contains the most beautiful varieties, some, we must confess, appearing insufficiently distinct to receive distinctive names, but yet to the ardent enthusiast in Narcissi possessing characters peculiarly their own. In such a nursery as this the seeker after novelties will not be disappointed. One bed contained a bright little flower collected recently in Spain by Mr. Barr, and like a small form of Santa Maria; the flower is neat with similarly twisted perianth, yet distinct, and having the same rich yellow colour that makes Santa Maria so valuable as a garden flower.

A number of bulbs in flower is of interest, having been collected by Mr. Barr, we believe, on his last journey in search of Narcissi. The neat little *N. rupicola* was of note, the bulbs blooming freely and the flowers of pleasing aspect. It was found growing in the crevices of rocks or amongst stones, and is impatient of moisture—quite a gem for the rockery, but, as Daffodil growers well know, not a type to make the garden gay with colour. It is thoroughly worth growing. Flowering hard by was the charming *N. triandrus albus*, called also Angels' Tears, the flowers creamy white, varying in size, and with the perianth distinctly reflexed, like a Cyclamen in this respect. Quite as attractive is the little *N. t. concolor*, the flowers of which are small, exceedingly neat, and rich yellow—a little gem. The Corbularias are a host in themselves, and were blooming freely. The ordinary kinds are familiar, but we may note *N. tenuifolius* as worthy of mention; it made a mass of rich yellow colour, the flowers appearing early. It is a gem for pots, or to form an edging in the open.

Muscari or Grape Hyacinths.—Amongst the most interesting of hardy plants in bloom now may be named the Muscari, popularly known as Grape Hyacinths. All the finest kinds are in flower now in the Long Ditton nursery of Messrs. Barr and Son, and comprise a good list. Two very distinct varieties of *M. botryoides* are album and pallidum grandiflorum, the flowers of the former white and of the latter pale blue. The deep blue flowers of *M. neglectum* are striking, but one of the most conspicuous is *M. conicum*, which has comparatively tall spikes of flowers, produced early and with great freedom. The Muscari are charming bulbs for edging a border filled with other spring flowers or to make distinct masses of colour in the Grass, as they need no special culture, but are hardy, free, and in every way suitable for planting freely in the garden.

Tritoma (?) pumila.—In your issue of March 18 (p. 207) Mr. Wood draws attention to this plant, and asks if it is still in cultivation. As far as my experience goes, it is not now to be obtained, nor have I ever seen it alive. There should be no room for confusion between this and *Tritoma media*. Both are beautifully figured by Redouté in his "Liliacées" (figs. 161 and 186). I have doubts as to whether *Tritoma pumila* belongs strictly to the genus *Tritoma* (*Kniphofia*). Even in Redouté's time (1808) it had died out of cultivation, and he states that it is only known to him from a drawing by a Miss Basseporte in the Museum of Natural History, but that it had at one time been cultivated in the gardens of the museum, and had been introduced from Abyssinia by the traveller Bruce. Redouté classes it with *Veltheimia*. In his plate the stamens are of equal

length, only slightly exerted, and the free ends depend from between the teeth of the corolla. The stigma is markedly capitate. In *Tritoma media*, on the other hand, the stamens are unequal in length, much exerted and free; the stigma merely a point. I fancy Masson's Cape plant figured as *pumila* is some other form, and not identical with Redouté's.—A. WORSLEY.

Planting border Carnations.—I do not doubt in the least what Mr. Molyneux says regarding his border Carnations looking much healthier now through the layers not being disturbed in the autumn, but this is no criterion that spring planting is the best. Mr. Molyneux, unless I am very much mistaken, will have to admit by the time the blooming season arrives that he is very disappointed with the small quantity of flowers the plants will produce. This is just what I find with spring-planted layers which have not been detached from the parent plant throughout the winter. The soil I have to deal with is also very heavy and retentive.—A. YOUNG.

Lenten Roses as cut flowers.—In your note on Hellebores as cut flowers you mention the spring Hellebores as being well adapted for cutting when the base of the stem is split up for an inch or so, a statement I quite agree with. Iceland Poppies, when cut and placed in water for a few hours in the usual way, quickly droop; but if the base of the stems is immersed in boiling water for a few minutes, the flowers will last when again placed in water for quite two or three days.—A. YOUNG.

THE CULTIVATION OF VIOLETS.

THE great appreciation in which Violets are held induces me to give my experience on the various methods of culture practised. As Mr. Strugnell (p. 231) rightly observes, it matters little which system is practised so long as the desired end is attained. In my opinion the natural constitution of the soil is the principal element. I believe double Violets can be grown anywhere provided an open position is available for the summer growth of the plants and a cold frame at hand for flowering them in. In this garden double Violets will barely exist, let alone flourish, if planted in the ordinary soil; whether it be due to its excessive retentive nature or the presence of chalk impregnation I know not, but the fact remains. In the ordinary soil the few leaves the plants make are extremely small, very pale in colour, and eaten up with red spider. In a garden but three miles from here the plants will grow almost too luxuriantly when simply dibbled into the ordinary soil. These facts prove that even double Violets need special treatment to command success. By adapting myself to circumstances, I am enabled to produce Violets from early September until the end of March. I put out the young plants (obtained by dividing the last season's flowering roots) on the same piece of ground every year as early in May as circumstances will allow. This piece of land forms part of an east border. It was deeply trenched some five years since. Road grit and decayed vegetable refuse were freely added some five years since. Early in the autumn it is roughly dug over. In planting, a trench 6 inches deep is chopped out with a spade and filled up with decayed leaves. In this the plants are put and grow away freely during the summer. A mulching of the same material is applied should the weather be hot and dry at the end of June. I pinch off all runners until the end of August; any made afterwards are allowed to remain, these giving good blooms later on.

I know there is a difference of opinion as to the advisability of providing bottom-heat. I never give any, simply filling up the space in the frame with faggots of wood; these not only answer the purpose well, but provide excellent drainage. Instead of encouraging the plants to start into growth directly they are placed in the frame, I endeavour to avoid it by keeping the lights off until it is compulsory to put them on to ward off frost; even then, if it is not severe, I tilt them at

the back. All through the winter, directly the thermometer outside rises above freezing point the lights are drawn off. I do not think the foliage should be injured by frost, as the plants are weakened in consequence.

Marie Louise is the only sort I grow. Neapolitan seems to become single, or nearly so, so quickly after the first flowers open, that I have discarded it. When heated pits are not available for Violet culture, it is a good plan to grow some roots in ordinary cutting boxes, standing these on a shelf in the vinery or Peach house, these being available in the case of hard frost preventing the opening of the frames for several days. E. M.

Swanmore Park, Hants.

SHORT NOTES.—FLOWER.

Scilla bifolia alba is a charming bulb, and it should be more freely planted. It is far better than the white *Chionodoxa Lucina*, as it blooms as freely as the type and is of a equally robust growth.

Tulipa Korolkowi marginata is a distinct form of the type. The flowers are scarlet in the lower half, but the upper portion is rich yellow, whilst they are of neat form and distinct. It is an early Tulip worth noting by those who care for other than the ordinary and later varieties.

Chionodoxa Tmolusi, although still retained in catalogues, is a poor thing and not worth growing. It is very similar to *C. Lucina*, but with more starry flowers—certainly no recommendation. We recently noticed it praised, but this is misleading. *C. Lucina*, *C. L. gigantea* and *C. L. sardensis* are the three distinct forms.

Fritillaria pudica is a delightful bulb in bloom now at Long Ditton. It is one of the most pleasing of the family and introduced from North America in 1824. One does not see much of it, however, in gardens, but it is a beautiful species for the rockery, hardy, growing well in a warm soil and light position. The flowers are drooping, bright golden in colour and distinctly bell-shaped.

A beautiful *Erythronium* is *E. montanum*, now in bloom. It bears a pleasing flower on a stem about 5 inches in length, and it may be compared in shape to a very small form of *Lilium dalmaticum*, the colour rich yellow and the segments thrown back as in that Lily. The claret-coloured anthers are in delicate contrast to the yellow segments, the leaves not mottled, but showing that it is a fairly robust type, a gem for the rockery.

POPULAR GARDEN LILIES.

As a supplementary note to the admirable article by Mr. Douglas on the above subject (p. 207), I am induced to give my experience of some of those which are there mentioned and a few others that will be found very satisfactory Lilies to deal with. Besides the ordinary *Lilium auratum*, its variety *platyphyllum* can be confidently recommended as a very distinct form, of more robust constitution than the type. It differs from *L. auratum* itself firstly in the bulbs being composed of much larger and whiter scales, while the flower-stem is stouter, and attains a greater height; the leaves too are very much broader, while the huge blooms are quite saucer-shaped. Like the typical kind, they vary a good deal in colour, but as a rule they are not so densely spotted as in some other forms of *L. auratum*. While the imported bulbs of this last have scarcely been as good as usual this year, those of *platyphyllum* were very fine, and sent in large quantities.

THE SCARLET TURK'S-CAP LILY (*L. chalcedonicum*) is a grand species for the open border when in good condition. A soil of a loamy nature suits this best, and in common with many others of the Martagon group no great display of bloom must be looked for the first season after planting. The vermilion-coloured blossoms of this Lily are borne towards the end of July, at which time but few other Lilies are in bloom. Another of the Turk's-caps is the common *L. Martagon*, whose nodding blossoms are more remarkable for shape and symmetrical arrangement than for brightness of colouring. The blooms of this are of a dull pur-

plish tint, spotted with a deeper colour. This Lily should when established be left alone, and it will in time form quite a colony. The two varieties, *dalmaticum*, in which the blooms are almost black, and *album*, with pure white flowers, are scarce and command good prices, but they are two very beautiful Lilies well worth a little extra attention, though really they are in constitution as robust as the typical form.

L. SPECIOSUM and the confusion in the nomenclature of the different varieties of it are touched upon in the article in question with the remark that they are as often wrongly named as not, an opinion that, I think, will be generally agreed with. The names of *roseum* and *rubrum* are certainly used indiscriminately, and *album* is applied sometimes to the Dutch form and at others to the Japanese *Kratzeri*. We used to get all our imported bulbs of *L. speciosum* (or *lanceifolium*, as it was then called) from Holland, but of late years immense numbers are sent here from Japan. Most of those disposed of under the name of *rubrum* are in colour greatly superior to the Dutch ones, while exceptionally rich-tinted flowers crop up amongst them. The *album* from Holland, with its pure white flowers, tinged on the exterior with chocolate, is very different from the Japanese *Kratzeri*, whose symmetrically-shaped blooms are altogether without the brown tint, but inside a greenish stripe extends about half-way down the centre of each petal. As we wish our plants of *L. speciosum* to bloom as late in the season as possible, they are not taken under glass till the earlier blossoms are on the point of expanding. The bulbs are potted during the winter and then covered with some cocoa-nut refuse just to keep off the frost, but this is removed in March, and the plants complete the whole of their growth in the open air. Of course, they must be regularly supplied with water, and occasionally, but not often, aphides will effect a lodgment on the young leaves. If so, they can be readily got rid of by syringing with any of the numerous insecticides, or a heavy rain will frequently clear them from the plants. As the pots get full of roots, an occasional watering with weak liquid manure will be of great benefit. As the buds are ready to expand the plants are taken under glass, but by the latter part of August all should be protected in this way whether on the point of opening or not, as the colder nights and heavy dews experienced at that season cause the leaves to quickly turn yellow, and the beauty of the plant is thereby lost. Of the different forms of

L. LONGIFLORUM, those which succeed best in the open border are the imported ones from Japan, most of which produce large massive flowers. *L. Hansonii*, which is especially alluded to in the above-mentioned article, seems to be of a very good constitution and thoroughly hardy, though it is one of the very first to put in an appearance above ground in the early spring. One of the finest of all border Lilies is undoubtedly the old orange Lily,

L. CROCEUM, which in a well-drained loamy soil will become thoroughly established and produce its upright, rich orange-coloured flowers in great profusion. It is one of the cheapest of all and one that may be depended upon to give satisfaction.

L. UMBELLATUM OR *DAVURICUM* is represented in our gardens by various forms, all of which produce large heads of upright blossoms, varying in colour from light orange-red to deep brownish red. They are at their best about the end of May, and at that time form a very showy feature in the open border.

L. TESTACEUM is a very great favourite of mine, and possesses the merit of being in colour totally distinct from anything else. It is a tall, stately species with bright nankeen-coloured flowers. Both this and *L. davuricum* can be flowered well in pots, but it is in the open border that they are seen at their best. In a deep loam

THE COLCHIC LILY (*L. Szovitzianum*) will, after being established a season or two, prove very satisfactory. Of the different Lilies with curious rhizomatous roots,

L. PARDALINUM in its different forms is the most robust. No rule can be laid down for the culture of this Lily except actual trial, for I have seen it succeed equally well in a light compost, consisting principally of decayed vegetable matter, and in a stiff loam approaching to clay. The stately

L. BROWNII, with its long-tubed flowers, ivory white within and tinged with chocolate on the exterior, is a very fine Lily for pot culture.

Lilies in general are often looked upon as rather erratic in their behaviour, and in the case of some this certainly holds true; but many failures are undoubtedly owing to the treatment received. A great mistake is often made in planting Lilies too late in the season; thus, transplanting of the *Madonna* Lily should be carried out by the latter part of August, and in most of them the roots will be quite active by the end of the year. As the best bulbs of some of the imported kinds do not reach here till nearly Christmas, it is as well if purchasing bulbs to wait till then, but not long afterwards. It is a fact that many persons, if they intend purchasing Lilies, do not do so till spring; consequently, if the bulbs have up to that time been kept dry, they are very much shrivelled and have lost a good deal of their vitality, while if placed under conditions favourable to growth, both roots and tops are active, and they therefore suffer very much. Some kinds are more affected by this removal than others, one that feels it least of all being *L. umbellatum*, which I have seen flower well after removal, though at the time it was done the young shoots were a couple of inches long.

H. P.

GARDEN FLORA.

PLATE 904.

TUFTED PANSIES.

(WITH A COLOURED PLATE OF SYLVIA AND BESSIE CLARK.*)

THIS particular race of Pansies is fast becoming popular. The name is a happy one and truly descriptive of the habit of the race, especially when compared with that of other races or types of the same family. We should do all we possibly can to popularise these lovely forms, such as those here illustrated and the many besides, for they come within the means and possibilities of all flower lovers and the simple tufts in the cottage gardens are as beautiful as the groups and spreading masses planted by those that have more space at command. The Pansy is a very old garden flower, but those who fancied it of old paid most attention to the bizarre or vari-coloured types. The self-coloured tufted race is quite a recent acquisition, and popular favour has been meted out to it, and continues to grow altogether in excess of that ever before accorded to Pansies. This is the truest testimony of its actual worth. Of the kinds here figured, Bessie Clark is the elder of the two and belongs to the original family of tufted kinds. I allude to this fact because, since the advent of Dr. Stuart's *Violetta*, this kind has produced a race in which the tufted habit is so marked, as to make hitherto groundless objections to the term appear absurd. Bessie Clark, however, though one of the early kinds, merits the prominence here given it. Its habit is close and dwarf, it is very free blooming, and the flowers are of a soft mauve colour. Sylvia, on the other hand, is quite new. No doubt all who care for these flowers have already obtained and grown Dr. Stuart's *Violetta*, which was figured in THE

* Drawn for THE GARDEN by Gertrude Hamilton at Gravetye Manor. Lithographed and printed by Guillaume Severeyns.



GARDEN of December 19, 1891. Sylvia is of this parentage, and the best of an increasing family, pure and spotless in colour, and, like *Violetta*, sweetly scented. It is needless to say more in favour of these two kinds, and as regards the whole race, the details of culture have frequently been given in the pages of THE GAR-



Viola cornuta, a tufted wild Violet. One of the parents of the tufted Pansies, spreading freely at root.

DEN, whilst the whole routine of their cultivation is exceedingly simple.

The season of these flowers is close upon us, for they are at their best in April and May. It is a great gain, however, to know that we can prolong their season and enjoy their flowers through the hot days of summer and far into the autumn. I do not think, however, at least in the south of England, that the flowers are ever quite so fine or produced so freely as when the plants are put out in autumn and allowed to come in their natural season. Good culture has done much to show how successful they may be in the summer garden, but apart from this they are true flowers of spring, and at this season will make delightful pictures in all gardens. On the hotter, lighter soils they go down quickly before the summer sun, but on colder, wetter soils and in shaded situations even the spring plantations will go on flowering through the summer and autumn,



The tufted Rockfoil (*Saxifraga cespitosa*); tufts and spreads over the hills too.

especially if they are top-dressed with some rich food when the first and most exhaustive display of spring is on the wane. Although there may be many ways of doing them, there is none better than to put in cuttings during the month of July in a moist shaded spot, selecting the young and often rooted shoots for the purpose. These make admirable plants

for putting out in October, than which there is no better month, and by making an annual plantation at that time, a great display in spring invariably follows, for the hardest winters, so far as my experience goes, do not affect these strong young plants put out in autumn. I have found these Pansies very charming for table decoration and much admired when used for that purpose. Whenever cut and for whatever purpose, however, the shoot should be cut with the flower. It does not injure the plant; in fact, contributes to a succession of bloom, whilst it enables the flowers to be arranged in a pretty and perfectly natural way. For table decoration wide, but shallow receptacles were used, and the objection to such being difficult to move without spilling the water was easily and effectually overcome by using wet sand, in which the flowers would always last for at least three days, and in the case of some kinds a week.—A. H.

— Apropos of the notes quoted a few weeks ago on this subject, it may be worth while introducing two little cuts which refer to the plants in question and which show the tufted habit, which, while compact, also belongs to plants that spread rapidly. These little plants are typical of many alpine rock plants which, while low and cushion-like and tufted in habit, have also the power of spreading enough to cover the mountains if the conditions they like are only in their way. It is this habit of the tufted Pansy, spreading at the root instead of dying off in the way the annual and commoner Pansies do, that justifies the name tufted Pansy.

THE WEEK'S WORK.

FRUIT HOUSES.

FRUITING PINES.—Very rarely do we get so much sunshine during March as this season, and the nights being clear and cold, there has been some difficulty in keeping down high temperatures without recourse to extra free ventilation during the daytime, owing to the heat in the hot-water pipes. With the pipes hot and a fierce sunshine it is scarcely possible to prevent the atmosphere becoming too arid for swelling fruit, and this, therefore, should be guarded against as much as possible. Keep the fires low on the mornings of clear days and commence to ventilate before the temperature exceeds 75°, thereby avoiding the necessity of admitting a sudden rush of cold air, or such as frequently takes place when the houses are opened later in the day. Close early enough to run up the heat to 90°, at the same time gently spraying the plants overhead, and freely syringing the walls, beds, and floors. During dull weather avoid overhead syringing and maintain less moisture in the atmosphere, or otherwise the crowns will attain to a disproportionate size. The bottom-heat ought still to be kept at about 90°, and the night temperature from 70° to 75°, the higher figure being reached on mild nights only, and if with the assistance of blinds run over the roof late in the evening, so much the better. Avoid saturating the plants at the roots, but, on the other hand, see that they never get too dry. While the fruits are swelling give weak guano water varied with diluted farmyard drainage, and always at a temperature of about 90°. Fruits that are colouring will be improved in quality by giving less water at the roots than formerly, though the plants at this time of year should not become excessively dry at the roots. Remove all gills that form at the base of the fruit, and carefully reduce the suckers to two on each plant.

SUCCESSIONAL AND YOUNG PINES.—Supposing another batch is started now to afford a succession of ripe fruit in the summer, these should have a bottom-heat of from 85° to 90°, taking care not to exceed the latter figure. With strong sun-heat,

fresh hotbed material is apt to suddenly heat fiercely, and a close look-out must be kept, the pots being loosened, that is to say worked to and fro, with a view to allowing more of the bottom-heat to escape. When the plants show signs of fruiting, examine them at the roots and give a good soaking of water if found dry. Those that are more disposed to grow than to fruit should be kept on the dry side at the roots till they do fruit. Young plants placed in their fruiting pots last month must not be kept dry at the roots, this or any other sudden check, and also undue excitement, causing them to fruit prematurely. Examine the soil to a good depth, and where needed give enough water to thoroughly moisten it; subsequently water very carefully, as it is very easy to sour some soils and to render them unfit for Pine roots. These young plants ought to be thinly plunged in a fairly brisk bottom-heat, say from 75° to 80°, the house temperatures ranging from 60° to 65° by night to 70° and 75° with sunshine and air. Syringe very lightly overhead when closing the house early on clear days. Those that were not sufficiently well rooted to place in their fruiting pots early in March ought to have these given them now.

BANANAS.—Fully grown plants of *Musa Cavendishi* or any with stout stems about 20 inches in circumference at the base, and which were rested somewhat during the winter, ought soon to be showing fruit. Only a little excitement will have been necessary to bring about this desirable end, and that ought to have been forthcoming in the shape of extra high temperatures during the bright sunny days of March. If the plants are kept in rather low or ordinary stove temperatures the chances are they will not show fruit till nearer midsummer, the bottom heat and high temperatures usually afforded fruiting Pines also suiting fruiting Bananas admirably. Until they do throw up a cluster of fruit keep the plants rather dry at the roots, but once they are seen to be fruiting remove some of the loose or unoccupied surface soil in the large pots, tubs, or small pits as the case may be, give a thorough soaking of liquid manure, and then top-dress with a mixture of turfy loam and good flaky manure. It is scarcely possible to overfeed these plants, the great hungry roots revelling in rich food and plenty of moisture.

SUCCESSIONAL BANANAS.—It is possible to start early in the year with strong well-rooted suckers and to fruit these in the autumn, the pods or "fingers" ripening in November and December, but this cannot be done in ordinary plant stoves. In most cases it is advisable to prepare plants one season to fruit the next. Extra strong suckers, or those that have been left long enough connected with the parent plant to develop two or more strong leaves, are the best to start with, and being strongly rooted, there is nothing to prevent their being put direct into their fruiting quarters. They succeed well in either the largest pots, tubs, or brick pits 2 feet square. Any rough, rich compost will grow them, half-inch bones being freely added. Prior to use, well warm this through, which can best be done by placing three or four heated bricks in the centre of the heap. Give plenty of coarse drainage, pot or plant moderately firmly, and guard against souring the compost by over-watering at the outset. Small suckers should be placed in 9-inch or rather larger pots, and be given a shift before they become much root-bound. As far as shading, over-head syringing and temperatures are concerned, what suits the majority of fine-foliaged stove plants will also suit these Musas.

STRAWBERRIES.—High shelves in vineries and other fruit houses are not the most desirable positions for pot Strawberries in hot weather, as in such places it is scarcely possible to keep them either properly watered or free of red spider. Standing them in saucers or troughs kept full of water is a poor way out of the difficulty. This certainly saves the watering-pot considerably, but at the expense of the quality of the fruit, that gathered from plants standing in water being invariably extremely sour. Instead of these high

shelves where the pots are much exposed to the full sunshine, more convenient shelves, front and raised stages, and temporary platforms are greatly to be preferred. They will, even in such less exposed positions, require to be gone over both in the mornings and afternoons of clear days and watered freely where at all dry, and be also well syringed till the fruit is nearly ripe. A bed of fresh Moss is far preferable to standing the pots either in troughs or on turves, especially if it is kept green and growing. Thin out the newly-set fruit early and freely if good sized samples are required, and use liquid manure constantly.

PRACTICAL.

THE KITCHEN GARDEN.

MAIN-CROP CARROTS.—A warm and sandy soil is the best for Carrots, but as it is only in isolated instances that such natural advantages are to be had, the grower has to adapt himself to circumstances and improve the soil as best he can. In some gardens, however, it is with difficulty that a clean and even sample can be secured on account of the ravages of the grub, which on some soils is very prevalent. On other soils, again, even if not devastated by the grub, good Carrots cannot be grown. This generally happens in those old gardens which are over-rich in humus. In these cases a dressing of fresh-slaked lime pointed into the soil previous to sowing would mend matters considerably. Where the grub is prevalent drastic measures should already have been taken, to be followed up now by working into the surface a good dressing of burned garden refuse, also soot and salt, the latter at the rate of about an ounce to the square yard. Recently manured soil is not suitable for Carrots, this causing the roots to become forked. Any time from now up till the middle of the month is a suitable time for sowing, the latter date on cold soils. After adding the correctives mentioned, the surface should be evenly trodden over, a fairly firm seed-bed being very desirable. As regards the best kinds for sowing, the Intermediate and the Stump rooted are the best. The Altringham and Long Surrey are only adapted for deep and fertile soils. The drills should be drawn out a foot apart, but an extra 3 inches would be an advantage if the space could be spared. The seeds should be sown thinly, thick sowing of Carrots being a decided evil, as during the process of thinning those left behind are sure to be more or less injured. If the soil should be at all lumpy, a little finer soil scattered along the drills will ensure more regular germination.

PARSLEY.—On those soils where it is with difficulty that it will succeed, from the persistent habit it has of dying away through the ravages of grub, which is most prevalent on light soils, soot, burned refuse and even old lime rubbish are good correctives. A little superphosphate, also kainit, should also be tried, as it is very disappointing to be without a supply of Parsley, the more so when, perhaps, only a little distance away it will succeed without the least trouble. The soil having been got into a fit state both as regards its fertility, &c., the surface should be equally trodden over, as a firm root-run is what this crop delights in. Some people, when thinning out the plants, transplant the thinnings for succession crops. It may be necessary to add that the site should be well exposed to both sunshine and direct light.

PROTECTING ASPARAGUS FROM FROST. The sunny days which we are now having, although the nights are cold, will certainly take due effect upon the coldest soils, and if warm rains should follow, Asparagus will, no doubt, be considerably earlier than usual. This being the case, and as soon as the heads show through and there is the likelihood of frost, a little clean litter laid lightly over the points will save them. In those cases where a length of blanched stem is desirable, this is best secured by placing a mound of leaf soil and sand over each crown. This is much to be preferred to heaping soil over the tops of the beds. In cutting, cut all that appears, large and small, the larger

being sorted out for cooking and the smaller for Asparagus soup. It does not benefit the crowns to leave the smaller growths, as these prevent stronger ones from pushing up. If any crowns are known to be weak, do not cut them at all and mark with a stick. In cutting Asparagus, it is much better to clear the heads off as they rise and when cutting is over to let the plants rise together, except in isolated cases with weak crowns, and with which it is much better to forego cutting for a season. Hard cutting, having the crowns too deep, and also inadequate feeding are certainly much against the free progress of Asparagus.

FERTILISERS FOR ASPARAGUS.—Just as fresh growth is commencing a little artificial fertiliser will be of benefit. Salt in itself is good, even on heavy land, whatever some people may say to the contrary, but I like to supplement it with other commodities. Soot, salt, Peruvian guano in equal quantities, and sown lightly over the surface at intervals of ten days or a fortnight, will be found a great aid to free growth. Fish-potash guano is also excellent.

BROAD BEANS.—The early sowings of the Long-pod section should now be followed up by a successional one of Green Windsor or some other approved type. Select a strong soil, as it is on this that Beans thrive the best. Sow the seeds in double rows alternately 6 inches asunder, the rows also being quite 3 feet or 4 feet apart.

A. YOUNG.

ORCHIDS.

The month of March is noted for the changes which take place in the weather even in one day. April is often as cold as March and quite as changeable, and during this month the cultivator is probably more anxious than at any other season of the year. The sun is more powerful than it is in March, and it may be necessary to open the ventilators well in order to admit enough air, and the blinds are let down to prevent the leaves of many Orchids from being scalded. By and by it becomes cloudy, and the blinds have to be rolled up again. There may be too much of this rolling up and letting down of blinds, and the man who has had much experience in the work knows exactly what is wanted, and will rather put on less ventilation than spend the best part of the day leaving his work to roll up and let down blinds. There is no need to alter them for very trifling changes; a black-looking cloud may obscure the sun, and things look as if sunlight was gone for the day, but in ten minutes or so it shines out brightly again. Under such conditions of the weather there is no alternative but to ventilate cautiously and leave the blinds down, for there is much danger of the leaves being scalded in bursts of sunshine if the plants are exposed. Some years ago I had a fine large specimen of *Cattleya labiata* Warneri badly injured by scalding in the spring owing to rather free exposure to the sun in a day of rapid changes. The leaves bore the marks for several years. Another thing: in these cold April days and colder nights, when frost may set in all too suddenly, we must look after the management of the heating apparatus. The houses may run up easily by sunshine when they are shut up in the afternoon to 15° or so above the minimum temperature with a keen frost wind blowing, and to prevent a sudden drop when the sun sinks to rest, a sharp fire may be put on, banking it well up at ten o'clock. The outside temperature is generally lowest at sunrise, and here the mistake is often made if the houses are low of filling the furnaces, oblivious of the fact that it takes longer to heat the pipes when much fuel is put in than if a much smaller quantity is used. The right way to do if the fire is well burned down is to rake out any clinkers that have gathered round the bars, draw the embers together, put a small quantity of fuel over them, draw out the damper, shut the furnace door, and open the ash-pit door. The stoker has full control over a small fire, and if the sun breaks out brightly and continues so, it is easy to bank up the fire and keep it down: on the other hand, a large fire cannot be

controlled in any way except by drawing out the glowing fuel.

There is plenty of work to do now in the houses. Some plants need repotting; any needing to be done in the cool house should be seen to this month. I do not think that it matters a great deal as to the state of growth the plants are in when repotting such things as *Odontoglossum crispum*, *O. Pescatorei*, *O. triumphans*, *O. hystrix*, and others, but if a choice can be made, it is better to do so when the plants have started to grow a little. If a plant has become exhausted by flowering to that extent that the pseudo-bulbs are shrunk, it is better to leave them so until they have plumped up again. When a plant is in an exhausted state, it should be allowed to recover before the roots are disturbed. *Ada aurantiaca* has flowered well, and would have now been in capital condition had it not been necessary to cut the flower-spikes for house decoration. It is all very well to have the flower-spikes of any Orchids a long time upon the plants, but this luxury is obtained at the expense of vigour. The *Ada* is a free-growing plant when it takes well to the cultural conditions, and is excellent for exhibition owing to its distinct colour. Give plenty of water when the plants are in growth. The *Masdevallias* of the *M. Harryana*, *M. Veitchiana*, and *M. ignea* types are now throwing up their flowers freely or are in bloom, and should also be freely watered. The surface should be covered nearly over with growing Sphagnum, and the peat used should be of good quality. The roots run amongst the peat and broken pots mixed with it when the Sphagnum Moss has nearly covered the surface, but they do not thrive so well when the Moss is allowed to take full possession. A plant we value greatly in the cool house is a good variety of *Maxillaria venusta grandiflora*. It grows with the greatest freedom, forming immense masses in a very short period. The sepals and petals are pure white and of good form, the flowers being very delicately scented. For cutting I prefer them to those of *Lycaste Skinneri alba*. The *Maxillaria* blooms all through the winter; we get plenty of flowers from the large plants. It is astonishing what an immense number of bulbs are formed during the growing season; they become quite crowded, and the plants have to be divided. Now is a good time to see to the repotting of them. I find they do better in a compost of good fibrous loam and peat with Sphagnum added than in loam alone, or in peat by itself. We are apt to think that peat is the right thing for almost all Orchids, but in many cases, and this is one of them, we get better quality by using loam. I place the plants of it at the coolest end of the house. *Oncidium macranthum* succeeds admirably under the same cool and moist conditions. The distinct *Odontoglossum Edwardi* thrives admirably under the same conditions and is very regular in its time of flowering, needing a fair supply of water all the year round. Repot the plants as soon as they start to grow after flowering. In cold weather the cool house should have a temperature of 45° at the lowest, but it is better to keep it up to 50° as a minimum, with a rise of 5° or 10° by day. The *Cattleya* house has fallen below 55° on very cold nights, but it is better not to allow it below this point. The day temperature is as high as 80° by sun-heat. The warmest house has also fallen below 65°, but it generally ranges between that and 70° as a minimum. We keep the temperature up to 75° by day without sun-heat, 85° with the sun.

J. DOUGLAS.

PLANT HOUSES.

PLANTS IN COLD FRAMES AND PITS.—Every nook and corner will now be needed for one kind of plant and another; in order, therefore, to make more room a fair number of plants can safely be stood out of doors in favourable positions.

The *CHIMNEY CAMPANULA* (*C. pyramidalis*) is an instance of this—in fact in any case I would prefer to let the plants now be fully exposed, considering that in some places they are safely wintered outside, although I would personally pre-

fer not to run the risk. Where this useful old-fashioned flower was not potted at the latter end of last season, another shift will now be needful for plants of both stages (those that will flower this year and those being grown on for the next). Last autumn I potted some that were extra vigorous into 12-inch pots and others have now followed suit, but the former will no doubt flower the best, and I suspect with more branching spikes. It is possible to shift them into even larger pots with success, but taken all in all I think 12-inch pots quite large enough for the greenhouse. The younger plants from last year's seed sowing have been wintered in 4½-inch pots; these will now take 6-inch and 8-inch according to their vigour, with another shift later on where necessary. The soil I use is nearly all good loam, with a little leaf-mould and a few handfuls of bone meal; failing this latter ingredient, some lime rubble would be an assistance. Firm potting is always practised; it gives the best results in every way. Seeds should now be sown if not already done, a cool position in a pit or frame being the best place. Where the plants do not flower the second season after the sowing of the seed, they always make extra fine plants the next year.

STOCKS, &C.—Where the Intermediates or Bromptons have been up to now in cold frames there will be no further necessity to give protection, unless it be to hasten any into flower in pots for the conservatory. The forwardest and most promising of those stood outside will possibly now need a shift for the same purpose later on; for this work the Intermediates are most useful. Spring-sown Ten-weeks now fit for potting three plants in a pot should have attention before they draw up weak and leggy; 4½-inch pots are large enough, no further shift being needed. These should be watered very carefully until fresh root-action has fairly set in; even then watering must not be overdone. In the case of autumn-sown Intermediates, I have only watered twice or thrice since last October. Too much water for Stocks is simply ruinous, save when quite pot-bound. The weaker of the Intermediates and all the Bromptons may now be planted out of doors to save any further trouble. This latter suggestion should also be followed in nearly every instance now where plants for the open borders have for greater safety been wintered in cold pits; this will save attention in the way of watering, itself of no small importance.

MIGNONETTE.—Where this indispensable plant has been through the winter in cool pits, more attention will now be required in the way of watering; if kept at all on the dry side the results will soon be apparent in sickly-looking foliage. Plants that are now showing flower should have assistance by means of some manurial stimulant two or three times a week. I have never found anything to give better results than Peruvian guano. It is hardly advisable to stand these forward plants out of doors if it can be avoided, but later ones can be so treated if the room is really needed. Spring-sown stock should most decidedly be retained under cover, the best place being upon an ash bed and near the glass in a cold frame. Where the early sowing has not proved so satisfactory as one would desire, another should be made at once, whilst in any case if there be a surplus stock of plants, they may with advantage be turned out of pots for early cutting.

LILIUMS.—Where these have been wintered in cold pits and fresh growth is now commencing, the plants should be gone through for potting or top-dressing according to their needs. In our case we have just potted a number of plants freshly imported last spring and then potted singly into 6-inch pots, now into one size larger. The roots of these were not in any case disturbed, being active and vigorous, having retained their vitality all the winter, new growth now just commencing. These are now stood out of doors under a north wall, being intended for late autumn flowering; the sorts are varieties of *L. lancifolium*. The same treatment will, however, do for *L. auratum* as to potting, but I would not in this case give them such a cool position afterwards.

Newly-imported bulbs of either these or any other sort that have been potted up this spring should not be ventured outside yet for fear of any excess of moisture whilst there are but few roots. If they must be stood outside, it will be better to mound over the pots some cocoa fibre or other material to save watering as well as to throw wet off during heavy rains.

CHRYSANTHEMUMS.—These will still occupy a goodly amount of space in pits and frames, but if hard pushed for want of room I would not hesitate to stand them outside entirely in a week's time, providing a night protection by means of mats and stakes. It is far better to do this than to grow them crowded together under glass to their complete disadvantage. In any case all possible ventilation should be given them, for the hardier they are kept the better will be the after results. Potting should not be deferred for the excuse of want of room; rather than do this I would, as afore suggested, stand them outside once and for all. Late-struck cuttings will be all the better for having protection a little longer, but growth should not in this case be hastened by keeping them at all close.

JAMES HUDSON.

TREES AND SHRUBS.

JAPANESE HOLLIES.

JAPAN and Eastern North America are equally rich in species of Holly, there being thirteen or fourteen in each of the two regions. In Japan, however, Hollies grow to a larger size than they do in North America, there being eight or nine trees in this genus in the Mikado's empire, and only four in the United States; and some of the Japanese Hollies are much larger and far more beautiful than any of our species. The most beautiful of them all is certainly the southern

Ilex latifolia, an evergreen tree now occasionally seen in the gardens of Southern Europe, where it was first carried more than fifty years ago. Although a native of Southern Japan, *Ilex latifolia* appears perfectly at home in Tokio, where it is often seen in large gardens and temple grounds, and where it occasionally makes a tree 50 feet to 60 feet in height, with a straight tall trunk covered with the pale smooth bark which is found on those of most plants of this genus. The leaves are sometimes 6 inches long and 3 inches or 4 inches broad, and are very thick, dark green, and exceedingly lustrous. The large scarlet fruit of this tree, which does not ripen until the late autumn or early winter months, and which is produced in the greatest profusion, remains on the branches until the beginning of the following summer. *Ilex latifolia* is probably the handsomest broad-leaved evergreen tree that grows in the forests of Japan, not only on account of its brilliant abundant fruit, but also on account of the size and character of its foliage. It may be expected to prove hardy in Washington, and will certainly flourish in the Southern Atlantic and Gulf States.

Ilex integra is also a beautiful and distinctly desirable ornamental tree, often cultivated in the temple gardens of Japan, where it frequently reaches a height of 30 feet or 40 feet. The leaves are 3 inches or 4 inches long, and apparently quite entire. The fruit, which is rather long-stalked, is nearly half an inch in diameter, and very showy during the winter. A variety of this species (var. *leucoclada*, Maxm.), a shrub 2 feet to 3 feet high, with narrower leaves and smaller fruit, is a northern form, growing as far north as Southern Yezo. On Mount Hakkoda, near Aomori, I found this plant in full flower and with ripe fruit on the 2nd of October, and secured a supply of the

seeds, so that its hardiness can be tested in the Northern States. It must be remembered, however, that, although this plant and several other broad-leaved evergreen shrubs, including two or three species of Holly, grow in Japan in a higher latitude than Massachusetts, they are protected, as Maximowicz has already pointed out, during the winter by an undisturbed covering of snow, and are not exposed, therefore, to the changes of climate which endanger the existence of many plants in Eastern America. In Japan, moreover, plants do not suffer from the summer and winter droughts, which often sap their vitality in the United States, and which are often more directly responsible for the apparent want of hardiness of many plants than intense winter cold. A third Japanese evergreen species,

Ilex rotunda, is also occasionally cultivated by the Japanese, although I only saw two or three specimens of it; these were handsome trees, 30 feet to 40 feet in height, with well-formed trunks 12 inches to 13 inches in diameter. The leaves of this tree are very dark green and lustrous, although neither thick nor very coriaceous. The fruit is smaller than that of the two species already mentioned.

Ilex pedunculosa is exceedingly common on the Nagasendo, the great central mountain road of Japan, in the valley of the Kisogawa. This plant is sometimes a shrub 2 feet or 3 feet in height, and is sometimes 20 feet or 30 feet high, when it is a well-formed tree, with a narrow, round-topped head. The stems of the flower-clusters, from which is derived its specific name and which are longer than the leaves, give this plant its greatest charm, for they hold the large bright red fruit, which is solitary, or arranged in clusters of three or four, well outside the leaves, giving to the plants a peculiar and beautiful appearance in the autumn. Occasionally a tree of this species was seen in the garden of an inn on the Nagasendo, but it is evidently little known or cultivated in Japan, and apparently has not been introduced into western gardens. *Ilex pedunculosa* will certainly flourish in Western and Southern Europe, and I am not without hope that it will survive and possibly thrive in the Northern United States, as in Japan it is found at high elevations in a region of excessive winter cold.

Ilex crenata is the most widely distributed and the most abundant of the Japanese Hollies with persistent leaves; this plant is abundant in Hokkaido, on the foothills of Mount Hakkoda, and on the sandy barrens near Gifu, on the Tokaido; and I found it in nearly every part of the empire which I visited. It is usually a low, much-branched rigid shrub, 3 feet or 4 feet high, but in cultivation it not infrequently rises to the height of 20 feet and assumes the habit of a tree not unlike the Box in general appearance. The leaves, which are light green and very lustrous, vary considerably in size and shape, although they are rarely more than an inch long. The black fruit is produced in great profusion and in the autumn adds materially to the beauty of the plant. This is the most popular of all the Hollies with the Japanese. Varieties with variegated leaves are common and apparently much esteemed. *Ilex crenata* and several of its varieties, with variegated foliage, were introduced into western gardens many years ago and are occasionally cultivated, although the value of this plant as an undershrub appears to be hardly known or appreciated outside of Japan. Of the broad-leaved Japanese evergreens I have the most hope of success with *Ilex crenata* in this climate, and if it proves really hardy it will be a most useful addition to our shrubberies.

Ilex Suderoki, another evergreen species quite unknown, I believe, in gardens, may be expected to thrive in Europe, and possibly in the Northern United States, as it is an inhabitant of Southern Yezo and Northern Hondo, where on Mount Hakkoda I found it in fruit, and was able to secure a supply of the seeds. It is a spreading bush 5 feet or 6 feet high, and bears bright scarlet long-stalked solitary fruit half an inch in diameter. *Ilex Suderoki* is an unusually handsome plant in the autumn and of considerable promise. Of the section of the genus with deciduous leaves (*Prinos*), represented in Eastern North America by the familiar Black Alder, *Ilex verticillata* of our northern swamps, and by the arborescent *Ilex Monticola* of the Alleghany Mountains, there are several species in Japan. The largest of these,

Ilex macropoda, is widely distributed, but not a common plant. I saw it on the cliffs at Mororan on the shores of Volcano Bay, on the hills above Nikko, and on the flanks of Mount Koma-Ga-Take, in Central Japan, although only a single plant in each of these widely separated localities. *Ilex macropoda* is a round-headed tree 20 feet to 30 feet in height, with a trunk sometimes a foot in diameter. It is a well-shaped handsome tree. The leaves assume a bright clear yellow colour in the autumn, when they form a beautiful contrast with the bright red long-stalked fruit, which, although not very large, is exceedingly abundant. *Ilex macropoda* grows not only far north, as Professor Miyabe has recently written me of its discovery in the neighbourhood of Sapparo, but in the most exposed situations and at high elevations; and there is no reason, therefore, why it should not thrive in our Northern States, where it may be expected to add considerably to the beauty of shrubberies in the autumn and early winter. A much more common plant than *Ilex macropoda* is

Ilex Sieboldi, although this species does not reach Hokkaido or ascend to high elevations on the mountains of Hondo. It much resembles our North American *Ilex verticillata* and *Ilex laevigata*, although much less beautiful than either of these species, the fruit being smaller and less highly coloured. *Ilex Sieboldi* is a tall spreading shrub, very common in low grounds and near the borders of streams, with slender stems often 12 feet or 15 feet high, and small scarlet fruit clustered on the short lateral spur-like branchlets. In the autumn the leafless branches of this shrub covered with fruit are sold in immense quantities in the streets of Tokio for the decoration of dwelling-houses, for which purpose they are admirably suited, as the berries remain on the branches and retain their colour for a long time. *Ilex Sieboldi* was introduced many years ago into American gardens by the late Thomas Hogg. It is an old inhabitant of the Arnold Arboretum, where it now flowers and produces its fruit every year. As an ornamental plant, however, it is less desirable than the related American species, and it will probably only be cultivated in this country or in Europe as a curiosity, or in botanic gardens.

The other Japanese Hollies with deciduous leaves, *Ilex serrata*, which is closely related to and resembles *Ilex Sieboldi*, and *Ilex geniculata*, a rare shrub of the high mountains, with black fruit, I was not fortunate enough to find.—S., in *Garden and Forest*.

Azalea amoena is sometimes spoken of as tender, but one cannot find any reason for such

statements unless in the very coldest districts of England. Middlesex is not a particularly warm county, but in several gardens we have visited lately in this county the shrub has withstood recent winters without the slightest protection. A bed at Kew in full exposure is conspicuous for the splendid health of the plants, now bristling with flower-buds. Lilies are planted amongst the little shrubs for protection to their rising stems in spring, and contrast to the green base of foliage when in flower.

Forsythia intermedia is a somewhat rare shrub, intermediate between *F. suspensa* and *F. viridissima*, but as these are very closely related, those who do not know the form called *intermedia* will probably think that it is scarcely possible to get a very distinct cross between the two kinds. But *F. intermedia* is well worth making a note of. It is earlier in bloom than *F. viridissima* and erect in habit, but not so stiff, the flowers being very brilliant, freely produced, and making a glorious show of yellow colour. It should be grouped boldly to get the full effect of its flowers, and being so erect, yet spreading out somewhat, intermediate between the two parents in fact, it is well adapted for forming a good mass. We noticed it in full bloom a few days ago in the arboretum at Kew growing by the side of *F. suspensa* and *F. viridissima*. Then one can see clearly the difference. The last-mentioned was only in bud, but *F. suspensa* and *F. intermedia* were in fullest beauty.

Dircia palustris.—Among the numerous specimens of flowering shrubs shown at the meeting of the Royal Horticultural Society from Kew Gardens was this *Dircia*, the Leather Wood of the United States. It is now-a-days very uncommon, though it was introduced into this country more than a century ago. The Leather Wood forms a much-branched, compact bush, seldom more than a couple of feet high and bearing a certain amount of resemblance to its near allies, the *Daphnes*. The bark of the young shoots is of a decided yellowish tinge, while the pendulous stamens, which are disposed in little tufts over the leafless twigs, are of the same colour. The oblong-shaped leaves, which are produced later on, have also a tinge of yellow. A deep, fairly moist soil of a peaty nature suits this *Dircia* the best, though it will succeed in sandy loam if not dried up during the summer.—T.

Fabiana imbricata.—This beautiful Chilean shrub, alluded to on page 210, is not hardy in the London district, for even if trained to a wall, it suffers greatly unless the winter is exceptionally mild, and if severe it is, as a rule, killed outright. At the best it can only be considered hardy in the south and west of England. Fine examples of it are to be seen along the southern coasts, and it will also thrive when in close proximity to the sea. Under such conditions I, a few years ago, observed a grand specimen of it at Sidmouth, in Devonshire. This *Fabiana* certainly merits all that can be said in praise of its beauty when in flower, and as it can be easily propagated and is, therefore, to be obtained at a cheap rate, no harm will be done in testing its hardiness, for, as in the case of T. W. Erle's specimens, it may resist the frost better than would be anticipated.—T.

Rhododendron Early Gem.—This *Rhododendron*, which was very noticeable at the meeting of the Royal Horticultural Society on March 14, is a most desirable variety either for flowering under glass or in the open ground. It was raised by Messrs. Veitch at their Coombe Wood Nursery now some years ago, for it was awarded a first-class certificate in 1874. It is the result of intercrossing the hybrid *R. præcox* and the deep-coloured form of *R. dahuricum*, which leads to a very complicated relationship, for *R. præcox* is itself a hybrid between *R. ciliatum* and *R. dahuricum*. *R. Early Gem* is of a neat bushy habit, while the flowers, which are borne in great profusion, are of a rosy purple hue. Like the parents, it can be forced early into bloom with very little trouble, while in the open ground, if it is so situated as to be protected to a certain extent from late spring

frosts, it is a valuable early-flowering shrub. A group of these dwarf-growing early-flowered *Rhododendrons*, viz., *R. dahuricum* in its two distinct forms, *R. præcox*, and *R. Early Gem*, will if untouched by frost supply a bright bit of colour at a time when most outdoor shrubs are still dormant.—T.

Ivy carpets.—It is really remarkable to find how well the common Ivy will thrive when planted to form carpets beneath the *Pinus* tribe. I wish, in referring to this matter, to support the conclusions put forth by "A. H." When at Farnham Castle a few weeks since, I noticed there that the gardener had planted beneath some large spreading Cedars of Lebanon common Ivy thickly. Just prior to that I had specially noticed at Norbiton Hall, Kingston, one or more exceedingly perfect carpets of this kind, also beneath Cedars, thus showing that Ivy will thrive where many other hardy carpet plants will die. Ivy may be utilised to good advantage in a score of ways, especially for the covering up of bare places beneath trees where shrubs have been exterminated, or sloping banks that will hardly carry a coating of Moss, if the commonest and hardiest of kinds be employed. No doubt it is best to make cuttings, get plants rooted freely from them and then plant them whilst young where to permanently remain.—A. D.

A noteworthy tree in flower now is *Prunus Pissardi*, and it is in bloom in several of our leading English nurseries. A group of it is more effective than a single specimen, the white flowers against the bronzy chocolate tone of the young leaves making a rich contrast. It is a variety of the Cherry Plum, and is as pretty in spring as at any season of the year. As the summer lengthens the leafage deepens in colour, until it becomes almost black, whilst the fruits are dark crimson. A coloured plate was given of it in THE GARDEN September 10, 1887, and although this variety is of comparatively recent introduction, it has become fairly common. When planting, however, the utmost caution is necessary, as one does not want too much of such a tree, so pronounced is its distinctive leaf-colouring. As in the case of variegated plants, a few examples or a group are sufficient.

Prunus triloba is bristling with bloom on a sunny wall at Kew, and if we get a few bright days will be a sheet of flower. A coloured plate of it was given in THE GARDEN of October 3, 1885. Although well known by name, it is scarce; at least not so freely planted as one might expect, considering its distinct beauty. Few wall trees are more beautiful, and although it may be grown as a bush, it is against a wall, as at Kew, that one gets the profuse display of flowers, each semi-double, quite rosette-shaped, and delicate rose in colour, varying, however, somewhat, approaching occasionally pure white.

Cassandra calyculata.—This little North American shrub, even when in full flower, is not particularly showy, but it possesses one very desirable feature, and that is the drooping wax-like blossoms are not affected by frosts sufficiently severe to work havoc with most shrubs that are then in flower. Thus during the present season the mild weather experienced throughout the month of February and the early part of March was very favourable to the different early-flowering shrubs, with the result that in many cases there was a greater wealth of blossoms than has been the case for years. With the sharp frosts that set in after the middle of March was passed, combined with hot sunshine during the day, the flowers were in the case of many subjects quite killed. Among those that suffered most may be mentioned *Rhododendron præcox* and *R. dahuricum*, *Andromeda japonica*, and the *Daphnes*, while *Andromeda floribunda* suffered but slightly, and the same may be said of the *Forsythias*, while at the same time this *Cassandra* and the little *Erica carnea* were untouched. The white form of this *Erica* had, however, in its most exposed parts some of the blossoms discoloured.—T.

Berberis Aquifolium as a specimen.—Those who have not seen this growing in an isolated

position on Grass cannot appreciate its singular beauty as compared with that in the shrubby borders in a mass. Growing alone where it has opportunities for full development, it is in leed a worthy object for a lawn. Close to where I write a bush of it fully 7 feet in diameter is growing. It receives no pruning whatever; the growth is free, yet symmetrical, although loose, and the quantity of flowers it produces every year is marvellous. Again, in the autumn when the leaves assume the bronzed hue common to this plant the effect is very fine.—E. M.

A happy combination.—I recently saw a charming combination of colour effected with two hardy climbers, a small-leaved silver variegated Ivy and *Cratægus Pyracantha*. The wall was covered with the Ivy, and over this was trained the *Cratægus*. The scarlet berries of the latter

buxifolia. These evergreen Barberries all form very ornamental flowering shrubs, most of which are at their best during the spring, though sometimes Darwin's Barberry will produce an autumn crop of bloom. The deep purple berries, too, which ripen towards the end of the summer, impart an additional feature to it. The principal evergreen kinds in our gardens are *B. Darwini*, *B. empetrifolia*, a low-growing, somewhat spreading bush with small narrow leaves and golden yellow blossoms; *B. stenophylla*, a hybrid between these two; *B. congestiflora hakeoides*, a very curious upright sturdy growing shrub with large roundish leaves, well furnished on the edges with prominent spines. The flowers are golden yellow, as in the others. The Himalayan *B. Wallichiana*, with its lemon-coloured blossoms, is another to be especially mentioned, while the little *B. concinna* from the

autumn it should be sufficiently early to get the plants pricked off into 3-inch pots, wintering in a cold frame. Division may also take place as soon as the plants commence to grow, giving them good loam and rough peat, potting firmly. In poor soil some manure in a decayed or dry state should be mixed with the soil. Seedlings should get a sandy compost and a temperature of 60° for a time, then gradually be given cooler treatment. The plants seed freely in the autumn, so that fresh stock is soon obtained. It is well to raise a fresh batch either by division or from seed at least every three years, discarding the older plants. I grow the large plants in 8-inch pots. The seedlings the first season are flowered in 4½-inch pots, being given a shift the next year. There is another variety named *F. appendiculata* with pale red spikes, but I consider it of less value than *F. ramosa* and not nearly so free blooming. Another kind named *F. sonchifolia* with pink petals is a pretty variety, but neither so useful nor free blooming as *F. ramosa*. G. WYTHES.



Flowers of *Francoa ramosa* (Bridal Wreath) in a vase.

contrasted well with the background of white and green. The silver-leaved Ivies being neat in growth, there is no risk of the *Cratægus* being hidden, as might be the case if other kinds of Ivies were employed.—E. M.

Berberis dulcis.—Of the various evergreen Barberries that are natives of South America the finest is undoubtedly *B. Darwini*, but whether more beautiful than the hybrid *B. stenophylla* is at least an open question. Though *B. dulcis* is not nearly so showy as either of the above, it is still a handsome shrub, and possesses the merit of flowering earlier in the season than either of the two herein mentioned. It forms a free growing bush 6 feet or 8 feet high, clothed with small very deep green leaves of a hard leathery texture, while the blooms, which are solitary, are, nevertheless, borne in great profusion, and being suspended on unusually long stalks, they are thus rendered especially noticeable. In colour the blooms are of a clear bright yellow—a very effective tint, and quite distinct from the orange hue of *B. Darwini*. *B. dulcis* is also known by the specific name of

same region is, during mild winters, nearly evergreen in character.—T.

FRANCOA RAMOSA.

(BRIDAL WREATH.)

THIS is not grown so much as it deserves. It is very useful on account of its light, feathery spikes of bloom, which are produced in abundance during the summer months, and being white are valuable for cutting. It is much hardier than is often supposed. I keep the plants in cold frames, not even plunged, and do not lose one. I have kept it on sheltered rockwork without any protection whatever damp acts more injuriously than cold. It is a rapid grower, and requires plenty of moisture in the growing season. Seed may be sown in the autumn or early spring. I prefer autumn, as then the plants are of a good size by the following season and bloom freely. If sown in

ROSE GARDEN.

HYBRID SWEET BRIERS.

I WAS greatly interested in the article on Lord Penzance's hybrid Sweet Brier Roses which appeared on p. 46 of the current volume. The possibilities in this line of crosses seem very promising, and the new race of Roses thus produced will be of great value. Who can love Nature with all her lavish wealth of plant life and not be charmed with the simple and poetic Eglantine that grows so freely in every field and copse? What wooer of the Muses has failed to pay tribute to this sweet leaved Rose?—"the rain-scented Eglantine"—the plant to which the sun itself pays homage by "counting its dewy rosary" on it every morning, and yet I like the simple term "Sweet Brier" used in its designation. It is so suggestive of the plant, and then if we call it Sweet Brier Rose, we quite cover all its features.

Now in this cross with the Hybrid Perpetual strain, see what we get: charming shades of colour, sweet-scented foliage, perpetual free-blooming, fine fragrant flowers, and a hardy plant that is easily propagated and free from mildew and other annoying diseases. That the hybrids obtained so far show scant tendency to an increased number of petals in the flowers is not conclusive to my mind, and I certainly look for different results in future experiments, in spite of the strong native characteristics so predominant in the Sweet Brier. But why must so many of our Roses, or flowers of any kind for that, be so very double to make them beautiful and attractive? Nature, if left alone, rarely if ever makes flowers that way. Man must step in with his superior knowledge, his delicate tools and his skill, and interrupt Nature. Is there not a simplicity and grace of form and outline presented to the eye by a single Rose or other flower that are totally absent in the double flower of any plant? A double flower is an unnatural thing on the whole. We see

in it a violation of one of Nature's primary laws. Her simplest method of reproduction is interfered with or wholly prevented, and how natural is it that she should protest, as we see in the persistent tendency to revert to the original form of inflorescence. But the people like unnatural things, whether through ignorance, misconception, or bad training. We all like to see full, double flowers. The trouble is that so very few are fond of single flowers, or are willing to tolerate them at all. In this lies the evil of the present trend of public taste in the floral realm, as it seems to me. Now the little wild Rose (Austrian Brier), with its five simple little pink petals and attractive stamens, is a charmingly beautiful little flower to me, and I like to wear it in my coat. The native Sweet Brier and the rugosa type are also great favourites of mine.

While I do not wish to see any of these charming wild Roses "improved" out of existence, it is indeed a pleasure to commend such enthusiastic labour as that which has engaged the attention of Lord Penzance, and I want to help rejoice over his signal success, hoping soon to see some of these new hybrid Briers in this country.

The superior results obtained by crossing upon the native Brier instead of the hybrid plant are, of course, natural and quite fortunate, as the production of seed is much more certain in the former case. Here again we see that the more closely we keep to Nature the better we succeed. Surely the sweet-scented foliage of the Brier is a very desirable feature to retain. The foliage of a Rose, or any other flower in fact, is only second in importance to the flower itself and always goes with it. The importance of this fact is happily now more generally admitted and regarded than formerly, as the demand for long stems and vigorous leaves with cut flowers fully attests. The bright-coloured hips or fruits which succeed the flowers of the native Roses are also very attractive and desirable.

Much interest will surely be awakened by the publication of the beautiful plate and the very comprehensive and instructive article with it. Others will be induced to make similar experiments, among which I hope to be numbered.

H. HENDRICKS.

Kingston, N.Y.

Niphetos Rose.—Beyond all others this is still the favourite Tea Rose to furnish white buds for market. It bids fair, in spite of the introduction of some other white varieties, to remain the favourite for a long time. Mr. Wells grows Niphetos largely under glass at Earlswood. In one house a bed 3 feet wide is planted with it, the plants being 3 feet apart. The plants are very hard pruned early in the winter, then started in February, they begin to give buds in March, and keep up a constant succession to October, by which time both sides of the span roof are full of growth. Moderate dressings of manure and liberal waterings are given.—D.

Roses liable to mildew.—All the Roses mentioned by "R." on p. 227 as being specially liable to attacks of mildew have proved the same with me, but one kind that does not appear in the list has been even worse in this respect, although be-

longing to a class—the Dijon Teas—that enjoys comparative immunity from the pest. The kind is Mme. Berard. If planted in an aspect at all sunny or hot it is very quickly attacked, and as I had several large plants upon a wall that had the sun during the greater part of the day, they were always attacked first, and from them the pest spread to the dwarf Teas near by. Although the plants were frequently syringed with extra strong solutions of sulphide of potassium, the pest never seemed to be checked for more than a few days, when it burst forth with renewed energy and spread rapidly, at times some of the leaves becoming perfectly mealy. I believe the situation had very much to do with it.—A. H.

Roses and Clematises.—The article on these by "Ridgewood" (p. 228) deserves attention. There is not the least doubt that the so-called Hybrid Perpetuals enjoy the greater share of popularity, and their in some cases non-perpetual blooming character has been a source of disappointment to many. In a garden where these are planted solely for effect I am convinced that some other flowering plants must be associated with them, or otherwise we must give them a spot where their autumn nakedness will not be too obtrusive. Three parts of the so-called Hybrid Perpetuals are only summer Roses, making a gorgeous display during July, and if they are not denuded of leafage prematurely, those that bloom after do it fitfully, and many fail entirely to show the slightest evidence of a perpetual blooming character. The idea of associating Clematises is, therefore, a good one, since it provides for a succession of bloom from the same plot of ground which may hitherto have given but one lot of flowers. In a Suffolk garden I have seen delightful arches of Roses and Clematises. Again, on walls I have had Clematises, such as *coccinea*, *flammula*, *Sieboldi*, and *Jackmanni*, scrambling upon the Roses and hanging in wreaths of lovely blossom. No apparent harm was ever discovered, and there was much more of picturesque beauty. Climbing and trailing plants might be allowed much more freedom in gardens than they generally are, especially those whose top growth is more or less of annual duration. Our notions of neatness are carried a little too far generally in the restriction of plants of this nature, and still less attention is paid to planting in association things that would provide a succession of bloom.—A. H.

ROSES UNDER COOL TREATMENT.

To secure Roses in bloom during the latter part of March and early in April there is no better method than growing them without artificial heat, especially when one has a lean-to greenhouse. Generally speaking, this is built on the warmest and most sheltered side of a high wall or building. Roses in such a position, even without any further protection, are often very forward at these dates. By pruning them about the first week in January and encouraging the sap to rise steadily and more naturally than when under warmer treatment, together with plenty of air upon bright days previous to their having broken into leaf, one may secure the full advantages of such a warm position without danger or harm from late spring frosts, which so often ruin the prospects of Roses upon a warm wall without glass protection. Keen winds seldom have much effect upon a house in this position, as they do not come from the right quarter. Under cool treatment Roses break quite as stoutly as when grown in the open air, and will generally throw equally as good blooms, with the great advantage of better shape and cleanliness than June Roses without glass protection. By being able to secure a steady growth without fear of severe checks from night frosts Roses will bloom fully six weeks to two months earlier, while the foliage comes of better colour and is stouter in texture. As soon as the young growths are from 3 inches to 4 inches long let the borders be well watered and occasionally forked over, taking great care that from this time onwards only what air is absolutely necessary is

given, and that early precautions are taken to keep down insect pests.

Under two circumstances only should air be given—when the atmosphere is so fully charged with condensed moisture that the young growths show signs of fogging off or damping, and when the sun shines bright and warm, with scarcely any air moving, thus causing the temperature to rise too high during the middle of the day. With due attention to syringing, which I have so frequently recommended, together with careful ventilation, mildew and insect pests are easily avoided. When liquid manure is applied with the object of feeding the roots, let it be weak and give a thorough soaking; small doses of this are not so beneficial. Early in the morning a little manure water sprinkled on the soil so that the ammonia may rise and feed the foliage will be found of great value during bright and trying days, when it is often impossible to admit air without risk of a cold draught. The bright weather of the last few days has made it necessary to afford slight shade; this, however, must be very thin. Do not shade the whole of the glass; a little down the centre of the panes is enough; this, with the bars, will throw sufficient shade and relieve the different portions of the plants as the sun works round. I am just commencing to cut Roses grown under the above treatment, and during April and May hope to have a full crop of good flowers.

R.

MARECHAL NIEL ROSE.

For those who wish to grow for profit and have only a limited amount of glass, I am persuaded from my own experience that it is better to grow *Maréchal Niel* Roses than *Grapes* under certain conditions. I do not suppose for a moment that it would prove remunerative for our very large growers of *Grapes* to substitute this Rose for *Vines*, as I think the market would soon become over-stocked. I have come to this conclusion after five years' experience in the case of two houses devoted principally to *Roses* and *Vines*. The latter I have now rooted out and planted *Maréchal Niel* Roses in their place, as I found that when *Grapes* were plentiful I could not get rid of a limited quantity at a remunerative price, as I had not sufficient to send to a distant market; whereas in the case of *Maréchal Niel* Roses, I have had a ready sale for flowers of good quality up to the middle of April at a price that enabled me to send them a distance of 200 miles.

My returns last year up to the middle of March for this Rose were 4s. per dozen, and 3s. per dozen from that time to the middle of April. Smaller blooms realised 2s. per dozen. In calculating expenses in regard to fuel, the reader must bear in mind that *Roses* can be forced into flower in about half the time that it takes to ripen a crop of *Grapes*. Last year and this it took eleven weeks to get the first lot of blooms open, and the same heat which served to bring on the *Roses* enabled me to raise *Tomato* plants early, as I grow my *Roses* on the cutting-down principle. The *Tomato* plants in pots immediately take the place of the *Roses* on the roof, so there is no loss of time in utilising the house, as the *Tomatoes* commence fruiting in June, and remain in that condition until the growth of the *Roses* require the roof-space again. Last year it was the middle of September before the whole of the *Tomatoes* were removed to a warm wall, so that the space was occupied throughout the year. In the case of *Vines*, they have to remain on the roof all the best part of the season. In calculating the returns according to the roof-space that *Roses* and *Vines* occupy, it is a moderate computation to say that one *Vine* rod and its laterals will take up as much room as three branches of the Rose, and as a strong Rose growth will flower at every joint, a dozen blooms will be produced in the same space as a bunch of *Grapes* will occupy. It is also worthy of remark that *Roses* do not require so much roof-space or such rich borders as *Vines*. As a matter of fact, *Maréchal Niel* Rose is more subject to canker in a highly manured soil than in a poor

one. The best way of preventing any loss of time owing to this Rose being so subject to canker is to put in a young plant or two, according to the space, the second year after the first planting, and to continue doing so as often as there are any symptoms of weakness in the others.

J. C. CLARKE.

FRUIT AND ROSE PROSPECTS.

THESE on the whole are as promising as can well be desired. The winter has been long rather than severe, though some of the usual frosts of March have come dangerously near to destructive force among early fruit trees and forward Roses. A few *Maréchal Niel* and other Teas on south walls have been slightly frozen, and some early Gooseberries and a few of the forward Pears and Plums have suffered, but the main crops of fruits and of Roses in embryo are safe up to the date of writing, the 28th of March. True, the wind is in the east, and sharp frosts are still within the range of possibility, but up to now the crops—writing in general terms—are safe. Every day they become more and more so, owing to the growing power of the sun and the advancing growth of the leaves and young branchlets. Fortunately, as the blossoms and fruit buds open wider, the leaves also grow larger and afford more protection, making up to some extent for the loss of the covering scales of the fruit buds. Apart from the weather, the fruit crops and the Roses are safe. Seldom have there been a fuller set and a fairer show. The trees are mostly in prime condition for yielding a full crop. Apples, Pears, Plums, Cherries, Peaches, Apricots, Nectarines, Nuts are studded with fruit-buds in embryo or fully expanded, while bush fruits, Raspberries and Strawberries are equally or more promising. A few of the more forward Gooseberries in low situations are somewhat more brown in leaf and fruit than could be desired; but many of these may pull through unless a worse, that is a harder, frost befalls them, while the bulk of Gooseberries and Currants are perfectly safe as yet. Strawberries likewise wintered well, and those under liberal culture promise full crops. They are not very widely grown in East Anglia as a field crop for market, but where they are so grown, not a few will bear favourable comparison with those in Kent—the garden of England and the especial home of the Strawberry. The bed system of culture is also not unknown in some parts of Cambs, the Old Scarlet, Paxton, and other favourite preserving sorts yielding good returns grown in this way when heavily dressed with liquid or solid manure.

D. T. F.

THE WEATHER AND THE CROPS.

WHEN the short statements as to the average crop of various fruits come to be written, I expect many of us, so far at any rate as the south of England is concerned, will have occasion to remember with regret the nights of March 18 and 19. From the information gathered from various sources in the immediate neighbourhood, it would appear that even within a limited area considerable difference is apparent in the amount of frost registered. We had 17° on the morning of the 19th; two miles away there were only 12°. In the average run of seasons this amount of frost in the middle of March would have caused comparatively little damage, but fruit trees are early this year, and as a consequence all thoroughly expanded blossoms, unless well protected with thick tiffany or scrim canvas, are likely to be destroyed; also in most cases the earliest of the Gooseberries are badly nipped. I said above the season was an early one, and it is near breaking the record in this respect. We were covering up outdoor Peaches on March 10, and I have to go back thirty years, the very commencement of my gardening career, to find so early a date recorded for the operation. Once or twice in the intervening years it has been very close, but it has not happened that the date was exactly the

same. There is a note in THE GARDEN of March 18, which, interesting as showing the difficulties gardeners had to contend with in bygone days and the preventive measures taken, is of special interest to me, recalling as it does the advice and experience of one of my predecessors here, Charles McIntosh of "Practical Gardening" fame. There can, I think, be hardly two opinions as to retarding the flowering season by the removal of trees from the wall. The principle advanced by Mr. Iggulden cannot be gainsaid. Remove your trees from the cause and the desired effect is produced, or, in other words, the shelter and warmth afforded by the wall advance (one might almost say in some cases precipitate) the flowering season; therefore, trees that have not the full benefit of the same must necessarily be later. So experienced a cultivator as "Y. A. H."—I take it from the initials it would be the same grower that opened the "Peaches for Profit" discussion—can hardly get out of this natural and, to my thinking, unanswerable inference. Possibly, he would mean that he objected altogether to the retarding process, and one can quite fall in with the view, always provided the means for affording spring protection are of the most complete and satisfactory kind, and in a season like the present this would mean a substantial coping with rods and blinds of some stout material that can be run along or up and down sharply at will. Where all this is to hand, there is nothing gained by unnailling the trees; but with inadequate covering, or with nothing at all available, one would always err on the safe side in trying to check a tendency towards a very early expansion of the flowers. There is no doubt that the winter removal of branches and the late spring nailing may with considerable advantage be adopted to secure this end, and yet another factor may be probably found in an endeavour to lessen the tendency to early root-action. Since a short spell of cold in February, we have had this season for the last month far more than the average amount of sunshine—quite warm days, in fact, and under S. and S.E. Peach walls on several occasions during the latter end of February and the beginning of March the temperature reminded one of the middle of June. It is therefore, I think, safe to assume that the early development of bud would be brought about quite as much by the early quickening of root-action caused by the almost phenomenal warmth and sunshine as by the direct influence of the sun's rays on the buds, and anything that (temporarily) prevented that warmth from finding its way to the roots would act as a bloom-retarding agent. A fairly heavy mulching of litter or long manure would, I fancy, help to such an end.

As regards unnailling or untying, as the case may be, and leaving the trees from the walls until the last moment, the chief difficulty I take it in many places in these days is a question of time. The present season is another strong argument in favour of orchard houses *versus* the open wall, for if nothing short of a good coping and expensive covering will save the bloom, by all means make doubly sure by affording the safe and permanent shelter of a house. Since starting the above notes I have had an opportunity of examining trees rather more closely, and find that the Apricot bloom, protected with a double thickness of fish netting, is nearly all destroyed; a little, but it will be a very little, may be saved from the wreck. Early Plums on south-west walls similarly protected are also done for. Many trees, fortunately, had a lot of bloom in the bud stage, so we shall save a fair percentage. Nearly the same remarks apply to Peaches and Nectarines. The majority of these were more fully out, and the greater part of the expanded bloom, especially that showing a full face to the weather, looks very shabby. I also hear the lowest reading of the thermometer in this neighbourhood on the morning of the 19th was 19°.

Claremont.

E. BURRELL.

Bulbs on Grass.—For a good many years I have grown bulbs on Grass and with good results. Mr. Young rightly says the secret of success is

that of allowing the Grass to grow until the foliage of the bulbs has entirely died down. In my case it is not mown until the middle of July. There is one point I would advise cultivators to pay some attention to, viz., that of not allowing the Moss to increase in the Grass, as I find that where this increases, the bulbs give inferior results, the growth becoming choked owing to the thick carpet of Moss. I found this season the Crocuses were not nearly so good in point of flowering nor growth where the Moss has encroached so freely. I purpose raking the bulk of it off early in the autumn, even at the expense of making the Grass rather unsightly for a time. In other parts where the Moss is not nearly so thick, the same defect in the Crocus blooms is not so apparent. I find the white varieties suffer the most, while the yellow is the least affected. Anyone with a suitable position could not do better than utilise the forced bulbs by planting them directly they have done flowering without disturbing the roots. Where the soil is naturally of a heavy character this is a good plan.—E. M.

ORCHIDS.

DENDROBIUM BARBATULUM.

THIS beautiful plant has been known a very long time, and in my early days it was seen more frequently than now. It was described by Lindley so long ago as 1830, but I think it was not known as a cultivated plant till 1844, when it was imported from Bombay by Mr. J. Bateman. It remained plentiful in collections for about twenty years afterwards, as about this time I frequently used to see it flowering in the Orchid collections about London, the temperature and the atmosphere, too, of most of the Orchid houses at that time being favourable to its development. The plant now under consideration is somewhat variable in the shape of its flowers, which may account for its getting confounded with one or two other small-growing species, viz., *D. chlorops*, *D. Hyeunum* and even the pretty and distinct *D. Fytchianum*, figured by Hooker in the *Botanical Magazine*, t. 5444, as *D. barbatulum*, from which, however, it is quite different both in the shape of its segments and in the colour of the column. Moreover, I think *D. barbatulum* is confined to the forests of Western and Southern India, whilst *D. Fytchianum*, although widely spread in Burmah, is confined solely to that land. The stem-like pseudo-bulbs of *D. barbatulum* have a swollen base, from which they taper upwards to a point, bearing narrow membranous leaves, which all fall away before the flowers appear. The flowers are borne upon dense lateral or terminal racemes some 6 inches in length, the individual flowers measuring from 1 inch to 1½ inches across. It is a lovely pure white-flowered species, which should be well taken care of by growers. It may be grown on blocks of wood with advantage, and in this position I have grown specimens of it with great success. This practice conforms closely to its natural conditions, for we are told that it grows upon the bushes and small trees which form the undergrowth of the forests of Western and Southern India, but most frequently upon those within the influence of the sunshine. I therefore recommend that the plant be surrounded with Sphagnum Moss, and be kept in good heat and in an atmosphere well charged with moisture. During its growing season, which is the summer months, it should be liberally supplied with water at the roots. When the pseudo-bulbs are about made up and growth finished, care must be taken that the bulbs are not shrivelled up by an excessive drying, which

the plants very likely get in a state of Nature, but as these are affixed to living trees, the roots do not suffer so much from drought as they do under artificial treatment. When the days begin to lengthen, the plants should be removed to warmer quarters and receive more water, when they will begin to show signs of returning life and the racemes begin to push out from the various rings on the pseudo-bulbs, and as they increase in size the plants may be returned to the East Indian house and receive their full complement of water. The flowers last a considerable time if the water is kept from them, for they are so muslin-like, that a single sprinkling from the syringe would ruin them. I have found the flowers of this species and many others retain their full beauty for a longer time in a moist growing atmosphere, if they open in it, than they do when removed to the flowering house, which is usually kept drier with the erroneous idea of preserving the blooms.

WM. HUGH GOWER.

Cypripediums from Bristol.—Mr. J. Crispin sends me some very fine Orchids, one a spike of *C. Robelinii* bearing five flowers. This appears to differ from *C. philippinense*, with which it is usually classed, by being quite destitute of the hairy fringes at the upper edges of the petals. The next is a twin-flowered spike of the fine hybrid *C. selligerum*. This is a cross between *C. barbatum* and *C. philippinense*. With the above comes a fine flower of *C. Dayanum*, but under the name of *C. Petri*. This was named in honour of Mr. Peter Veitch, of Exeter, he having collected it in Borneo in 1879. I see that both it and *C. Burbridgei*, collected at the same time by Mr. Burbridge, are made synonymous with *C. Dayanum*, but I consider them quite distinct as garden plants. Mr. Crispin's flower certainly is the normal form of *C. Dayanum*, and if this gets sold and distributed as *C. Petri*, then there will be no end of confusion. The flower sent as *C. marmorophyllum* is, I think, correct, but it is not a good form of this hybrid. You are quite right in supposing these plants do best near the glass and in a span house with a low roof, but at the same time shading the plants to maintain the deep rich colour of their foliage, will be very suitable for them.—G.

Cypripedium Peetersianum.—This very beautiful Lady's Slipper was shown by Messrs. B. S. Williams and Son, of Upper Holloway, at the recent Royal Botanic Society's show. It is a hybrid between *C. philippinense* and *C. barbatum*, the flowers showing well the character of the two parents. The strong, vigorous plant bore a spike of three flowers of beautiful shape, the dorsal sepal finely coloured, the ground white, but on this appear lines of crimson and pale green—a delightful bit of colour—the lip small, resembling *C. barbatum* greatly in this particular, and the long slender petals of a deep crimson shade. *C. Peetersianum* is unquestionably one of the finest hybrids of this section of Orchids, and a plant that possesses freedom, vigour, and distinctive character.

A new Orchid foe.—Specimens of the pest I am now referring to have been submitted to the scientific committee of the R.H.S., and it was also incidentally referred to by Mr. W. H. Gower in his article on *Dendrobium Phalaenopsis* (p. 236), on which it was imported. It was Mr. Burbury, Mr. Chamberlain's Orchid grower, who first drew my attention to it. In its beetle form there can be no mistaking its appearance, being rather larger than the common ladybird, of a sooty-black colour, therefore easily perceived, with a sharp proboscis, with which it bores into the heart of the young growth. It is evidently the larva which bore into the pseudo-bulbs and regularly honey-comb them, as only such as these could get through the small apertures, which are easily seen

when these insects are present. As Mr. Gower says, the best course is to cut off the old pseudo-bulbs and burn them, although if a sharp look-out is now kept for the beetles, they may be stamped out without disfiguring the plants. I do not suppose this pest will confine its attacks to *Dendrobium Phalaenopsis*, but prey upon the whole genus if it gets established. It appears to me to be something akin to our native wood beetle.—A. YOUNG.

Cœlogyne cristata.—As we have been very successful in flowering our *Cœlogyne cristata* this year, I had one of the plants photographed. The plants were the admiration of all who saw them. The enclosed photograph was taken from a plant growing and flowered in a 12-inch pan. It had sixty spikes of bloom, each spike carrying four fully-expanded flowers, all open at the same time. The position I find to suit them best is to suspend them close under the roof-glass all the year through, where the temperature rarely falls below 50° in the winter, with plenty of moisture at all times, and especially so during the summer months, when they are thoroughly watered twice and sometimes three times a day, with plenty of air and never shaded. The result is large well-ripened pseudo-bulbs that always flower freely.—J. FRIEND, *Book's-nest, Godstone*.

Cypripedium Pitcherianum (William's' var.).—One of the most striking of Lady's Slippers is this variety. The type is a hybrid between *C. Harrisianum superbum* and *C. Spicerianum*. It is interesting to note that William's variety was raised by Messrs. B. S. Williams between *C. Harrisianum superbum* and *C. Spicerianum magnificum*. The flower is very large, partaking of the character of both parents, the broad, robust petals reddish brown in colour, with a deeper coloured central line, whilst the dorsal sepal is of great width, white feathered with rich rose-purple, the central longitudinal line of similar colour, reminding one in this particular of *C. Spicerianum magnificum*, the bold lip of a polished reddish brown. It is a hybrid of very vigorous growth, free and handsome.

Cypripedium Io.—"C. M." sends me three varieties of Slipper Orchids for an opinion. No. 1 is *C. Io*, which was raised by Mr. Cookson, of Wylm-on-Tyne, between *C. Aegus* and *C. Lawrenceanum*. The flower before me has richly coloured petals, thickly set with large, black, wart-like spots. It is a great pity that the lip is of the usual brownish hue. No. 2 is a hybrid raised in Paris by M. Bauer between *C. superbiens* and *C. venustum*. It is distinct enough, but I do not like it. The flower and the plant have too much the appearance of *C. venustum*. There is not colour enough to give it life, and all such, I am of opinion, will take quite a secondary place soon. No. 3 is a very pretty and brightly-coloured form of *C. Meirax*, and it will long be valued in our collections. It was raised by Mr. R. Warner, of Broomfield. We have no record as to its parents, but *C. venustum* was evidently one of them.—W. H. G.

SHORT NOTES.—ORCHIDS.

Dendrobium infundibulum giganteum is an exceptionally fine variety of this Moulmein species. It was one of the most interesting Orchids at the spring exhibition of the Royal Botanic Society. The flowers are very large, massive, broad and pure white, with a rich orange-yellow blotch at the base of the lip.

Cattleya Lawrenceana.—The first flower I have seen of this species this season comes to hand from the Rev. E. Handley's collection. The sepals and petals are rich dark rosy-purple, which is the colour of the long tube of the lip, its expanded portion being very deep satiny-purple, the throat white. This plant, now it has become established, appears to be quite an early spring bloomer.—W. H. G.

Broughtonia sanguinea.—"W. M." sends some dried flowers of this plant which he has received from Jamaica, and asks if it is worth importing. If the writer wishes to import this for sale I should say no, because it can be bought cheaply enough now, but

if it is only for home growing and you have a friend there who could and would send you some home, I should have them. The plants should be grown in the full sun and in a very moist atmosphere.—W. H. G.

Cypripedium Rothschildianum.—J. Emerson sends me flowers of this plant, asking what is the difference between *C. Elliottianum* and this. I was myself led into error when I first saw the plant called *Elliottianum*, and thought it was a distinct kind, but having since seen the two plants flowering at Sir Trevor Lawrence's and several other places, I can only say they are one and the same thing.—G.

Dendrobium nobile—G. Craig sends me two highly coloured forms of this species, asking if one is not nobiliss. It is not that variety. I had the only plant that has been imported of this under my charge. I should, however, like to see another specimen of the flower sent when the plant becomes stronger, for then the bloom will show to better advantage.—W. H. G.

Cypripedium caudatum roseum.—J. Wright says he has a plant which has been in bloom for a fortnight, and he thinks the flower has quite done growing. The petals measure rather more than 24 in. long, and he asks if this is not an unusual length. I have frequently seen them longer, and some two or three years ago I had a flower of this plant from Mr. White, of Arddarroch, the petals of which measured 32 inches in length.—W. H. G.

Cypripedium villosum aureum.—From G. Jones I have a flower of this very beautiful variety. He says it has appeared from amongst a lot which he had sent him direct from a friend about three years ago. The flower is large, well expanded, the dorsal sepal broad and flat, with a white marginal border, and the whole surface of a bright almost golden-yellow, the petals and lip tinted with the same bright colour. I think this variety was first known about ten years ago, and it is still very scarce.—W.

Dendrobium Falconeri giganteum.—Flowers of this fine variety come from Mr. Kerslake, gardener to the R.-V. E. Handley, Bath, who says the plant is bearing twenty-nine flowers. This variety still remains rare in collections. It is a far more robust grower than the original type, and the flowers also, which are some 3 inches across, are more richly coloured and more fleshy in texture. The sepals and petals are white, broadly tipped with rich bright magenta, the same colour being on the front of the lip, behind which is a broad zone of white, the base being ornamented with a very large blotch of deep maroon-crimson having a marginal border of tawny orange. *D. Falconeri* is a somewhat difficult plant to flower. I used to grow it in the East Indian house and rest it in the Odontoglossum house, keeping it fairly dry during the resting season.—W. H. G.

CLEARING A POND.

YOUR correspondent "W. A. S." (p. 225) might try the effect of a few swans on his pond. In this way a piece of water here of about 85 acres was quickly cleared of weeds by the introduction of about a score of swans. The weeds "W. A. S." complains of as infesting the deep part of his pond I presume will be *Polygonum amphibium* or *P. Persicaria*, *Myriophyllum spicatum*, and *Ranunculus aquatilis*. Either of the two latter will, if allowed to grow undisturbed, render the pleasure of boating or fishing practically an impossibility. They are a thousand times worse than the much-maligned American weed, *Anacharis alismastrum*, which seldom rises to the surface except in shallow streams. Whenever it has appeared either in ponds or streamlets it has soon grown itself out. The new American weed seems to be in nearly everyone's mouth, especially those who happen to have a piece of water. To them the very name seems to hang about and haunt them in the form of a perpetual bogey. There is nothing so black as it is painted, and from thirty-two years of close observation of ponds, streams, and streamlets in this neighbourhood I am pleased to be able to say that nothing need be feared from the presence of the American weed. I am very much of opinion that the Myrio-

phyllum and the *Ranunculus* are often taken for the American weed. If by Bulrushes "W. A. S." means *Typha latifolia*, or Reed-mace, these are easily got rid of by pulling them up by the roots. This operation may be done from a boat or flat raft. I prefer the latter, as the weeds are easily hauled on to the raft, and when sufficiently loaded the raft can be floated away and unloaded. The weed which I dislike most in shallow waters is the yellow Water Lily (*Nuphar lutea*); its roots are so difficult to pick out, but perseverance is the only way. It may be kept under by mowing it with a scythe, never allowing the flowers to mature and shed their seed. But doubtless the best way to clear a pond of all noxious weeds and mud is to drain off the water and then clear out everything. This is now done effectively and quickly by means of steam-power and an apparatus made on purpose. Fish need be no obstacle to work of this kind; a place may be prepared into which as many may be deposited as required to re-stock the pond after being cleared out. The fish, I understood the late Mr. Buckland to say, would be all the better for a few fresh ones brought from the waters of some kind and obliging neighbour. The freest weed of the waters here, when the water is about 3 feet or 4 feet deep, is the common Reed (*Arundo Phragmites*). It grows immensely strong, and is in character not unlike some varieties of the Bamboo. It forms a thorough and complete break against east, or indeed any other wind. The reed warbler (*Sylvia arundinacea*) will lay hold of two or three or four of these Reeds about 2 feet or 3 feet above the surface of the water, tie them together, and there build for itself the most exquisite little nest. After the incubation season is over, it is very interesting to find these nests, cut them out in their natural *situ*, Reeds and all, then place them amongst the ornaments of your house. You will be surprised to learn how few people there are who know anything at all of the existence of this very interesting little bird, or of its still more extraordinary little nest. Anyone may see a very fine specimen of this little fellow and the nest in the Natural History Museum, South Kensington. *Poa aquatica* is another of our tall pond Grasses. *Butomus umbellatus*, or Water Plantain, is another very handsome plant and one we can very well afford to tolerate. Unlike "W. A. S.," we are desirous of encouraging our Bulrushes, as they are always in great demand for house and even church decoration.

Coombe Abbey.

W. MILLER.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY.

MARCH 28.

At the meeting of the R.H.S. on March 28 (the full report of which was crowded out from our last issue) the St. George's Nursery Co., Hanwell, exhibited a magnificent group of Cyclamens, the finest without doubt that has been staged this season both in quality and quantity; the white varieties were superb, the flowers extra and the colour pure. The pink, salmon-pink, rose and dark blood-red varieties were also of splendid quality. The habit in each case left nothing to be desired and the plants were profusely flowered (silver Flora medal). Messrs. E. D. Shuttleworth and Co., Peckham Rye, contributed a small group of fine-foliaged and flowering plants; amongst the former were *Dracæna Lindenii* and *Caladiums*, and of the latter, Lily of the Valley and *Azalea mollis* (silver Banksian medal). Mr. H. B. May, Dyson's Lane Nursery, Upper Edmonton, sent another of his well-grown groups of decorative Ferns, the plants by their appearance betokening their enduring character through no excess of shading; these comprised *Adiantum Farleyense*, A. Wiegandi, A. grandiceps, *Davallia Mariest*, D. Griffithiana, *Pteris tremula elegans*, P. Victoriae, P. nobilis, P. regina cristata, and other useful

kinds. *Leucostegia immersa*, *Osmunda palustris*, *Microlepia hirta cristata*, *Hypolepis*, *Nephrolepis exaltata* in baskets and *Platynerium alcinorne* on cork blocks were also included (award silver Banksian medal). From Farnham Royal Messrs. James and Son sent a splendid assortment of their unique strain of *Cinerarias*, so remarkably dwarf and with such immense flowers, the selfs being very pure in their several colours; a better style of *Cineraria* than these for decoration could scarcely be desired (award silver Banksian medal). A smaller collection of larger plants was contributed by Mr. W. M. Bullivant, Eden Park, Beckenham, and the same award was made as in the last instance. Messrs. J. Peed and Sons showed a group of fine-foliaged and flowering plants of useful size, embracing *Orchids*, *Clivias*, *Crotons*, and *Dracenas*, receiving a like award. Messrs. W. Cutbush and Son showed a group of greenhouse and forced plants, comprising *Azalea mollis* and *Staphylea colchica* in good condition, with *Boronia*s and *Ericas* (award silver Banksian medal).

Of hardy flowers Messrs. Barr and Son had a fine collection, comprising a large assortment of Daffodils, as *Golden Spur*, *Telamonius plenus*, *pallidus præcox*, *bicolor Horsfieldi*, *princeps*, *Leedsii amabilis*, *Emperor*, *Sir Watkin* in the finest condition of any, with the dwarf and beautiful kinds, *cyclamineus* and *minor*. *Muscari neglectum majus*, with *Chionodoxa sardensis* and *C. gigantea*, *Scilla bifolia taurica*, and *S. bifolia alba*, *Primula rosea* (very pretty), and *Fritillaria aurea* were all well represented (award silver Banksian medal). Messrs. Shuttleworth and Co. had also a group which included the best of the Daffodils, with *Primula marginata*, P. *acaulis*, *alba plena* and P. *Sieboldi*, with *Iris persica* in beautiful condition, *Puschkinia libanotica*, and *Arnebia echioides* (the Prophet Flower) (award bronze Banksian medal). Mr. W. R. Newport, Uxbridge, showed a nice group of Model White Intermediate Stocks, the plants dwarf and freely flowered, being most useful material for indoor decoration at this time of the year. Messrs. R. Veitch and Sons, Exeter, showed *Rhododendron gloxiniflorum*, a variety with pure white bell-shaped flowers having minute spots upon the upper segments, the trusses of medium size. Messrs. J. Veitch and Sons, Chelsea, had a beautiful basketful of *Chionanthus virginicus* (the Fringe Tree) in most profuse flowering condition; the flowers are scented. It is a North American introduction, being hardy in this country. As exhibited it should prove a very useful pot plant for indoor decoration in the spring.

In the competitive class for Daffodils the first prize was awarded to Rev. Eugene Bourne, Dunston Vicarage, Lincoln; the best flowers were those of Sir Watkin, Ajax, Golden Spur, Henry Irving, *Incomparabilis* Queen Bess, and Leedsii Duchess of Brabant. From Rev. G. H. Engleheart, Andover, came quite a study in hybrid Daffodils raised from divers crosses; most of these were the paler forms, N. *albicans*, N. *obvallaris*, N. *triandrus*, N. *corbularia citrinus*, N. *poeticus*, and N. *moschatus*, having all been worked upon in divers cases with most interesting results.

The weather in West Herts.—The present term of warm weather has now lasted for over five weeks. During this remarkable period there have been only two days which have proved in any way unseasonably cold. On every night, however, of the last three weeks the exposed thermometer has indicated more or less frost; consequently the range in temperature even in the shade has been very considerable, often exceeding 30°, and on Saturday last amounting to as much as 35°. Since the middle of March the temperature of the ground at 1 foot deep has risen from 40° to 49°, and that at 2 feet deep from 42° to 47°. Rain has fallen on only five of the past thirty-six days, while the air has been singularly dry. The ground is also now becoming unusually dry. In fact no rain water at all has come through the 2½ feet of soil in either of my percolation gauges for three days, and no measurable quantity for nearly a month. For three weeks the sun has been shining brightly on an average for nearly nine hours a day,

and on three of these days the total record exceeded ten hours. In the first half of the period under review the wind came from some westerly point of the compass, and was blowing at the mean rate of ten miles an hour, but since then the direction has been mostly some point between north and east, and the average rate of movement only about four miles an hour. A wild Cherry tree growing in my garden came first into blossom on Saturday last, or a month earlier than its average date of flowering in the previous seven years, and very nearly three weeks earlier than in the most forward of them.—E. M., *Berkhamsted*.

NOTES OF THE WEEK.

A note from Margam Park.—The weather all through March here was very fine. The Peaches and Plums on open walls are formed. Pears have set well and Apples just coming into bloom. Ornamental trees are nearly in full leaf, and the spring is altogether quite earlier than usual. I was greatly afraid of frost in March, but we escaped, and if we can keep on as at present, it will be the earliest season on record.—J. MUIR.

Chrysanthemums in April.—Though we get all sorts of things at all sorts of seasons now, there is still a surprise left for us in seeing large Chrysanthemums in April. Mr. Lambert, of Powis Castle Gardens, writes to us as follows: "The enclosed blooms of *Etoile de Lyon*, cut from bush-trained plants, I am sending you to show what a useful one this monster is for growing for late flowering. I find it one of the best for this purpose."

A hybrid Passion Flower.—I send a bloom of a hybrid *Passiflora* raised here. It is quite distinct from any cross that I have hitherto seen. It is between *onychina* and *princeps*, the latter supplying the pollen. The petals are bright crimson, and the thickly barred somewhat flexuose rays show its seed-bearing parent; the leaves are somewhat trilobed. It is a variety of fairly free growth. I have another—on which I build great expectations—between *onychina* and *amabilis*, but it has not yet flowered. In foliage it differs from any.—J. M., *Charmouth, Dorset*.

Jonesia Asoka is one of the most interesting things in bloom in the Royal Gardens, Kew. It was introduced from the East Indies in 1796. But such species are not for every English garden, as J. Asoka grows to a very large size—quite a tree, and it is only in such fine houses as the Palm house at Kew that one can hope to see its true character. When in full bloom it makes a gay show of colour, the heads of flowers not being unlike those of an *Ixora*, and in colour they are orange-scarlet, the stamens protruding from the perianth. J. scandens was introduced from the East Indies in 1820. Where sufficient space is at command J. Asoka is a tropical tree of importance, and deserves a good place for its free-flowering qualities and richness when in full bloom.

Ranunculus cortusæfolius is a species that should be made good note by all who require a fine plant for the conservatory. It was shown in splendid character by Mr. C. Wood, gardener to Lord Hylton, Merstham, Surrey, at the meeting of the Royal Horticultural Society on Tuesday, March 28, and at the meeting on March 22, 1892, it was given a first-class certificate. R. cortusæfolius, although little known, is not a rare plant. It was introduced in the year 1826 from the Canary Islands, and the plant exhibited this year was over 5 feet in height, the leaves, of a rich green colour, very much like those of R. acris in expression, being nearly 2 feet in width. The flower-stem is tall, and bears in the spring freely-branched cymes of large rich yellow flowers of exactly the colour of those of the common R. acris, the segments widely placed, shining as if polished. A specimen in full bloom is very beautiful, and has a rich effect with its many brightly coloured flowers. A figure of it appears in the *Botanical Magazine*, t. 4625, and we hope that such a plant so well adapted for

the cool house will become commoner in English gardens. It is certainly not hardy, unless a very favourable spot in quite the south of England can be selected.

A beautiful indoor Rhododendron in bloom a few days ago in the temperate house at Kew was *R. formosum*, which was found in 1815, its native home being in the Eastern Himalayas, on the mountains near Sylhet. In 1849 plants at Kew and Syon House, Brentford, bloomed simultaneously, and it was at once seen that *R. formosum* was a splendid acquisition to English gardens. The leaves are narrow and each about $2\frac{1}{2}$ inches long, the flowers, borne in twos and threes, being white, touched more or less with rose—a delicate association of colour, made more pleasing by the rich pink buds. It is very similar to *R. Gibsoni*, but the difference between the two is sufficiently marked to keep them separate, *R. Gibsoni* being a plant more compact in habit and differing also in the character of the leafage.

The crimson Rockfoil (*Saxifraga oppositifolia*) from Perthshire.—Herewith I send a sample of the native flora of the Highlands. You will see the enclosed flowers show several forms, varying in size of the flower and depth of colour, due mainly, I think, to the exposure and quality of the soil the plants grew in. *Saxifraga oppositifolia* grows abundantly on Ben Lawers and the spurs of hills branching from it. The accompanying flowers were obtained from the side of a mountain rill in Glenlyon, and the rill, or stream rather, emanates from a spur of Ben Lawers. It is not found in quantity far away from streams, as it is a pure alpine, and its seed seems to be distributed by water agency, until it reaches, perhaps, 700 feet altitude, which seems to be its lower limit. I observed it growing in abundance above 3000 feet on Ben Lawers last summer along with other alpine. It is particularly handsome in the meantime in sub-alpine districts, but not on the Ben, as the Ben carries his nightcap still. It has only one rival, in my opinion, viz., *Gentiana verna* (the latter does not grow in this locality that I am aware of).—ROBERT W. MILNE.

Notes from Loxwood.—The extraordinary dryness and the hot sun of March have been very bad for Daffodils in the south of England, and I have no doubt we shall see many notes to this effect. The foliage is poor, the flowers dwarf and stunted, and highly coloured varieties, as *C. J. Backhouse*, *Queen Sophia*, and others, are very deficient in colour. I have never known *Narcissi* so early here. A good representative collection is grown, and one may say all the chief varieties of the various families are fully out and many already past their best. *Mme. de Graaf*, *J. B. M. Camm*, and *Mrs. J. B. Camm* are just opening, and the *Nelsoni* varieties the same. *Ajax Galatea*, a seedling of the late Captain Nelson, is a splendid white *Ajax*, very early, and of robust constitution. It is very distinct and good. On the rocky here two charming plants out now are *Petrocallis pyrenaica*, a veritable gem, and *Thalictrum anemonoides*. Both have been out all the winter. Flowers are out now which one generally expects in May—*Iris pumila* flowering freely, *Phlox amœna* a mass of bloom, and *Phloxes Vivid*, *Nelsoni*, &c., bursting fast. *Aubrietia Leichtlini* and *tauricola* are covered with bloom. *Waldsteinia trifolia* has been a mass of bloom for a fortnight or more; also *Hutchinsia alpina*. *Anemone apennina* is fully out, and many other things, including *Anemone Robinsoniana*, open to-day, are generally a month later. I could give a long list of things that are thus abnormally early owing to the hot sun of March. Tulips are very early; Greig has been out a week. *Primula cashmeriana*, *P. rosea* and *P. nivalis* were sadly injured by frost about a fortnight ago. Fritillaries have been very good. Verily the flowers of May have been out in March this year, and one wonders whether other things will all be before their time, or if winter will yet give us another visit. Many Pansies are out, but rain is much wanted generally.—M. C., *Loxwood House, Billingshurst, April 4.*

Scarlet-flowered Thistle (*Erythrolæna conspicua*).—This very handsome hardy plant is by

no means new, having been introduced into this country from Mexico, of which it is a native, about 1825 by Mr. Bullock, and first flowered by Mr. Robert Barclay in the open border in his then well-known garden at Burg Hill. It is a biennial, and is well figured by Sweet in the second volume of his "British Flower Garden" on plate 134, and also very inadequately four years later by Curtis in the 56th volume of the *Botanical Magazine* on plate 2909, the latter plate giving an incorrect idea of the colour of the flower, which when fully developed is also much larger than there represented. This fine plant has, I fancy, owing to its short life which obliges it to be constantly renewed from seed (which, except in favourable seasons or under glass, would not in our uncertain climate always ripen), been almost lost to English gardens for many years. The flower-stem of a fully developed plant, as described by Sweet, reached the height of 8 feet, with eighteen lateral branches, each terminated by three or more of its brilliant orange-scarlet Thistle-like flowers. The plant now in bloom in my conservatory was lifted from the open border where it had passed the winter without any protection whatever on its showing its flower-spike at end of January, as I was afraid the rough weather we often experience in February and March might injuriously affect the development of the flowers. The flowering, however, at this early season of the year seems to be somewhat unusual, as in *Botanical Magazine* it is spoken of as blooming towards the end of summer. Another fine plant left in open air has made a fine rosette of silvery prickly leaves, but as yet shows no sign of any flower-spike, so I hope it will bloom during the summer. My spike is only $3\frac{1}{2}$ feet high with ten lateral branches. The flowers are full of nectar, which pours out of them.—W. E. GUMBLETON.

PUBLIC GARDENS.

THE Earl of Onslow, as lord of the manor of Horsell, near Woking, has granted nine acres of common land at Horsell for the purposes of a public recreation ground, at a nominal rent of 6d. per annum.

The Harlesden public park.—The Willesden Local Board will commence the work of laying out the new public recreation ground at Roundwood Park, Harlesden, at once. The board has purchased the land for £15,000, of which sum the inhabitants have subscribed £1000. The Local Government Board have authorised the local authority to borrow £20,000 for the purpose of carrying out the work.

Epping Forest.—We learn that Mr. Frank F. McKenzie, who has been connected with the forest for the last thirteen years, and upon whose shoulders fell all the work during his late father's illness, has been appointed by the Epping Forest Committee as the superintendent *pro tem.* Mr. McKenzie will be an applicant for the position vacant by the death of his father.

Alexandra Park.—Even Mr. Littler himself has now given up all hopes of being able to carry into effect his scheme for the acquisition of the Alexandra Palace and grounds. The failure is due, in his opinion, to the policy pursued by the London County Council. The project for the acquisition of the 133 acres protected by Act of Parliament will now be proceeded with. The sum required for this purpose is £100,000, and of the £70,000 promised towards the larger scheme Mr. Littler anticipates that £50,000 will be available.

Testimonial to Mr. and Mrs. Dodwell.—Mr. and Mrs. Dodwell celebrate their golden wedding on April 20, and it is proposed by some of his old friends who have long watched the work done by Mr. Dodwell in the development of the Carnation, and who have very pleasing memories of the social meetings of the Carnation and Picotee Union at Oxford, to commemorate this auspicious event by the presentation

of some suitable piece of plate. It is proposed to limit individual subscriptions to 2s. 6d. or 5s. The subscription list must be closed by April 12. It will save much time and trouble if subscriptions be sent direct to Mr. R. Sydenham, 190, Bristol Road, Birmingham, treasurer of the fund.

A plague of weevils.—The Pine forests in the neighbourhood of Chemnitz for the past two years have been invaded by a plague of weevils, coming from the Hartz. Thousands of trees have fallen. They look as though they had been sprinkled with finely powdered chalk. Such trees are worse than useless, for besides being unfit for commerce, they contain the larvae of the dreaded insect.

Death of M. Alphonse de Candolle.—We learn that this eminent botanist died at Geneva on Tuesday, April 4. He was a son of Augustin de Candolle, and was born at Paris in 1806. He was his father's assistant and successor as Professor of Botany at Geneva, and published numerous treatises. In 1874 he succeeded Agassiz as a foreign associate of the Paris Academy of Sciences.

Royal Horticultural Society.—The next meeting of the society will be on Tuesday, April 11, when Mr. Eversard, F. im Thurn has promised a paper on "Orchid Life in Guiana."

BOOKS RECEIVED.

"British Fungus Flora." Vol. II. By George Massee. George Bell and Sons, York Street, Covent Garden.

Royal Botanic Gardens, Glasnevin, "Seeds for Exchange."

"Bibliografía de la Rosa." Por D. Mariano Vergara. Madrid, 1892.

"Cassell's Popular Gardening." Part 1. Cassell and Co., Limited.

"Johnson's Gardeners' Dictionary." New edition, thoroughly revised and considerably enlarged. By C. H. Wright, F.R.M.S., and D. Dewar, Curator Botanic Gardens, Glasgow. G. Bell and Sons, York Street, Covent Garden.

"The Food of Plants." By A. P. Laurie. Macmillan and Co., London.

Names of plants.—*Everson*.—1, *Dendrobium Pierardi*; 2 and 3, too much shrivelled; 4, *Aerides crispum*.—*W.*.—1, appears to be *Oncidium luridum*; 2, *Epidendrum leucociliolum*; 3, *Odontoglossum*, apparently *O. gloriosum*; 4, *Vanda tricolor insignis*. *W. M.*.—*Broughtonia sanguinea*.—*J. B.*.—1, *Dendrobium fimbriatum oculatum*; 2, *Lycaste Skinneri*, very dark variety; 3, *Cattleya Trianae*, ordinary form. —*T. Dixon*.—1, *Odontoglossum blandum*; 2, *Oncidium encolor*, too badly crushed to make any comments upon. —*C. Bute*.—1, appears to be *Cypripedium Hornianum*; 2, *C. Chamberlaini*, but a very dull coloured variety; 3, *Dendrobium nobile*, a grand form; 4, *D. primum*.—*M. A. G.*.—*Hæmanthus natalensis*.

Names of fruit.—*R. West*.—1, Brabant Belle-fleur; 2, Hoarv Morning; 3, Sturmer Pippin; 4, Lamb Abbey Pearmain.—*W. Hibbert*.—London or Five-crowned Pippin.

"The Garden" Monthly Parts.—This journal is published in neatly bound Monthly Parts. In this form the coloured plates are best preserved, and it is most suitable for reference previous to the issue of the half-yearly volumes. Price 1s. 6d.; post free, 1s. 9d. Complete set of volumes of THE GARDEN from its commencement to end of 1882 forty-two vols., price, cloth, £30 12s.

"Gardening Illustrated" Monthly Parts.—This journal is published in neatly bound Monthly Parts, in which form it is most suitable for reference previous to the issue of the yearly volumes. Price 5d.; post free, 8d.

"Farm and Home" Monthly Parts.—This journal is published in neatly bound Monthly Parts, in which form it is most suitable for reference previous to the issue of the yearly volumes. Price 5d.; post free, 8d.

"Hardy Flowers."—Giving descriptions of upwards of thirteen hundred of the most ornamental species, with directions for their arrangement, culture, &c. Fifth and Popular Edition, 1s.; post free, 1s. 8d.

"The Garden Annual" for 1893.—Contains Alphabetical Lists of all Branches of the Horticultural Trade. The Lists of Gardens and Country Seats (containing over 9000) have been very carefully and extensively revised, and are admitted to be the most complete ever published. Price 1s.; by post, 1s. 8d.

All of our readers who are interested in the improvement of cottage homes are invited to help us to make **Cottage Gardening** known. It is published at the very lowest price to meet the wants of those for whom it is intended, and copies will be sent for distribution, free by the publishers, Messrs. Cassell and Company, La Belle Sauvage, Ludgate Hill, E.C.

No. 1117. SATURDAY, April 15, 1893. Vol. XLIII.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—Shakespeare.

STOVE AND GREENHOUSE.

NEGLECTED PLANTS.

RONDELETIAS.—Save in botanical collections, it is very rare now-a-days to see these plants under cultivation. Occasionally specimens of *R. speciosa* major are to be met with at horticultural exhibitions during August and September, but more often than not these even do not represent in the best possible manner this very useful family of stove plants. The type, *R. speciosa*, used to be shown during the summer at the metropolitan exhibitions of twenty years ago, being an earlier flowering plant than the major form. The chief value of the *Rondeletias* is apparent during the autumn months, when, with good management, they make a beautiful display from August well into October. Not only upon the plants are the flowers serviceable, but also in a cut state, particularly those of *R. speciosa* major, which may be cut with a good length of stem, and that without doing the plants any harm. They last well either cut or upon the plant, but are rather susceptible to bruising if not carefully handled. In their colours they are also very distinct, whilst the trusses, being of the size of those of *Bouvardias*, are useful in many ways.

The following are, in my opinion, the best three varieties to grow:—

R. SPECIOSA (also known under the name of *R. odorata*), a native of Cuba and the West Indies, is of a distinctly shrubby growth, the foliage rigid and easily broken, in shape acuminate, dark green in colour, and never of excessive size. As before stated, it flowers during the summer, but, by stopping, it may be easily had in bloom in the autumn; in fact, it is possible to flower it twice a year. The colour is a dark vermilion, the flowers having a dark orange-coloured eye, being also sweetly, but not strongly scented. Compared with the following variety, it is of slower growth.

R. SPECIOSA MAJOR varies considerably from the type, so much so that I have often thought it ought to be considered a distinct species. The growth is more scandent, the foliage more bluntly ovate, whilst in colour it is paler, but generally somewhat larger. The colour is more of an orange-red, whilst the flowers have a better defined yellowish eye; the petals are broader, whilst the individual blossoms, as also the trusses, are larger. In some cases this variety has the reputation of being a shy-flowering plant, but this is altogether a matter of culture and no fault of the plant itself. Some of our nurserymen class it as a climber or pillar plant, but I have always had the best success with it as a bush.

R. GRATISSIMA (*Rogiera*) is a slower-growing plant than either of the preceding, and is usually met with, consequently, in much smaller plants. It has pale pinkish blossoms (sweetly scented), the buds more deeply tinted; whilst the trusses I have frequently compared to those of a *Laurustinus* in character. It is a decidedly distinct plant, and one that may be grown in a somewhat lower temperature than either of the first two kinds. The foliage is larger and more glossy than that of most kinds, whilst the wood is stiffer, with less disposition for branching out. In a cut state it makes a charming button-hole or spray.

CULTURE.

More frequently than not those who grow *Rondeletias* err in not using the knife more

freely. Take *R. speciosa* major, for instance; when once the groundwork of a good plant has been secured the plants should be pruned into the hard wood early every spring; this is far better than merely tipping the shoots, back breaks being thereby secured from the well-ripened growth. These grow away in a more robust manner with the prospect of every one flowering; whereas the attenuated shoots will not do so. By using the knife freely there is far less need of sticks. I have, in fact, shown large specimens without any staking at all, quite a contrast being thus afforded to plants trained upon trellises, more as if they were climbers. Supposing a plant of the major variety to be required in flower from about the first of September, it should be stopped simultaneously all over about the middle of May or a little sooner where the fires are not kept going in the summer. This stopping produces an even break, each young shoot invariably flowering nearly about the same time; whereas, if not stopped at all, the flower-trusses are produced irregularly. *R. speciosa* itself will flower under the same treatment a few weeks sooner. Those who once adopt the stopping process will readily see the advantage for themselves, any of the wood behind the summer pinching making well-ripened shoots for pruning back to the following season. When the plants are in active growth and the roots healthy, and with the pots full of them, they will take almost any amount of water short of soddening them, and that in spite of the roots being very fine and delicate. Towards the flowering period my practice has been to water occasionally with weak liquid manure water; this I found to be a great advantage. As the plants go out of flower, the watering should be gradually stopped. This will cause the growth to ripen and the foliage to fall, but never mind that, for although classed as evergreen stove plants, it is far better to treat them as deciduous ones. They will bear to be dried far better than *Ixoras*. Repotting need not be done oftener than each other year, using the best of peat only, as for *Ericas*, with plenty of sand and drainage, potting also as firmly as possible. The temperature of the average stove will suit them well; shading, however, should not be for one moment entertained.

GROWER.

THE ALBERT NURSERIES, PECKHAM RYE.

In this nursery, which some four years ago was wild common land, there are now some seventeen houses, each 100 feet long, besides many pits both heated and unheated, all filled to overflowing with a choice and varied assortment of plants. In the Palm house is a large stock of handsome specimen *Areca lutescens* and the useful *Livistona borbonica*. *Kentias* are also largely grown, the favourites being *K. Belmoreana*, *K. Fosteriana*, and *K. canterburyana*, which are represented in all sizes from quite young seedlings up to specimens 8 feet and 10 feet high. The small-growing *Cocos Weddelliana* was also to be seen in thousands and of all sizes. I saw also a large batch of *Geonoma gracilis*, which to me is a more attractive plant than the *Cocos*. There was also a large batch of *G. Seemanni*, which if it turns out to be the true plant will be interesting, but even should it prove to be *G. Martiana*, which is often sold for *G. Seemanni*, it will be valuable. There were also large quantities of the useful *Phoenix rupicola*, which only a few years ago was such a rare species, it and *P. tenuis* being about the most useful of the Date Palms for decoration. Many other species of Palms were largely grown, all being in splendid condition. In other houses I observed attention had been turned to *Cycas revoluta*, and I was pleased to see this, for here I

noted the usefulness and the great beauty of these young plants. Another house was filled with beautiful small examples of *Dracena Lindenii*, which is considered one of the brightest and most effective plants in commerce, it being rich green in the centre of the leaf, which is bordered by a rich creamy yellow variegation on the outside. Other kinds of *Dracenas* are largely grown, as well as many of the best-marked *Crotons*, the narrow-leaved kinds being the favourites. *Aspidistras* and *Asparagus plumosus* are also very largely grown, and no more useful plants can be named. *Araucaria excelsa* in variety and in various sizes are to be seen; so also is *Aralia Sieboldii*, now largely in demand for winter decoration. Here also are whole houses filled with Ferns, the object being to grow only the most popular kinds, which are being added to the collection from time to time as opportunity offers. *Gardenias*, too, are largely grown, many hundreds being here in useful size and ready to flower. *Azaleas*, too, are well done, but a few only remained in bloom. *Lily of the Valley* is also grown in quantity, some very fine even pots I saw being the last of some 60,000 in the beginning of the season. *Lilium Harrisii* is also largely grown. Messrs. Shuttleworth and Co. have a branch nursery at Fleet, Hants, where the hardy plants, shrubs, &c., are grown. W. H. GOWER.

Pot Mignonette.—I cannot agree with Mr. Tallack (p. 242) in his remark that "fancy-trained specimen plants, such as standards or trellis-trained, are of very little use for cutting," because I obtain the finest spikes from standard-grown plants. I grow *Mignonette* rather largely for winter flowering, commencing to cut the spikes early in November, continuing up to the middle of April or even later than that. I grow single plants in 5-inch pots and in various sizes up to 10 inches, and it is from the last I get the best results. From a standard-trained plant I can cut at once were it necessary between 200 and 300 spikes, all fully developed. By no other method can the same results be achieved. For conservatory decoration plants like these are highly valued. I fear Mr. Tallack is far too sensitive in the matter of being afraid to give the young plants a check by transferring them to larger pots. The finest plants that I ever had were from seedlings raised in the open border, dug up carefully without any soil whatever being attached to the roots, potted into small pots, and kept shaded for a few days. Although I sow three or four seeds in 2½-inch pots, removing all but the strongest when an inch or so high, I do not scruple to use some of those taken from the pots if the seed should have germinated indifferently and there is a likelihood of a scarcity.—E. M.

Eupatorium ianthinum is a splendid plant for flowering in the greenhouse at this season of the year. It is not difficult to grow and makes a fine bold subject; the leaves, large, deep green in colour, are an effective contrast to the bold heads of soft mauve-coloured flowers. Several specimens have been in bloom for some time past in the greenhouse at Kew, and few things could produce a finer effect. There is great robustness of character in this species, and the wonder is that it is not grown more in all gardens where handsome plants are desired for groups or for decoration, as the flowers remain in beauty over a comparatively long season.

Eupatoriums with coloured flowers.—As a rule in gardens the generic name of *Eupatorium* is applied to those species which produce white blossoms, such as *E. riparium* and *E. Weinmannianum*, the coloured kinds—*atro-rubens* and *ianthinum*—being generally included in the genus *Hebeclinium*, though, according to our botanical authorities, they are true *Eupatoriums*. From a garden point of view alone, however, they are quite distinct, and form very useful subjects for greenhouse decoration at this season. Both are sturdy growing plants like enlarged *Ageratums*, and flower freely when about 18 inches high. The

flowers of *E. atro-rubens*, which are borne in large widely-branched heads, are of a purplish lilac colour; while the stalks and young shoots are thickly covered with reddish hairs, which give to them quite a velvety appearance. In the second species, *E. ianthinum*, the flowers are of a pale lavender tint, while the coloured hairs are also wanting. These *Eupatoriums* are of very easy propagation and culture, the principal attention needed being to encourage short sturdy growth and to take care that the plants do not suffer from want of water, especially as the pots get full of roots, for the foliage is quickly affected thereby. Being liberal feeders, liquid manure occasionally will be of service.—H. P.

DIFFERENT SECTIONS OF PELARGONIUMS

BESIDES the zonal and Ivy-leaved classes of *Pelargoniums*, various names are applied to different groups of the others; thus we read of show, regal, fancy, spotted, French, and decorative *Pelargoniums*. This last term is of more recent date than any of the others, and included in it are some of the most free-flowering and useful varieties that we have, many of which are very popular with the market growers. These various sections are not divided by any hard and fast line, for a perusal of the different nurserymen's catalogues will show that opinions are by no means unanimous as to the heading under which some of the varieties must be classed. As a general system of intercrossing is carried on by those who make a speciality of raising seedling *Pelargoniums*, it will readily be understood that it is impossible to group the progeny under any particular head. The easiest to classify is that portion known as fancy *Pelargoniums*. They are characterised by weaker growth, a more tender constitution, and smaller flowers, which are, however, borne in the greatest profusion. Ladies' *Pelargoniums* is a title occasionally bestowed upon them. Show *Pelargoniums* include among their number the brightest and finest flowers of the whole group. The flowers of these are rounder than most of the others, with the edges of the petals smooth. The upper petals of these show varieties are blotched with a deep colour, often nearly black, and frequently to such an extent that they are almost entirely of that tint. The three lower petals are without spots or blotches, while in many cases the flower has a large white eye or centre, often shot with violet. While the individual blooms of the best show varieties are very large and highly coloured, they are as a rule borne but few in a truss, and the plants are of weak constitution, owing to the system of continually intercrossing which has been followed for generations. This is the reason that show varieties are not popular with the market grower, though a few kinds are grown, but the bulk of those that make their appearance in Covent Garden Market belong to the decorative class. The term regal *Pelargoniums* was first applied to the large massive flowers with an unusual number of petals, of which Captain Raikes, Queen Victoria, and Beauty of Oxon were the earliest examples. Many varieties are, however, now grouped under the head of regal, to the flowers of which such a description would by no means apply. Many years ago we used to have considerable numbers of new *Pelargoniums* sent to this country from France, several of which were characterised by a good, sturdy, free-flowering habit, but with blooms that did not conform to our show flowers. In many of these the edges of the petals were crimped and undulated, notably in Dr. André, which a generation ago was very popular, and may be still occasionally seen. This group finally became known as French *Pelargoniums*; then after a time those on the look out for novelties selected therefrom the flowers with a clearly-defined blotch on each petal and grouped them under the heading of spotted *Pelargoniums*. From the above it will be seen that it is quite impossible to classify all the *Pelargoniums* under these various heads, and a visit to some of the summer exhibitions will show that widely different views exist on

this point. In grouping the varieties of *Pelargoniums* no mistake need be made with regard to the fancies, as they form a class quite by themselves. Then the shows as a body are by no means difficult to classify, while the regal, spotted, French, and decorative varieties might with advantage all be grouped under this latter heading, and a good deal of confusion thus be avoided. H. P.

CAMELLIAS AT WALTHAM CROSS.

THE Camellias are very fine this year in the nursery of Messrs. Wm. Paul and Son, Waltham Cross, and a few notes may well be made of some of the most beautiful varieties. They are represented by large species smothered in flower. It will be remembered that The Duchess has received an award of merit from the Royal Horticultural Society, the flowers of a charming rose pink colour and of excellent shape—a distinct and beautiful acquisition. And, again, in the variety Beauty of Waltham we get also a fine addition, the flowers being of very distinct shape and of a flesh colour, which deepens to a pink shade at the base of the bold petals. The Camellia seems to have fallen from its once high estate as a flower for decoration, and one reason urged against it is its formality. But when a good selection is made many kinds will be included that bear flowers the reverse of formal, but free, and altogether delightful. Comtesse d'Hainault is a charming flower, perfectly double, but not conspicuously stiff, the colour soft rose; also worth mentioning is L'Avenir, which has a rose-coloured flower of distinct character, one of the finest of all the Camellias. Excellent specimens may be seen of the splendid crimson-coloured Mathotiana, which is a bold, free, and handsome type, quite one of the best for freedom and colour. Remarkably fine is the variety named Comte de Betti, which has very large rose-coloured flowers of a taking character, and those who note the Camellias at Waltham Cross will not pass by such kinds as Adelina Benvenuti, which is flaked with crimson on a flesh-coloured ground; the popular Beali, Bonomiana, white, flaked with crimson; C. H. Hovey, a splendid American kind, the flowers very large and deep crimson in colour; C. M. Hovey, scarlet; Conspicua, rose, the flowers semi-double, and showy; Donckelaari, crimson, with white flakes; and the familiar Alba plena, the most useful of all. Marchioness of Exeter, the flowers rose and very large, a beautiful variety; M. d'Offoy, rose-pink, a very delicate shade of colour; Cup of Beauty, blush, with crimson flakes; and Lady Hume's Blush may also be mentioned. The collection comprises nearly 200 varieties, and the variability in form and colour of the flowers is very striking, yet for a small selection considerable divergence of character can be got without a long list of varieties.

Azalea Baron Nathaniel de Rothschild.

—Regarding many of our popular classes of plants such as *Pelargoniums*, *Fuchsias*, and *Chrysanthemums*, as well as *Azaleas*, it may be safely said that some varieties differ from each other in little else but name; therefore any one that stands out distinctly from all its associates is worthy of an especial note. Such an one is the *Azalea* above mentioned, the flowers of which are large, double, and of a kind of violet-purple hue, difficult to describe, and in fact more effective than might be imagined from the colour here given. Where a number of *Azaleas* are in bloom together this is one of the varieties that stands out very noticeable from the rest of its fellows. It is of good constitution and desirable habit. This *Azalea* was awarded a first-class certificate by the Royal Horticultural Society in the summer of 1883, at which time it was almost new.—H. P.

Golden-leaved Caladiums.—With the return of spring the various *Caladiums* that have been dormant throughout the winter start rapidly into growth, and just as the earliest leaves are developed the prominent characteristics of the dif-

ferent varieties are more pronounced than at any other season, so that in making a selection the present is a very suitable time for the purpose. The golden-leaved varieties are but few in number, yet they stand out very conspicuous from all the others by reason of their colouring. They have been in commerce now for over twenty years, yet they are still very uncommon, and realise nearly as high a price as they did at that time. There are, as far as I know, five varieties belonging to this group, viz., Golden Queen, the entire leaf of which is of a pale golden yellow; Princess of Wales, rather brighter yellow than the last, with a few small blotches of red; Prince of Wales, of much the same colour as the preceding, but with the centre of the leaf bright red, dotted over with occasional transparent white blotches; Princess Royal and Princess Teck, both of which have golden leaves with a bright crimson centre, but the ground colour of the last is a little richer than in the other. These golden-leaved forms of *Caladium* are by no means so robust as many other varieties, and consequently to have them in good condition they need rather more care than the stronger growing kinds. A little extra attention in their culture is, however, well repaid, as a few good plants of any of the above varieties are particularly striking when associated with the other forms.—H. P.

THE SHADING OF PLANT HOUSES.

THE OBJECT OF SHADING.

IN any instance this should be well thought out and be carefully acted upon afterwards. More frequently than not the amount of shading employed is far in excess of what is really needed. When this is the case, it must be apparent to any thoughtful cultivator that the plants thereby suffer rather than derive actual benefit. I am fully convinced that it would be far better to dispense with shading, as it is generally understood and acted upon, than to allow this excess to continue. Those who have not experimented with light shading are strongly recommended to do so. In shading plant houses of any kind, all that is actually needed is to scatter or break up, so to speak, the rays of the sun from injuring the plants in the way usually termed scalding. It does not require a thick shade to do this; in fact, it is remarkable what a light shade will accomplish in this way. It frequently happens that the quality of the glass is not by any means what it actually should be. When it is of inferior quality, with spots in it, it is not fit for glazing any kind of houses. These spots produce lenses in the glass, and these, when focussed upon the foliage, produce injury or burns. I have no doubt that many besides myself have noted that these burns are often in a line. Take, for instance, a Palm leaf that has been thus injured. There will possibly be several scalds or burns in a line with each other. These burns are not caused simultaneously, but proceed one after another in accord with the movement of the earth in its relation with the sun, and all proceed from one and the same spot in the glass. The best mode of procedure in such cases is to trace out, if possible, the spots in the glass and touch them with paint. This will prevent future injury as long as the paint adheres to the glass, which will usually be the case for a few years at the least. This is a far better mode to adopt than that of covering with heavy or dense permanent shading, or even of using blinds injudiciously. It is a mistake to be carried away with the idea that because a few scalds have taken place, therefore shading is absolutely essential to prevent it; nothing of the sort is, in some cases, needed other than that just advised. Many instances could be quoted where no shading is used—at the Crystal Palace and Kew Gardens as places of public interest, as well as in nurseries and private gardens. If I remember rightly, Messrs. J. Veitch and Sons do not shade either their Tree Ferns or some of their fine-foliaged plants, nor is the large conservatory at Gunners-

bury Park shaded where Tree Ferns and Palms are the leading features.

METHODS.

As the object of shading is to prevent injury mainly by scalding or burning, it is far better to investigate each individual case thoroughly before having recourse to any kind of shading material. In some cases (and that very many) all that is really necessary may be easily accomplished by training climbers upon the roofs, inside, of course; this need not be done at all thickly or in a formal manner. Sufficient shade would thereby be secured for a large number of plants, each case being regulated according to the plants grown underneath the climbers. This is a capital plan when an awkward roof has to be dealt with upon which it is both difficult to fix either roller blinds or permanent ones. The arrangement of the plants as to their special requirements in the way of shading wants due consideration. Ferns, for instance, will thrive well with far less shading than is usually accorded them, speaking generally. The smaller forms of the *Adiantums*, on the whole, with some also of the larger sorts, as *A. Farleyense*, need no shade, or but the very lightest that can be used. On the other hand, there are a few kinds, as *A. trapeziforme* and *A. cardiochlanum*, which thrive much better under a heavier shading; therefore group the latter together and the former also, and act accordingly. Amongst stove plants the same arrangement holds good. *Crotons* luxuriate in sunshine, *Dracenas* require but little shading, but *Marantas* and *Alocasias* with *Anthuriums* and *Caladiums* all need the shading to be heavier. Orchid growers, methinks, frequently commit an error in applying too much shade; probably we should hear less of the spot in East and West Indian Orchids if less shade were more the rule. I have a suspicion that this spot or fungoid growth upon such Orchids as the *Aerides* is caused through excess of shade brought about by excess of moisture, which in a stove temperature is concurrent one with the other. Take Cape and New Holland plants as examples from the greenhouse; all the shade that these require is just whilst the plants are in full flower so as to prolong their beauty somewhat longer. In such an instance to apply the shading whilst the buds or trusses are developing means paler coloured blossoms with far less substance also. And to retain it after the flowers are faded is prejudicial to the young growth which quickly follows the flowers in nearly every case. The evil of too much shading is probably more apparent on the whole in the culture of greenhouse plants than in any others. It is simply ruinous to the hard-wooded plants of the sections just quoted. Soft-wooded plants as *Pelargoniums* and *Fuchsias*, with those of annual growth as *Primulas* and *Cinerarias*, should only be shaded whilst they are in full flower, and then even any excess is worse than none at all.

MATERIALS.

During the past few years there has undoubtedly been a great improvement in the materials specially manufactured for the shading of plant houses. I can well remember the time when coarse canvas was used, as well as other dense kinds totally unfit for the purposes for which they were intended. I have during the past twenty-five years tried many kinds, but I have never found anything to approach No. 3 netting or shading. This is the same as many use for protection against spring frosts upon fruit trees. I have found it to be ample for all stove plants, giving the maximum of light with just sufficient density to prevent any semblance of burning. When left up all the winter, the blinds will remain in good condition for two years, but if taken down in the autumn they will last three seasons with care. I note in a well-known catalogue to which I have just referred that the foregoing is termed hothouse netting No. 3, the size being 30 yards long by 54 inches wide. Another of which a sample is now lying on my desk is termed No. 4, being of the same kind of make, but with a smaller and finer mesh and lighter in texture; this should be ample for all kinds of the tenderest plants. Another

called No. 5 is too dense, its only practical utility being to keep houses cool, as in the case of cool Orchids. This latter, and yet another called No. 6, still denser, are frequently used for orchids generally, but in my opinion the use of either is a mistake, save in the instance just quoted, whilst at the same time they are dearer. The various kinds of tiffany do not appear to be used so much now as in past years; still, they are very light and last fairly well. Tiffany is, I consider, preferable to scrim, but neither are so good all round as No. 3 netting. Of this latter I cannot give any more definite name. It is known and catalogued as such, but with no maker's name attached. The green scrim and other kinds dressed by the Willesden process as rot-proof make very good blinds and last well, but I do not like the colour, nor do I think their use will be general. I have given them a trial, but am not disposed to do so again, unless it be as inside blinds for the sides of conservatories fixed upon spring rollers. For this particular purpose I think them very good indeed, being far better than linen or other dense material. The foregoing shadings are all much to be preferred upon rollers as compared with making them fixtures for the summer months. There is always the contingency of a dull period of at least a few days at any time, and at such times the shade imparted cannot but be weakening to the plants. In the spring, for instance, the shading is only needed for an hour or two with a gradual increase, and the same is the case in the autumn, save that it is then a decrease instead. If the shading be fixed early, say the middle of the month of March, there is always the possibility of a return to dull weather, and in the autumn it is more often than not left on too long. On one occasion I had charge of a conservatory with upon the roof *Louvre* shading, made of thin strips of wood in the way somewhat of Venetian blinds, but anything more unfit or irrational could not well be devised. The result of its use was a weakened and attenuated growth, the plants showing a marked improvement immediately it was removed. As to the arrangement of the roller blinds, I do not think even now that those with a wooden wheel on the outside end of each can be surpassed when they hang truly, so as to work regularly. In a range this cannot, of course, be done for any but an outside house, unless the adjoining one is not shaded at all. Another good system with roller blinds is to fix them upon a light trellis-work, so that there is a space of about 10 inches between the glass and the blinds; this allows of a free current of air, whilst it also enables one to use a lighter material also than he would otherwise do, for the closer the blinds lie upon the glass the less is the effect produced by their use. Protection boxes for the blinds are very good, and should be provided wherever possible.

Shading with whitening or lime is not only a bad method, but a perfectly hideous one, especially where the mixture is daubed on in a haphazard fashion. Lime should never be used in fact, whitening of the two being much the better material. When whitening is chosen, it should be mixed with size to make it adhere, 3 lbs. of the former to 1 lb. of the latter, with sufficient water to reduce it to about the consistency of paint or a little thinner. The size has, of course, to be dissolved by boiling it in water. When this is applied, it should be put on as thinly as possible and be dappled over with a painter's dusting brush. Mixtures as sold for the same purpose are also good of their kinds, being easily mixed in water. Of the two colours of these, I most decidedly prefer the white to the green. In dealing with the latter, there is the danger of using it too heavily, much more so, I think, than with the white. In no case, however, would I use either where blinds could be employed. Even upon pits these latter can be used, being rolled horizontally upon small wooden rollers, one on either end. Rough plate glass is, I consider, well worthy of extended use; it may cost more, but in most cases the after expense of blinds would be reduced to a minimum.

PLANTSMAN.

CINERARIAS AT FARNHAM ROYAL.

VISITORS to the London shows, the meetings of the Royal Horticultural Society in particular, know that in the month of March and early in April an exhibit of *Cinerarias* is usually seen from the nursery of Messrs. J. James and Son, of Farnham Royal, near Slough. The plants represent a splendid type of the florist's *Cineraria*, and illustrate the good work that has been accomplished by the hybridist from the time he commenced operations with the species. Several well-built span-roofed houses are devoted to the *Cinerarias* at Farnham Royal, and at this season they are in full perfection, dense blocks of colour that gratify with their brightness and rich variety of shades from purest white to deep purple, a glorious series, unequalled it is safe to say for depth, clearness, and freedom from objectionable tones often disfiguring many otherwise praiseworthy strains. It is not richness and variety of colouring that constitute the chief charms of the Farnham Royal *Cinerarias*, as the plants are of dwarf, yet free, compact habit, and bear a head of flowers, each of which is of great breadth and massiveness, the petals smooth, and forming a striking flower.

In one house the several colours are arranged together, and the effect is remarkably rich. A very beautiful variety is that which has white flowers, and we may remark here that no distinctive names are given—a wise plan, perhaps, although the majority of the many kinds are worth some distinctive title. The white type is free from colour except the violet centre, which adds much to its beauty, bringing out the purity of the broad robust petals. Against this white type is a batch of violet-purple, a splendid colour, intense and varying somewhat, but never going into dead, dull magenta-purple shades, very unnatural and offensive to the eye. Deep purple flowers, set off with a crimson centre-line, form a rich contrast of colour, and in every instance the plants are of the same fine dwarf habit, this trait being characteristic of the entire strain. Peculiarly beautiful is the rose coloured variety, bright, effective, and quite self, without allied shades. We have never seen a more pleasing colour, brilliant, yet as pure as it is possible to get such a tone. Each year we think this strain gets more interesting and in every way finer. This is not difficult to understand, as new departures in colour are seized upon, and all that fail to arrive at a certain standard of perfection are weeded out to prevent unsatisfactory colours interfering with the strain. It appears difficult to get much finer results than are seen this year, but we suppose everything is not yet as perfect as could be wished. A trained eye may perhaps discover imperfections to be remedied in years to come. Adjoining the batch of rose-coloured flowers is a series of plants of a deeper shade, then crimson, a superb colour for depth and richness, and rich reddish purple. A lovely *Cineraria* is the blue, or shades of blue, the clear, delightful colour set off with a white centre ring, but the shades of blue besides this distinctive kind are numerous, always bright and decided. One is an intense Oxford blue, the base of the segments white; then one gets a charming series—in fact it would take much time to select all the more distinct varieties. The great point is that the colours, whatever they be, are invariably good, decided, and telling, and the plants generally preserve a distinctive habit.

One large house is devoted entirely to what we may call mixed plants, and here one sees the great and beautiful variety of colours in the flowers, all the many shades represented—a brilliant picture of blue, rose, purple, violet, white, &c. All the stock is grown for seed, and we may trace in many gardens the characteristic features of the Farnham Royal *Cinerarias*. It may be worth mentioning that the seed is sown at the end of July, a good time to get the plants into bloom at this season of the year, when the greenhouse should be gay with many flowers.

Not only is the *Cineraria* grown here with great success, but the *Calceolaria* is equally fine, and will soon be in full beauty if the present summer

weather continues. Persian Cyclamens and other florists' flowers are of much interest, as we have before had occasion to remark in THE GARDEN.

NOTES OF THE WEEK.

Muscari botryoides pallens is a pleasing variety of this familiar Grape Hyacinth. The flower-heads are smaller than those of the type, but the colour is quite distinct, very delicate blue, the upper portion white. A few flowers of it are not of much account, but a good mass is delightful. We picked it out of a large collection as the softest and most distinct in colour.

The Trumpet Honeysuckle of North America (*Lonicera sempervirens*) will succeed well in the garden if the soil is light and the position not too cold, but a large plant in full bloom a few days ago in a house at Wycombe Abbey reminded us of its usefulness for indoors. The specimen was in full bloom, the flowers, freely produced, making a gay show of orange-scarlet colour.

Epiphyllum Makoyanum is one of the most useful of the Epiphyllums. A plant in the stove at Kew is well worth a note, every shoot bearing its burden of flowers, the segments orange-scarlet, narrow, pointed, and making a brilliant show of colour. In every stove this type should be grown for its freedom, brilliancy of colouring and effectiveness.

Acocanthera or **Toxicophlœa spectabilis**, popularly known as the Winter Sweet, although well known by name, is one of those things that have been pushed aside for less worthy novelties. In the temperate house at Kew it may now be seen in great beauty, the specimen being planted out and crowded with the dense clusters of white flowers, which are very fragrant. It must be frequently stopped to preserve its bushy character, and it is as a bush that we care most for this distinct and handsome plant.

The blue Polyanthus.—In reply to "A. D.," I beg to state I fertilised the blue Polyanthus with pollen from an offspring of Primrose Scott Wilson. My friend, Mr. Geo. F. Wilson, gave me a plant of his Scott Wilson about ten years ago, and I at once had the idea that a bright blue Polyanthus would be more desirable than a blue Primrose. As a result of this, combined with careful selection, I have now a bright blue Polyanthus in flower in my garden.—MAX LEICHTLIN, *Baden-Baden*.

Spring Star Flower (*Triteleia uniflora*) is common enough in gardens, but not grown well as a rule. It is seldom one sees a good mass of it, and unless the plant is thus used little idea can be got of its effectiveness. We were in a large garden recently where it carpeted fair-sized beds, forming a perfect mat of leafage and flowers, which remain in beauty many weeks. It increases quickly, and is in every way a thoroughly fine garden bulbous plant for the spring. The delicately coloured flowers vary in shade and stand up boldly from the leafage.

Iris Helenæ or Mariæ.—This extremely pretty Iris, quite new to me, was sent to me last autumn by Mynheer Krelage, of Haarlem, and flowered nicely in a pot in my greenhouse this spring, though it is doubtless quite hardy. Its flowers are of a purple self colour, with a rich velvety blotch in the centre of the fall or lip of the flower. Its foliage is very narrow and curved like a scimitar. It has not yet, I believe, been figured anywhere. Mr. Baker informs me that its introducer has now changed its name to Mariæ.—W. E. GUMBLETON.

Bulbous flowers in the parks.—The bulbous flowers are not, we think, so fine as usual. Hyacinths, Daffodils, and Tulips are stunted through the long spell of summer-like weather, and they quickly lost freshness and beauty. The Hyacinths in many instances are quite past their best, and

the Daffodils lasted a comparatively brief season. We are pleased to see that a bold style of planting is adopted to get masses of colour, each variety being planted by itself or with a kind of similar shade. This is far better than mixtures, which are seldom satisfactory.

Snake's-head Fritillary.—*Fritillaria Meleagris* is planted in a distinct bed on the turf in the Royal Gardens, Kew, and makes a charming variation from the Daffodils and other familiar garden bulbs. This bed of Fritillary presents an interesting variety of colour from creamy white to beautifully chequered forms, a series of quaint and distinct tones. On the bulb border near the herbaceous ground several Fritillaries, as *F. armena*, *F. pallidiflora*, *F. latifolia*, *F. minor*, and *F. Meleagris alba*, are in bloom, or will be so shortly. Those who care for this class of bulb will be interested in the Kew collection.

Veronica nummularia.—One of the neatest and prettiest plants now in flower on the elevated ledges of the stone belis is *V. nummularia* of Govan. It seems to be exclusively Pyrenean and to inhabit high elevations. It does not run offensively, but gradually grows into a compact evergreen mass close to the ground, covered from the end of March onwards with dense tufts of lavender-blue flowers. It was once in nurseries as *V. satereioides*, but as it did not answer the description of that plant, I sent a specimen to Kew, where they kindly gave me the correct name. It is well worth the attention of growers of alpinæ.—C. WOLLEY DOD, *Edge Hall*.

Talipa Greigi is the finest of the species of Tulips in flower now. A clump of it on the border is a brilliant mass of scarlet, the flowers large, held up boldly, the leaves distinctly barred with chocolate. A sunny spot and light soil suit this Turkestan Tulip, and one sometimes gets interesting departures in colour from that of the type. We have seen distinct names given to them, but this is a mistake. It is very fine at present in the Royal Gardens, Kew, where also *T. Kaufmanniana* is in full bloom, the flowers large, satiny white, striped and flushed with scarlet—a brilliant contrast. *T. præcox*, *T. sylvestris*, *T. florentina*, *T. undulatifolia*, and many other forms are also good.

Pyrus japonica at Dropmore is worth a note. There is a good hedge of it in what is known as the Dutch garden, and the brilliantly coloured flowers make a pleasant show. The clipping back is done in March, and the result is a dense and handsome hedge. In one warm spot there is a specimen of this *Pyrus* trained to a sunny fence, which it has covered to a great extent, the whole a sheet of intense crimson, as brilliant as anything one could conceive amongst flowers. Then it makes a fine spreading bush, as in the Royal Horticultural Society's gardens at Chiswick, where a plant at the entrance to the gardens is now in full beauty.

The Yulan (*Magnolia conspicua*) is flowering in many gardens and is a feature of interest just now at Dropmore, Kew, Syon House, Gunnersbury House, &c. When backed by dense green leafage, the flowers are displayed to full perfection and protected from keen winds and early frosts. The brilliant sunshine of the past few weeks has expanded the flowers quickly, as it has the Daffodils and those of many other things. An illustration of the Gunnersbury House specimen was given in THE GARDEN, July 9, 1892 (p. 21). At Kew *M. conspicua* is represented by a good specimen smothered with the large Lily-like flowers, which, curious to say, find little sale in the London markets. *M. stellata*, or *M. Halleana*, as it is sometimes called, is also in full bloom in the open at Kew. Few trees have a finer effect than a well-grown Yulan smothered in bloom in the early spring season.

A beautiful flower is *Gladiolus sulphureus*, of which a coloured plate was given in THE GARDEN, July 19, 1890. It is a form of *G. tristis*, and one of the finest of what is known as the narrow-leaved group, which includes the well-

known *G. Colvillei* The Bride. If the flowers of *G. sulphureus*, now freely in bloom in the Cape house at Kew, are not brilliant in colour, they smell sweetly and are of quiet beauty, the colour very pale lemon-yellow or creamy white. The type varies in its colouring, and in the description accompanying the coloured plate it is mentioned that they are said to vary from pure white to almost purple, but nothing so startling in variation is to be seen amongst the Kew plants. *G. sulphureus* is one of the best of the forms of *G. tristis*, very elegant, not to say graceful, and bearing scapes about 2 feet high, the flowers large and softly coloured. A group of them is of much interest, and the plants require similar treatment to *Ixias* and *Sparaxis*. After the flowers have faded, transfer the plants to a frame, not shading, and keeping the soil dry for a space of two months. In October repot the bulbs, putting six bulbs into each $4\frac{1}{2}$ -inch pot.

From Burton Farm, Michigan.—We have had an unusually steady winter with nearly 100 days of sleighing, and now fresh Maple syrup and sugar are just coming on the market. Our State produces a large amount of these products, and the modern method of manufacture secures a very fine product. One of the features of our Michigan exhibit at World's Fair will be a lumber camp, a train of logs, and the largest load of logs ever drawn by two horses. I will try to secure for you a photograph of this last feature. The logs making up this load are 18 feet long, and are piled upon sleds manufactured for the purpose. The load is 35,000 feet and weighs something over 110 tons. The road over which it was drawn was built by freezing an ice foundation 4 feet in thickness, and strengthening the sides of the roadway by freezing buttresses. This seems like a great story, but it is true. We shall exhibit over sixty kinds of commercial timber, besides the shrubs and small trees valuable only for planting or for medicinal properties. We are beginning to do a good deal of spraying of fruit trees for mildew, scab, and various fungoid diseases, and I have just secured a barrel of copper sulphate to be used in this way. We are hoping by means of this kind to grow some of your finest Gooseberries which have thus far failed with us because of mildew. We shall probably have a very fine Peach crop in our State this year, as our most tender varieties have gone through the winter well. Our thermometer has not reached lower than 12° below zero (Fahr.), and Peaches will, if buds are well matured, stand 16°. I am afraid you will consider most of our machines for rapid wood-cutting expensive luxuries. In cutting thousands of cords this winter I have avoided them.—CHAS. W. GARFIELD.

Pasithea cœrulea.—This beautiful and little-known, though by no means new Chilian Asphodel, introduced to European gardens from South America so long ago as 1714 by R. P. Feuillée, astronomer and botanical collector for King Louis XIV. of France, but long lost to cultivation till re-introduced by Herr Max Leichtlin, of Baden-Baden, has been for some little time nicely in flower in my greenhouse. It is figured on plate 7249 of last year's volume of the *Botanical Magazine*, though, unless the colour of the flowers varies on different plants (on which point I have no knowledge), the representation of the colour of the flower on the plate referred to is not quite accurate or true to nature, as the alternate petals are represented as of a much lighter shade than the others; in fact, almost white; whereas on my plant all six are of one and the same shade of blue. The individual flowers are short-lived, each of them lasting about a day and a half, but they open in quick succession and are produced in considerable numbers on the loosely-branching bunch which heads the stem which rises from out a loosely growing tuft of grass-like foliage. According to some authorities, the bulbs are excellent food either boiled or roasted, and also make a pleasant soup.—W. E. GUMBLETON.

The English Flower Garden.—Design, Views and Plans. Third edition, revised, with many new illustrations. London: J. Murray, and through all booksellers.

FLOWER GARDEN.

A GARDEN AT BROADWAY.

HERE is a charming garden engraved from an oil painting by Mr. Alfred Parsons, in possession of the editor, and showing a border of summer flowers, mostly large annual Poppies, which have lately become so popular. It shows well a type of garden not uncommon in the country towns of England, and which are in design far more charming than many pretentiously laid out gardens.

Common sense and simplicity have some chance in these little gardens, which are not laid out by a man who comes with a regulation plan in his pocket to adapt to every situation. People do what they like, and in the end the result is much more artistic than the ordinary "first-class" garden, with its vases, steps, &c. There is no room for a small edition of the Crystal Palace gardens, fountains, &c., and so we get something that a man can draw, paint, and remember with pleasure. This garden, which we have not had the pleasure of seeing, is, we believe, in possession of Mr. Frank Millett, and is in a beautiful village in Worcestershire.

BASAL ROT IN DAFFODILS.

"I SEND you some bulbs of maximus and Ard-Righ which I planted in autumn; the flower is stunted and abortive, and the leaves are dead at the ends and have stopped growing. On examination the roots appear to have rotted away. Can you tell me the cause and the remedy?" This extract from a letter received lately sufficiently describes the condition in which many of the readers of THE GARDEN find an indefinite number of their trumpet Daffodils this spring. I will not repeat what has been said before on the subject, but will give the result of investigations and experiments made during the past twelve months.

Last July I wrote to THE GARDEN giving an account of different mixtures in which I was planting trial rows of Ard-Righ. I se-

lect this item from amongst trumpet Daffodils because of all the kinds commonly grown it seems most liable to basal rot. Though I have had affected bulbs examined by experts year after year, no definite mildew has been found upon them; still, I thought that anti-mildew treatment might be of some use, but

examined many bulbs for vermin; eel-worms, millipedes, root-lice, and such creatures are often present, but so sparingly, that I am convinced that they are not the cause of the rot.

A year or two ago Mr. Engleheart told me that he believed frost to be an important factor in originating the attack, and I have gradually come to the same conclusion. The long frost of last winter descended deep into the soil, and it would be interesting to know whether this basal rot is now more than usually prevalent. I find that deeply planted bulbs are less affected than those planted nearer the surface, and that bulbs planted in sheltered places suffer less than those more exposed. Whether exposure to full sun predisposes to the disease, or whether because such situations are more exposed to frost, I am beginning to avoid southern faces for Daffodils, as I find them do better where the ground slopes away from the sun. Formerly I believed that where bulbs were found in spring to be perishing for want of roots, no roots had been formed, and this is sometimes so; but a careful examination of the soil beneath the bulb often discloses new roots, apparently sound; they have rotted off close to the basal tunic of the bulb. So if the bulb is carefully dug up, no root is found attached to it.

My present belief, subject to further investigations, is that the basal tunic is the part of the Daffodil most susceptible of injury from frost. If this is subjected to a degree of frost, varying according to the kind of Daffodil, the rot is caused. The rest of the bulb continues comparatively sound, and continues to feed the leaves and flower-bud, which go on growing in spring until they

I am obliged to own that the result is altogether unsatisfactory. The same treatment was given in three different beds, and in each case those treated with sulphate of copper present a less unhealthy appearance than the others, but, nevertheless, they are not healthy, and I abandon the theory of any fungoid origin of the mischief. I have carefully ex-

can no longer live on the capital stored in the bulb; then the mischief shows. This basal rot is said to be unknown at Cork, where large breadths of Ard-Righ are grown, and probably frost never penetrates deep there. It is, I believe, unknown in the Isles of Scilly. It is quite unknown in my kinsman's garden at Bayonne, where Ard-



A garden at Broadway, England. Engraved for THE GARDEN from an oil painting by Alfred Parsons.

Righ and most of the English standard varieties are grown promiscuously. But I cannot suppose that frost is the only cause of it; it seems to be a progressive disease, taking sometimes two or three years quite to kill a bunch of Daffodils, and the weaker they get the more liable to harm they become. This is the reason why frequent transplanting and renovating the soil have always been considered the best preventive. Most growers will bear me out when I say that healthy bulbs of Ard-Righ imported from Ireland rarely show signs of rot the first year. I imported 100 purposely for experiment in autumn, 1891. These all seemed healthy when lifted and replanted in July, 1892, but now two-thirds of them have the rot. Of about two dozen sent me by Mr. Hartland in 1892, only two or three show any sign of disease. Thirty or forty bulbs forced last spring and planted out in summer are all entirely free, though not flowering. All the lots I have mentioned are planted in the same soil and the same surroundings.

I may further remark that last year in going round a Daffodil nursery where the beds were raised a few inches, with a rather sudden slope to the walk at the side, I observed that the outside rows next the walk were most obviously more affected than those further from the side. The same thing is to be seen now in this garden where the beds are raised, but not where they are level with the path. These raised edges would admit frost to the bulbs more easily. The rot seems to be quite as destructive here in light soils as in heavy, and the raising of beds above the ground level seems rather to favour the plague. In fact, anything which helps frost to penetrate to the bulbs seems to me to be bad for them.

It is not worth while to give a list of kinds which are especially liable to rot. Everyone who grows Daffodils knows that Ard-Righ is one of them. The kind called muticus, with its progeny, Emperor, Empress, Horsfieldi, bicolor, &c., are almost entirely exempt. So are most of the hybrids of poeticus. Strange to say, the worst visitation I ever had was amongst a lot of crosses between the common double Daffodil called Telamonius by dealers and the common wild Daffodil called the type of pseudo-Narcissus. I had several hundred of these from Mr. Engleheart, containing some very interesting intermediate forms, both single and double. Year after year their numbers diminished in spite of transplanting and other attentions, and in five years I think they have become quite extinct. C. WOLLEY DOD.

Edge Hall, Malpas.

Sparrows, Primroses, and Crocuses.—Why does the sparrow so destroy these flowers? I believe it is because of his idleness, thirst, and the available drop of dew or rain these flowers afford by their shape and pose. Who can doubt his power of finding out ways and means after watching how he obtains a drink in dry frosty weather from the overlap joint of the warm greenhouse top, where the condensed moisture oozes out in liquid form! And his cleverness in the same direction is to be seen in the fact that he

does not operate on other flowers that are close by and somewhat resemble the Crocuses and Primroses. For instance, almost entirely he lets the Polyanthuses alone. Why? Is it because these flowers do not hold themselves in position, like the Crocus and Primrose, facing the sky, so as to conveniently hold the drop of rain or collected dew? Certainly, the Crocus is closed at night, but still I find that the dew enters and settles in the tube. Then we have a sort of circumstantial evidence that birds rend these flowers to quench their thirst from the fact that we rarely or never find them torn when the weather is showery and the birds can drink from the spouts at the eaves of the house. Again, in one part of my garden there are tubs of water always full; in another part there is no water whatever. In both parts there are Primroses and Crocuses, but where there is available water, at which the birds are seen to drink hourly during dry weather, no flowers are damaged by them. It is just the opposite in the part of the garden where there is no water. Moral: Either destroy the sparrows or provide drinking troughs, and so preserve your flowers.—J. WOOD, *Woodville, Kirk-stall.*

Dog's-tooth Violets in the Grass.—The note on p. 270 calls attention to these that are indeed very uncommon in gardens. This cannot be from any difficulty attending their culture, but very likely in the average mixed border they have no chance at all, for their season above ground is a short one, and being so long beneath the surface there is much risk of their extermination by digging. In the Grass, however, *E. dens-canis* and its varieties appear quite capable of taking care of themselves, and in a cold heavy soil they have increased freely, and lately a most charming picture was a Grass slope adorned by these flowers. Where a few bulbs were put several years ago there must now be a considerable quantity, judging by the number of leaves and blooms. The clusters of marbled leafage look better in the Grass than upon the bare earth of the border, and when once established in this way a display of flowers is assured each year without the slightest cost or trouble.—A. H.

Daffodil Irish princes.—We have many Daffodils in the Grass, and the Tenby was recently noted for its fine qualities when so grown. Irish princes is really marvellous upon a Grass slope, for every year it never fails, and the flowers are so exceedingly profuse, that they actually touch one another. Large in size with immense trumpets they make a splendid display, and one marvels that all who have a bit of Grass do not grow them in this way. In old rich garden borders one sometimes sees a superabundance of leafage, but this group from the time it was first planted has increased, the display every succeeding year surpassing that of the previous one.—A. H.

Bulbs and herbaceous flowers.—Many persons plant bulbs along the front of the herbaceous borders with a view to brightening them up during the spring, but very few plant them amongst the regular occupants of the border. Presuming that a herbaceous border 6 feet or more wide was replanted last October, such a border will not require overhauling again for at least four years if proper attention is yearly paid to restricting the more rampant growing kinds to a reasonable limit. If the back and middle parts of the border are planted tolerably thickly with the various kinds of Narcissus, mixed in the middle with the taller growing Tulips, such as *Gesneriana*, the old-fashioned double border varieties, and a fair sprinkling of such showy sorts as *Keizer Kroon* and other suitable kinds, a brilliant display might be obtained at but a trifling cost. Hyacinths, Polyanthus Narcissus, Jonquils, Scillas, and Chionodoxa, with Crocus and Snowdrops, may be planted along the front. When the foliage begins to change its colour is a good time to take up, divide, and replant the clumps. The same may be said of the Tulips and Hyacinths. I plant all the bulbs that have been flowered in pots in such like quarters and on Grass, and the results are encouraging. By planting bulbs in the manner

described, space is not taken up for anything else, neither do they interfere with the regular occupants, as before the tall growing plants have grown much, the foliage of the bulbs has decayed. Much more in this way might be done to make those parts of the garden bright and cheerful during the early spring months.—E. M.

FLOWER GARDEN NOTES.

I CANNOT quite understand why "E. M.'s" (p. 231) autumn-planted border Carnations should have failed, unless, going in for a greater variety, he has acquired sorts that are naturally of weak constitution. As pointed out in previous notes, this is a very important point, and I have now weeded out many sorts that were good enough as flowers, but were sadly lacking in vigour of grass; they were in fact weakly both in habit and constitution, and as such had to be discarded. To make quite sure of the way autumn-planted layers have come through the winter, I looked carefully over a bed of 200 to-day, and find only three losses; so when one takes into consideration the fact that for three nights in January we registered nearly 30° of frost, there can be no mistaking the hardness of these particular varieties. They are Mrs. R. Hole, Raby, Mme. Roland, Ketton Rose, Countess of Paris, White Clove, and a couple of seedlings.

I am watching now daily the development of the flowers of a batch of new tufted Pansies. Those coming up to the required standard will be duly marked for propagation at the proper time. The requirements are a dwarf, compact habit, very free-flowering properties, and the greater part decided colours. I hope to report later on as to the merits of these new varieties. Plants remaining in nursery beds, whether they be those obtained from cuttings or by division, should be kept clean, and if the weather continues dry, it is a good plan to loosen the ground and give a good soaking of water before they are lifted.

The spring striking of bedding stuff is now nearly completed with the exception of another batch of variegated *Mesembryanthemum*, of which we are rather short. This is a grand carpet plant, perhaps the very best obtainable for scarlet and pink Begonias, and if the latter are a special feature in summer bedding arrangements, a good stock of this very free-growing trailer is almost indispensable. Early-struck *Verbenas*, *Lobelias*, *Petunias*, and *Ageratums* will now be ready for boxing, and the work can be seen to as time permits, taking out the tops to secure bushy plants. They may also be planted out in pits from which early Potatoes have been lifted. If they have to remain in the cutting pots, a little weak manure water will be necessary occasionally, so soon as a mass of roots is formed, to keep the growth healthy and vigorous. It may be well to remind those who still grow *Verbenas* rather largely that in the event of named varieties failing, good seedlings will often last well two or three seasons, and it is advisable to sow a pinch of seed every year, plant out the seedlings in well-prepared ground, and select and propagate from any specially good thing. No great number of varieties or shades of colour is required, really good things in purple, scarlet, and white making very handsome beds. I have been looking through the plantation of outdoor *Chrysanthemums* this week and find the death-rate not so heavy as anticipated. Where gaps exist, the ground is again prepared, and a few plants set aside at potting time to fill the vacancies. I was in the habit of changing the ground annually for this outdoor plantation, but a warm, snug corner is not always available, and having secured such a place and erected a stout skeleton frame, this is likely to remain the home of our outdoor plants. Those who are in the habit of growing *Chrysanthemums* in this way for autumn cutting will do well to note the superior hardness of some varieties. Why this should be so is a problem rather difficult of solution, but it is, nevertheless, a fact that whilst some sorts will remain sound and healthy for several years, others

will succumb to the first severe winter. Jules Lagravère, Abbé Passaglia, and Princess Beatrice have occupied their present quarters for the last five years.

The note last week drawing attention to the value of *Kalmia angustifolia* as a forcing shrub reminds one of the many things suitable for this purpose among shrubs, and the excellent use to which they can afterwards be put. Without reckoning the taller shrubs, we have besides the *Kalmias* the excellent white type of *Laurustinus*, *Andromedas*, *Hydrangea paniculata grandiflora*, *Ribes aureum*, double *Deutzia*, *Prunus* and *Staphylea colchica*. All these, hardy as they are, want a little protection for a time until the foliage hardens after they come from the greenhouse if they are to be utilised for outside planting, and if this is not likely to be performed until the following autumn, it will be found advisable to plant them out in beds of fairly good soil, giving a surface mulching of rather long manure. This will ensure their well-being until one is able to transfer them to permanent quarters, and is far better than letting them remain in pots. Interesting collections can be made of these shrubs in different parts of the pleasure ground, especially if that particular part of the garden wants brightening up a little. There are many old-fashioned pleasure grounds where there is an undue preponderance of green in the way of common *Rhododendrons* and *Laurels*, and if small breaks of these are removed as circumstances permit and a few groups of evergreen and deciduous flowering shrubs substituted, the effect is decidedly pleasing. Those who contemplate exhibiting collections of cut herbaceous perennials in summer and autumn will do well to select stools of the particular plants from whence the flowers are to be obtained, give them a little extra attention, and feed them perhaps later in the season, for strong bloom-stalks are, as a rule, responsible for proportionately strong, large trusses, spikes, or individual flowers. I am glad to find that the love for herbaceous flowers is increasing among cottagers, not merely for show purposes, but, to use their own words, "we want something to last in the garden and also that will furnish an occasional nosegay." One often hears remarks of this nature on a tour connected with judging "best-kept" gardens, which now in many cases include flower gardens.

E. BURRELL.

Claremont.

NOTES FROM ASIA MINOR.

SINCE my last notes on flowers in Asia Minor, which appeared in your August number, 1891, I have keenly prosecuted my researches for new bulbous plants with fairly satisfactory results. In the *Anemone blanda* line a fine all blue form from the mountains overlooking the Straits of Samos was a pleasant surprise. As I have sent bulbs of this variety to Kew and to many of my flower friends, I have no doubt its value will be established by better judges than myself. I may also remark that the large form I spoke of in 1891 as coming from the environs of Pergamos has in every way proved its superiority to that coming from the more southern regions. In your September number, 1892, "D. K.," in describing the various kinds of *Chionodoxas*, says *Tmolusi*, like the not-to-be-found *Forbesi*, is a stronger and larger form of *Luciliae*. Judging by this very erroneous description, "D. K." cannot possess this variety at all, as it is dwarf, both in bulb and foliage, more brilliantly coloured, and freer flowering, but not giving larger blooms than *Luciliae*. I shall be glad to send him a few to try, and am quite sure he will acknowledge the correct-

ness of what I state. *Chionodoxa Alleni* was found by one of my men while hunting for new *Snowdrops* for my friend Mr. Allen, and I therefore named it *Alleni* in his honour. I would call it a very large *gigantea*, the foliage and flowers being much more massive than in the latter variety. I measured some of the blooms and found them in many cases fully 2 inches across. Their great beauty lies not only in their size, but also in the fact that generally more than three flowers grow on one stem. I have counted up to ten. The colour is as pretty as in *gigantea*, but the variations are greater. The white, pink and bluish white forms are especially beautiful. As Mr. J. Wood very justly remarks in your December number, the bulbs sent to England are all collected in an unripe state, and therefore take more than one year's cultivation to recover their normal strength. I will send some blooms by post for you to see, and hope they will reach you sufficiently well preserved to enable you to form an idea of the value. The bulbs of *Alleni* are smaller and not reddish, as those of *gigantea*. Another find was *C. sardensis* with a smoke-coloured eye. This appears to be a cross between *Scilla bifolia* and *Chionodoxa sardensis*, the flower-scape and the very numerous blooms on it making me think at first it was a fine variety of *Scilla bifolia*, but on closer examination I perceived my mistake.

I also remark that "D. K." infers that *Luciliae* is the typical *Chionodoxa* here and that all the rest are varieties. My opinion, judging from the position in which the various kinds grow, is that all are the offshoots of *sardensis*. This form is to be found on every mountain range lying between Sardis and Pergamos; whereas the rest are disposed round the limits of its abode on only single ranges, or, as in the case of *gigantea*, on one lofty elevation alone.

The pretty *Narcissus serotinus* and *Eranthis cilicica* were also found by my men last year, but as they are so well known, it is needless my describing them.

In *Fritillaries* I am getting more puzzled daily. The number of varieties and the many variations in those varieties are really surprising. In *armena*, the yellow, red and green forms I have already spoken of in your columns, but last year one of my men brought down from one of the northern spurs of the Taurus a bell-shaped and larger variety, which really deserves a distinct name. Its peculiar characteristics may be summed up in its larger size and in its having often two flowers on each stem. The colour is a rich purple-brown on the outside and old gold on the inside of the petals. *Aurea* varies from pure bright to dark yellow, spotted brown. *Acropetalis* does not show variations in colour, but in size. Another from the Taurus above the town of Adalia resembles *Meleagris*, and may possibly prove to be *latifolia*. The variations in this variety are as numerous as in *armena*. Some plants rise to the height of 18 inches, with a large pendent flower, superior in size to any of the *Meleagris* I have grown. Others are dwarf, rarely reaching 6 inches, with

proportionately small flowers. The colour in all is chequered lilac and white. A specialist in this genus would, I am sure, find some interest in the many specimens I could send him.

The variations in *Snowdrops* I expect will prove interesting to Mr. Allen, who has kindly undertaken to cultivate and prove all I send him. When I first laid my observations before your readers, I thought that *Elwesi*, sometimes lanky, sometimes rounded, and sometimes short, but *Elwesi* still, would be the only variety found in our neighbourhood. Since then, however, from the island of Nicaria comes a form with green glossy leaves, from the Taurus above the town of Cesarea one with long, thin, whitish leaves and tiny bulbs, and from the Davros Dagh one with broad, but short leaves and with a globular, but small flower. But I need scarcely talk of these varieties, as Mr. Allen will be able next season to describe them from the plants growing in his garden.

In *Scillas*, the one kindly named *Whittalli* by Mr. Baker, of Kew, was found near the town of Elmali where *taurica* is said to grow, and which, by the by, I have searched for in vain for the last three years. The white eye and stamens of *Whittalli* and large blooms make it an interesting variety of *bifolia*. Another *bifolia* from the Sultan Dagh may worthily be distinguished by the additional title of *robusta* on account of its large flower-scape and massive foliage.

I hope the season just commencing will be richer in new finds than any of the past, as I have to a great extent perfected my system of collecting, and my men besides will cover more ground and will be aided by their greater experience. I must not forget to mention how much I owe to my many flower friends for the practical advice they have always been so willing to give, and basing myself on which I have been enabled to carry on more satisfactory researches. I have added to my old hobbies *Irises* and such alpine plants as are to be found, and the dried specimens sent to Kew will soon testify to the activity of my collectors.

EDWARD WHITTALL.

Smyrna, March 23, 1893.

Primula denticulata.—Hardy *Primulas* are rather numerous, but some are miffy and others scarce. One kind, however, is specially valuable, and that is *P. denticulata*. It is thoroughly hardy, not at all particular as to soil, and makes a great display for weeks in the early spring. A large group in a cold clayey soil is a perfect sheet of lovely colour, has been so for the past three weeks, and promises to continue as long. *P. rosea* near by is not nearly so happy, and certainly does not appear to be a kind for cold soil.

Carnations and the birds.—I never knew the small birds (sparrows chiefly) so destructive to the newly-planted *Carnations* as they are this season, as no matter what the variety, they strip them in a short time if not protected immediately after planting. The *Carnation* grower in the country is not so much troubled, at least such was my experience, as mice were the worst enemies, but near towns the birds are most troublesome. It would be interesting to know if there are the same depredations in the country districts, as when a large quantity is grown it is a serious matter to pro-

fect; besides it is not always possible, as if there are isolated clumps far apart, netting is out of the question, and cotton stranded over the plants seems useless. The large fleshy kinds are the worst sufferers; the birds delight in nipping off the leaves and strewing them round the base of the plants, repeating the operation till all are destroyed. I tried quassia, but it did not answer; on the other hand, I was afraid to use it very strong, as the tender growth is best left alone; having to battle against the cold winds, the application of strong doses of insecticide is not desirable. I should say the birds only attack the newly-planted Carnations; they do not touch them when exposed in the pots.—G. W. S.

THE GLADIOLUS IN 1892.

WHEN I write of the Gladiolus, I mean that section which will, I believe, recur to the mind of every gardener, the *gandavensis* section. There are several others no doubt—the early-flowering species and varieties, the so-called hardy sections, Lemoinei and Nanceanus, which as border kinds deserve a place in the garden, but which, especially the newer and more improved varieties, have a good deal of the *gandavensis* strain in them, and are not, I believe, a bit more hardy. They will survive if left in the ground and covered over with some good mulching, but so will the hybrids of *gandavensis*, and although useful as border flowers, are never likely to usurp the place so long occupied by the *gandavensis* hybrids. It is then of these I write, and a sorry tale I have to tell. I have now grown these grand autumn flowers for between thirty and forty years. I have seen the wonderful progress that they have made both in the size of the flower, the disposition of the spike, and the variety of colour. I can remember when three or four blooms were all that we looked for to be open at one time; whereas now, spikes of twelve, fourteen, sixteen, and sometimes twenty blooms are to be seen on our exhibition tables. I can remember when they were ingeniously placed in Yucca leaves so as to keep them well to the front. Now we get the blooms closely set together all facing to the front and making a solid mass of flower; while as to size, flowers of such as Enchantress would make two of the older kinds, and yet curiously enough there are some which, although brought out twenty-five or thirty years ago, still maintain their place. There is hardly a stand of any number of blooms that does not contain a spike of Adolphe Brongniart, which must be at least as old as this, and for solidity and freshness of colour it cannot be easily beaten, and there are other kinds which hold a similar position—a very satisfactory thing for those who wish to grow them, as they can be purchased at a low rate.

I grew Gladioli first at Deal, and for the last twenty-five years at my present home, and never during this long period have I had so disastrous a season as that of 1892. I am at a loss fully to account for it. I say fully, for on one point I have quite made up my mind, that I have not the proper soil for them, and yet for a number of years I was able to exhibit successfully in London, while several of those who knew the flowers pronounced them to be (which I believe they were) as good as had ever been exhibited. It may give some idea of the "change that has come o'er the spirit of my dream" when I say that I do not think I could during the whole of the season of 1892 have set up twelve respectable spikes, and the worst of it is, I can find no adequate cause for this result.

I had two beds, one in which Gladioli had been grown a couple of years ago, and another where I do not think they had ever been grown before, or if they had, certainly it must have been twelve or thirteen years ago. In these two beds I planted 800 bulbs, and I lifted about 300, and some of these went off after they were stored. At the same time two of the best amateur growers in England, Mr. E. B. Lindsell, of Hitchin, and Mr. Fowler, of Claremont, Taunton, have had a different experience, the former calculating his losses at about 5 per cent., the latter at 3 per cent. The

bulbs which I planted were from different sources. I had a good number of imported bulbs from France, a number of English-grown bulbs from the fine loamy soil of Cambridgeshire, a number of my own roots, and a few of Mr. Kelway's, and in all alike the losses took place, in the imported bulbs quite as much as in the English grown roots—in fact some of these were before planting time came on so bad, that I was obliged to discard them, and I notice in those that I have received from France this year one or two roots which seem to be diseased in the same way as I find my own bulbs to suffer. I have asked several growers, and have, of course, received various answers. I have been told—

1. Your bulbs are exhausted; they have not only flowered, but perhaps been allowed to seed, and so have not been able to bear the strain of another season. To this I reply, many of the bulbs I received from France and from Mr. Burrell, of Cambridge, were what I would call spawn bulbs; they had not bloomed, at least had not formed a full spike, and so could not possibly have been exhausted; indeed many of them had evidently not flowered at all.

2. You cut your bulbs, and therefore you must expect failure. To this I reply that some of the cut bulbs gave me some of the soundest bulbs that I lifted; while I believe that of all the magnificent spikes exhibited by Mr. Lindsell and Mr. Fowler by far the greater number were from cut bulbs, so that I do not believe this had anything to do with it.

3. Your beds must be infested with wireworms. To this I reply that my garden is singularly free from them, and that I have not lost any of my Carnations by them, and it is well known what a special favour they show to this class of plants.

My friend Mr. Burrell suggests to me, your soil is not favourable; you have too much humus and too little loam. Yours is not a Rose soil, and therefore you cannot grow Gladioli well. There is a good deal in this, but why have I been able to grow them in former years and have failed in this? I have always lost a far greater number than I had any right to expect, and therefore must conclude that Mr. Burrell is correct in his surmises; and yet I believe the statement of the French growers used to be that good market garden soil suited them, and yet this soil always contains a large quantity of humus. I am therefore inclined to believe that there was something in our climatic conditions that was adverse to them. We had a very wet season and a very cold May, and I cannot but think that they received some check then, and when this is the case, bulbs especially are apt to suffer from excess of moisture. I do not mean in writing this to discourage anyone from growing them, for I am persuaded that where care is taken to utilise the spawn, a stock can be kept up, and that this is the only way in which their culture can be satisfactorily pursued; indeed, in any other way the increase of the stock is very slow work. You plant a bulb and, as a rule, you only take up one, or at most two. If you cut the bulb, you will lift two bulbs; therefore, the careful gathering of the spawn will always be the concern of the grower who wishes to increase his stock. I need hardly say that the growers for sale are fully aware of this. If you visit Messrs. Souillard and Brunelet at Fontainebleau, or Mr. Kelway at Langport, you will see acres of what at a distance looks like Barley, but which you know to be spawn, and in the course of two or three years from the time of planting the bulbs will have flowered.

There is a good deal of difference in the varieties as to their spawn-producing powers. There are some which rarely produce any, or, at the most, half-a-dozen, and this is the reason why some varieties continue to maintain their prices, while others sent out at the same time are each year lower. I call to mind one instance of this. Mme. Desportes and Meyerbeer were sent out in the same year some thirty years ago, and in the catalogues for the present year the former is quoted at 2s., the latter at 3½d. There seems, indeed, to be a shyness in some of the white varieties in producing spawn which is not shared by

others. I have taken as many as 100, small and large, from one root of Horace Vernet. Mr. Burrell's Snowdon, the very finest white flower I have ever seen on which I have observed eighteen open blooms at the same time, and which I believe he once exhibited with twenty, is, he tells me, from this cause (its shyness in producing spawn) utterly useless as a commercial plant, and I believe that whenever the price of a bulb is kept up, it is owing to this cause.

Those who have large collections—and as far as I know they are very few—will have begun planting some time ago; but for those who grow a small collection, April is sufficiently early. We have had a long spell of most lovely weather, and may well be tempted to plant as soon as possible.

DELTA.

HYBRID NARCISSI.

IT is satisfactory to see that the Rev. G. H. Engleheart, of Appleshaw, Andover, still perseveres in his efforts to get distinct and finely coloured varieties or hybrids. At the meeting of the Royal Horticultural Society on March 28 he showed a group of great interest, and a few of the finer forms should receive a simple distinctive name. Nothing, however, shown on that occasion equals in beauty the hybrid Golden Bell, exhibited in April, 1892, as it is a remarkably fine trumpet Daffodil, which we should like to see get into all good gardens. That is a matter of time, but if it retains its character, Golden Bell will make a fine garden flower. Perhaps Mr. Engleheart would tell us whether these hybrids preserve a robust constitution and retain their character as exhibited. A few doubtless go back, but such a type as Golden Bell would, we should say, rather improve than otherwise. This hybrid has a very large trumpet, bell-shaped, spreading widely at the mouth, toothed, and very deep yellow in colour, the segments of the perianth sulphur-yellow and bold, in harmony with the sturdy corona. A hybrid that I liked much better even than the beautiful Golden Bell is Chrysosom, also a trumpet Daffodil, the large, finely-shaped flowers of a pale yellow colour, the margin of the corona or trumpet delicate primrose. It is a delightful flower. Mr. Engleheart has made a variety of crosses. Two or three seedlings from N. Horsfieldi were shown, the flowers bright in colour, and in every way hardier, sturdier, and bolder than the type. We may hope to get a decided improvement on existing kinds, though to get a large stock of these novelties will need much time. Another seedling from this variety was of a paler colour, though in other respects similar. Several bunches of flowers were shown from bulbs of crosses made between N. albicans and the earlier flowering trumpet Daffodils. There was a great variety of shades of yellow amongst them and considerable diversity in form, some (one in particular) being like N. obvallaris, better known as the Tenby Daffodil, a few approaching almost to white or touched with the softest primrose colour—a most interesting variety of shades. The prettier crosses are those in which N. triandrus has played a part, one hybrid being the result of this crossed with N. Empress, but finer than this is N. cernuus crossed with N. triandrus. This is a hybrid that deserves to be made good note of and is evidently very robust. The flowers are intermediate between the two parents, the trumpet straight, even and white, the perianth also white and of vigorous aspect. Two flowers appeared on the strong scape, so that there is every probability of this distinct and pleasing cross becoming a good garden kind. A very neat, exquisite little hybrid is the outcome of crossing N. triandrus with N. corbularia citrinus. The colour is pale yellow; but more distinct than this is N. triandrus crossed with N. poeticus, the flowers white, the segments thrown back and very delicate. One can trace plainly the poeticus character, the flowers not being unlike those of that species, but less robust. A charming cross is N. triandrus and N. corbularia macrophyllus. One could judge that such a parentage would give a very charming offspring. The segments of the perianth

are arranged in the fashion of a star, individually narrow, pointed, and, like the cup, white. All the hybrids shown by Mr. Engleheart are interesting and in many cases extremely beautiful. The great thing is the constitution, which, if not robust, of course greatly lessens the value of the hybrids; but in not a few instances there is no reason why in good time they should not take their place amongst the finest of garden Narcissi.

F. P.

ROSE GARDEN.

SCOTCH BRIERS.

ONE's thoughts may well turn to the Scotch Briers in such a season as the present, when with such severe of frost after the middle of March, the value of such is convincingly brought home. The varieties of our native *Rosa spinosissima* are quite hardy; and if only the ground be well broken and manured when the plants are first put in, Scotch Briers are better able to take care of themselves than any other

liable to be inconveniently short-stalked, unless an entire wreath be gathered. It is true that the Scotch Briers are only summer-flowering, but then their delightfully fragrant flowers come so long before the generality of garden Roses, that they are especially welcome. Moreover, one of the prettiest and most sweet-scented varieties is a perpetual, blooming a second time in autumn. This variety was raised at Stanwell, and distributed under the name of the Stanwell Perpetual. In habit and appearance it is not very different from the summer-flowering varieties, but its pretty globular blush flowers, of a most delicious fragrance, are freely produced both early and late, it being no uncommon thing to find them in good condition during October.

Numerous varieties have been distributed at various times. These Roses are now hardly ever referred to or even obtainable by name, being as a rule merely described according to colour, as white, pink, yellow, &c. There are, unfortunately, in cultivation many very dingy-coloured varieties, which have got these Roses

future flowering. At the present time the house is kept warm for the accommodation of other subjects. The warmth and moisture appear to agree with the Roses, judging by the number of blooms and the fine foliage.—E.

DISEASES OF ROSES.

MILDEW, red rust, canker and the various insect pests which affect Roses make up a formidable list, and it is no wonder that some amateurs find the cultivation of Roses under glass a difficult matter, especially when they do not pay sufficient attention to them early in the season. Quite half of the difficulty is removed by applying suitable remedies early. It is fatal to wait until the plants become infested and then to attempt to cleanse them in too great a hurry. Now that these flowers have become so extensively cultivated and are so much better understood, there can be no excuse for withholding such simple remedies an hour after the disease is discovered. Many a fine lot of plants has been spoilt through the cultivator putting off the cleansing of his plants for a couple of days. When there are only a few stray insects, or only a spot or two of mildew, it will not do to defer operations; in fact, this is the very time when it is most important to commence, as all diseases and insect pests spread with amazing rapidity, and it is wiser and also much easier to kill the first germs.

MILDEW.—This will not attack a thoroughly healthy plant. However luxuriant and clean the foliage may have been previous to an attack, you may safely take it that the plants have received some slight check or other, and thus been rendered more susceptible to attack, and consequently to a rapid spread of the disease as well. This in itself is sufficient reason why suitable remedies should be instantly applied. There are few more insidious blights or diseases than mildew, a most injurious parasite among Roses.

There are several remedies, and if properly and cautiously applied, I do not think there is so much preference as many growers imagine. Of course, we all recommend the one we have personally found the most effectual and safe. For my own part, I prefer to use an insecticide which will also kill insects and keep the foliage clean and healthy. Now, if due care be taken in the cases of ventilation, temperature and watering, one composition will be sufficient for almost all insect pests as well as mildew. But the thing of primary importance is to commence early. I make a practice of using the remedy at half strength before any insects or mildew appear. I am convinced this is the more correct treatment, because you not only keep the foliage clean and free from dust, but the early use of a weak solution makes it almost impossible for the enemy to get a footing. To use the various insecticides at the advertised strength, and to do this so frequently as is necessary if you are to keep the foliage clean and healthy, not only comes very expensive, but is really injurious to the plants. Roses require frequent syringing if they are to be kept clean, and although it is well to use clear soft water only, I much prefer to have it slightly impregnated with an insecticide. It is not my intention to recommend any one composition over another. All are good. Sulphur is one of the most important ingredients when checking and killing mildew. But here, too, a much smaller quantity than is generally used, and applied a little more often, would have a better effect. Some insecticides contain much more sulphur than others, and this must be taken into consideration when making any solution, especially for mildew. The minutest particle of fresh sulphur will kill the mildew it comes into contact with, and to apply it so profusely as I have often seen makes the remedy very nearly as bad as the disease. I would never advise that it be dusted over the foliage, as it is impossible to distribute it so uniformly by this means as if it were incorporated in the syringing mixture. In the latter case it comes into contact with the whole foliage both above and below, also with the young wood, which is usually affected as



Scotch Brier Roses.

kind of Rose of garden origin. Climbing Roses want training and tying; Hybrid Perpetuals require pruning and mulching, not to mention the keeping down of aphids and mildew; Teas and Noisettes need protection in winter, but Scotch Roses, if carefully planted at first on their own roots, need neither pruning nor protection, training nor top-dressing, are victims to neither green-fly nor mildew, and, in fact, may be trusted to thrive without any special attention for a considerable number of years. These Roses are not at all particular as to soil, but if it is very poor, a light mulching of short manure in November will keep them in good condition. They should be planted in a place by themselves, when they will throw up their spine-covered suckers freely from the base, and soon entirely cover the ground; and as they do not grow more than 2 feet, or at most 3 feet, in height, they thus make a very ornamental mass, flowering freely at every joint. Indeed, their freedom of flowering tends indirectly to render them essentially garden Roses, as opposed to Roses for cutting, for in addition to their innumerable thorns, which make them somewhat uncomfortable subjects to handle, the flowers are so freely produced, that they are

a bad reputation from a decorative point of view. Nothing can be more charming than a mass of these dwarf, delightfully fragrant and very hardy Roses, whose buds are in miniature the perfection of form, a quality which is maintained in the globular flowers of the more double varieties, while in soils and situations where the successful cultivation of most other Roses would be hopeless, flourishing plants and flowers in abundance may be had of the Scotch Briers.

Rose Perle des Jardins.—This is one of the best varieties in the Tea-scented section for early flowering where a quantity of bloom is required. The deep straw or pale yellow colour of the unopened buds is charming.—E.

Rose Niphetos.—In the long lean-to house in which the Messrs. Drover, in their Fareham nurseries, flower their Chrysanthemums is at the present time one of the finest batches of this superb Rose that anyone could wish to see. The plants in question are growing in a narrow border at the base of the back wall, up which they are loosely trained. Judging by their present appearance, it cannot be said that to be hidden from light, as they are for two months when the Chrysanthemums are arranged against the wall, is detrimental to their

well as the leaves. I have frequently seen it advised to cut off all affected portions of growth and foliage. The disease spreads so quickly, that unless it starts from draught through a hole or broken square of glass and its presence is noticed immediately, I do not attach much importance to cutting away the diseased portions. When I notice any signs of mildew upon my plants I always add a little paraffin oil to the solution, and if it does not already contain what I consider sufficient sulphur, more is added. The following are good proportions: To the usual syringing solution I put a tablespoonful of oil to three gallons, and a small teaspoonful of sulphur to the same amount. Keep the whole thoroughly stirred during application, and you will find it effectual and unsightly. Mildew cripples the young foliage and growth more quickly than any other Rose blight, causing it to blister and curl. Under glass it should be, and is, easily banished if the above instructions are followed. Such insects as

THRIPS, APHIS ROSE, and RED SPIDER can be killed and kept in check by using any reliable insecticide frequently. If a weaker solution be used from the first break of young foliage, these, like the fungoid disease, will be very little trouble. Should they, however, seem on the increase, as sometimes happens when the weather is changeable, I would advise a slight fumigation with tobacco. I think it is even more necessary to be cautious in the use of this remedy than with the syringing solution. To give a certain weight of tobacco paper or rag as being suitable for a house of given size is by no means reliable. In the first place, freshly steeped rag or paper is much the strongest; nor do all manufacturers saturate it to the same extent. Keep up a prolonged fumigation, rather weaker than that generally used. You will find this safer and more effectual. Always fumigate in the evening and syringe the next morning. This is a very deadly and efficient remedy, while the syringing removes much of the objectionable odour from the smoke.

CANKER is a disease that there seems no certain remedy for. It usually attacks Roses of very strong growth, such as *Rêve d'Or*, *Maréchal Niel*, and *William Allen Richardson*. The form most generally found is that which results in a swelling around the part where stock and Rose join. But I have also noticed it in the case of own-root plants. It is difficult to assign the exact cause of this disease, as many circumstances seem to have some influence upon it. The question of suitable stock has a considerable bearing upon this disease. I find many of the Hybrid Perpetuals that possess a larger proportion of Tea or China blood, such as *Captain Christy*, *Reynolds Hole*, *Her Majesty*, and others, will not thrive upon the *Manetti*, and show a great tendency towards the same class of canker as that found in *Maréchal Niel* and *William Allen Richardson*. On the other hand, *Mlle. Marie Verdier*, *Louise Peyronny*, &c., which do not possess any Tea blood, also refuse to do upon this stock, and plainly develop the same form of this mysterious disease. There is also a form of it which affects the wood more or less throughout the whole plant. I would not like to express my opinion too positively, but I think we can generally trace canker as the direct result of unequal balance between top and root growth. A great point in support of this opinion is the fact that a sudden reduction of, or check to either the growth or roots of what are perfectly healthy and vigorous plants will more often than not lead to canker. I notice this in another connection, viz., that of the stock not being congenial to the variety of Rose worked upon it, with the result that the Rose is not able to secure a sufficient supply of sap, or else the roots produce much more than the Rose growth can utilise. In either case, a swelling results at the point of union between Rose and stock. I also incline to the opinion that canker is much more prevalent among plants under glass than when cultivated in the open air. And here, too, I draw the same inference, viz., that the disease is caused by the unequal relations existing between top and bottom. In the case of a plant turned out in a border under glass, the soil which

the most important roots have penetrated into is often of a cold nature. Certainly it cannot be so effectually influenced by the surface heat as to be in a correspondingly forward state that the top growth has been forced into. In the case of raised borders and with a naturally warm subsoil, this is not so marked. But here we frequently reach another extreme. The soil being free, naturally warm and dry, is often allowed to become far too dry at the depth from which the Rose is drawing its greatest amount of support.

I mention this because I have more than once heard the opinion expressed that this disease is altogether inexplicable, being found equally prevalent in both warm and dry, or cold and wet borders. In the case of pot plants it is more often found where the roots have become restricted and the plant is not able to draw sufficient nourishment to meet its requirements. Provided the Rose be worked upon a suitable stock, I never find canker except it be among the extra vigorously growing varieties, and seldom have I known a case in which it could not be credited to one or other of the causes I have pointed out. Supposing this theory to be correct, the remedy explains itself, and I may consequently dismiss this form of canker.

In the case of some injury having occurred to any plant, especially if the sap be in full flow, we often find an insect feeding upon what exudes from the injured part. The "callus" over a healing wound would seem to have an especial attraction to some insects, for they frequently eat it off as it forms. This weakens the plant, and in fact acts as an irritant to the sore, with the natural result that it increases in size and soon forms a more warty type of canker than that found where merely an unequal balance exists between growth and root-action. Unfortunately, I do not know the name of the insect, but I have frequently noticed it, and have come to the conclusion that it has some means of piercing through the healed portions, and so causing a fresh flow of the sweet callus-forming sap it feeds upon. A few drops of Fir tree oil or paraffin will kill them. The latter spirit quickly spreads into and over every portion of the affected part, and very little is needed.

It is very seldom that a plant once affected by canker can be brought round. Where such is to be attempted I would advise that the greater part of the excrescence be cut away and a little fresh cow manure rubbed over the spot. In the majority of cases canker affects the collar of the plant, and it is sometimes beneficial to cover over this with fresh soil. When the insects have been killed I have known cankered plants to start off upon their own roots from the affected part, especially if it be covered with good yellow loam and sand.

RED RUST AND ORANGE FUNGUS are two diseases that have baffled me to discover either their cause or remedy. The former spreads with great rapidity, or perhaps it would be more correct to say that the whole batch of plants becomes affected simultaneously. It is peculiar that it never attacks the true Teas and Noisettes, but the so-called Hybrid Teas, i.e., those varieties raised from intercrossing the two classes, are almost equally affected with the true Hybrid Perpetuals. I have sometimes thought a hot, dry autumn or late summer has had some influence upon it, but have arrived at the conclusion it is almost if not quite as prevalent during wet as dry seasons. Fortunately it comes late and when the best of the Hybrid Perpetual season is over. Another satisfaction, however, is, the true red rust does not attack the Teas and Noisettes, nor the Banksian and other strong growers of the climbing classes. Some few of the Hybrid Perpetuals also seem to enjoy an immunity from this disease, of which *Ulrich Brunner* and *Archiduchesse d'Autriche* are examples. My amateur friends have occasionally pointed out to me what they considered red rust among their Tea-scented varieties growing under glass or in hot and dry corners of the gardens. But this has invariably proved to be no more nor less than a bad attack of thrips and red spider. By virtually robbing the leaves of their nourishment and also from the numerous minute punctures they make through

the cuticle, these little pests cause the foliage to take on a rusty hue and drop off in much the same way as if affected by the disease we have more particularly under notice. They are more prevalent under glass on account of the dry atmosphere, many growers maintain, especially during the latter portion of the season and when the plants are being ripened.

RIDGEWOOD.

AMONG THE ROSES.

ALTHOUGH it is much too early to forecast the prospects of bloom for the present season, there is much that is promising in the present state of our Roses. The general experience is that the plants have wintered well. The season again proves that no calendar of operations to be performed on actual dates is of the slightest use, the exigencies of the season and the state of the plants being the chief factors in determining the time for the performance of the more important details of culture. Teas on walls and fences, and in open beds and borders, old-established groups and new plantations of last autumn are all breaking strongly, but all are dwarf plants. I think in this respect dwarf Teas should find the most favour with the general grower. Mr. Grahame on p. 227, alluding to his losses, mentions the fact that the majority of them were half-standards. Now, whether full standards or half-standards matters but little, for I think experience will prove that standard Teas of any sort are more tender than dwarfs. Those who grow for exhibition often cut very fine flowers from standard plants. The finest Tea Rose blooms I ever saw were cut from such.

There is a singular and surprising difference in the state of Roses at Uckfield, as mentioned by "R." on p. 227, and of those under my care, though situated in the same county and but twelve miles distant. "R.," alluding to the plants on walls, speaks of their present backwardness. My great anxiety for the future arises from their exceeding forwardness. Plants upon walls are usually pruned earlier by some weeks than those in the open air. For unavoidable reasons I had to defer the pruning of the wall Roses, and this should in some degree tend to keep them back. Now, however, after pruning, there are young shoots varying from 9 inches to 18 inches in length, and many showing buds; whilst upon one young shoot I observed some green-fly. Flower-buds in quantity in some cases are showing upon *Lamarque*, *Gloire de Dijon*, *Rêve d'Or*, *Bouquet d'Or*, and *Climbing Niphetos*, some upon wood cut away and others on that that must remain. This I never before remember to have seen in March, and can only regard it as the result of the warm sunny days that have prevailed throughout the month of March. Although frosts have occurred nightly for almost the last half of the month, they have had scarcely any retarding influence. The coldness of January, wetness of February, and dryness of March were quite characteristic, and should the three succeeding months continue congenial, the season would be quite unique and Roses tolerably plentiful in May. But with our variable climate it is too much to hope for this, and we must calmly await what happens. Then, again, concerning Roses in the open, "R." says they are not so forward as is usual towards the end of March; whilst Mr. Grahame speaks of blanched shoots, which are suggestive of excessive protection. I can only say that with me unprotected Teas are very forward—indeed, the groups of some kinds are quite effective by reason of the colour of the young shoots varying from 1 inch to 3 inches in length. Some of these self-same plants I have pruned after the middle of April, but it will hardly be possible to let them wait so long this year. Even the Sweet Brier has been sufficiently advanced in growth for its sweetness to be perceptible in the air since the middle of the month. Large plants of *Rosa polyantha* are a perfect mass of delightful green. This species is naturally precocious, but not nearly so tender as some suppose it to be; whilst a bush of it becomes of considerable dimensions if planted

where there is no need for restriction. The experience of Mr. Grahame and "R." concerning Ernest Metz is considerably at variance. I believe it will yet prove a first-rate Rose, and that some of its present weakness arises from over-propagation. Of several newer kinds on trial last year, this was with me by far the best, and the most magnificent bloom of the season opened during the month of October, in spite of twenty-five wet days. Cleopatra, however, never did very well, and Mr. Page-Roberts told me he had found it a bad grower.

A. H.

MARECHAL NIEL ROSE.

CAN anything be done to renovate an old Maréchal Niel? It is trained to the roof of a greenhouse. About four years ago it was severely pruned, and this had the effect of throwing the sap back and causing canker at the root. Since then fresh roots have been thrown out above, but it has never regained its old vigour and the blooms are only the size of a large Walnut; neither does it make any vigorous shoots.—NORTH COTSWOLD.

*** From your description, I am afraid very little future benefit can ever be realised from your plant. Canker is the most obstinate disease Roses are affected with, and this variety with William Allen Richardson is the most subject to it of the 2000 to 3000 varieties now grown. You have in all probability ascribed the attack of canker to its true cause, viz., the severe pruning some four years back. The best advice I can give you is to take up the plant entirely after having realised the present crop. Thoroughly renovate the border and replace with a healthy plant from a pot. I would not choose one that has made a long growth last season, and which would flower during the present spring, preferring one that was cut down hard at once, thus avoiding any exhaustion from flowering this year. This will ensure a strong rod for next season's blooming. However, should you prefer trying to renovate the old plant, as it has not regained its original vigour and fresh roots are appearing above the cankered part, I would cut the plant back after flowering and place a quantity of good maiden loam and sand around the affected part. This will encourage the roots. It is best to enclose the soil with four pieces of board about 1 foot high, as you can then give water without its running off so freely as would be the case if the soil was piled around the plant in a mound. In this case the plant would be practically upon its own roots, but I never knew a Maréchal Niel thrive so profusely on its own roots as when worked upon a suitable stock. Briefly, I would cut it out and replace as I have first advised. If this be done, by the second season the new plant will be as good as ever the original one was.—R.

Heinrich Schultheis (Bennett, 1882) is very early and has a most charming tint of clear flesh when first opened. It is a good grower, exceptionally free-blooming and one of the sweetest scented Hybrid Perpetuals we have. At Chester last summer there were two new sports of this shown, one called Mrs. Harkness being a grand and distinct Rose, having a creamy flesh colour I do not call to mind in any other flower.—A. P.

Bourbon Rose Mrs. Paul, of which a coloured plate was given in THE GARDEN, Nov. 22, 1890, is excellent for early forcing, preserving its distinctive character and vigour. It was raised from Mme. Isaac Perière by Mr. George Paul, who saw in the variety last named, which was raised in 1850 by M. Margottin, the groundwork for building up a race of useful seedlings. A conspicuous success is this comparatively new Bourbon, as it retains the vigour and perpetual character of the type, but not the coarse flowers. The variety Mrs. Paul is of vigorous growth, the leafage abundant, large, and of a fine green colour, whilst the flowers are of great beauty and distinctness. The petals

are broad, robust, and compose a massive bloom; the colour pearl white, touched with very delicate rosy pink, and even those produced under glass reveal this delicacy of colouring. A point of importance is also the sweet perfume.

NEW ROSES.

A WELCOME foretaste of the fast approaching Rose season has come to hand from Messrs. W. Paul and Son, of Waltham Cross, who send me blooms of six new Roses. The gem of the collection is

MEDEA, which promises to be a valuable addition to yellow Teas. The flower is of a pale lemon-yellow colour, reminding one of that of Mme. Hoste. It is exquisitely shaped, full and long when half expanded, but opening into a globular flower. The growth is strong and vigorous, and this added to the high quality of the blooms should secure for it considerable popularity.

WABAN is the deep-coloured sport from Catherine Mermet. It is rather singular that this, one of the best of Teas, should have been in cultivation nearly thirty years, and then sport in two directions, producing varieties with all the merits of the parent, but possessing undoubted distinctness. The former of these (The Bride) needs no praise. Waban, which, to say the least, is not a pretty name, originated with E. M. Wood and Co., of Mass., U.S.A., and is being distributed in this country through the agency of the Waltham Cross firm. The flowers before me have the characteristic fine form and substance of those of the original parent, but they are very clear and bright in colour, rose shaded with red.

PRINCESS MAY belongs to the so-called Hybrid Tea race, to which, by the way, notable additions are now almost annually made. The family increases, but rosarians do nothing towards changing existing unsatisfactory methods of classification. When there were but one or two varieties of this character it was needless to give them a family distinction, but now there is a goodly number of first-rate kinds demanding a distinctive name under which they may be classed. The charm of Princess May is its sweetness, and this quality will win it many admirers. It appears to belong to the Dijon family, having the climbing habit and rich leafage of that race, but the flowers are of a clear soft pink colour, full, round, and globular.

LADY HENRY GROSVEHOR belongs to the same ill-defined family, and is the last on the list of the many kinds that will long perpetuate the memory of the late Mr. H. Bennett. There is not the least doubt that the raiser had a high opinion of this kind, for he had raised a very large stock of it, although he did not live to see it distributed. Two first-class certificates and an award of merit have been given it, and doubtless ere long it will be as popular and largely grown as Viscountess Folkestone and Grace Darling. The flowers, borne erect on a strong footstalk, are very full and of a soft flesh-pink colour.

CHRISTINE DE NOUE.—On more than one occasion in these columns I have alluded to the fact that Rose raisers are giving us too many red Teas. We could do without them, since it is the Teas that give us such soft, lovely varied hues, and the whole race of them is a bold contrast to the glowing gorgeousness of colour embraced by other kinds. Apart from other distinctive qualities of habit and freedom of bloom, it is undesirable that we should set aside colour distinctions and import into the race many ordinary red-flowered kinds. The kind now under notice, giving it its due, is better than many of the colour. It has been certificated already this year by the Royal Botanic Society and at the Crystal Palace. This Rose proves once more that M. Guillot rarely sends us a bad Rose, although it were better to have had one of the same high quality in another colour. The flower before me is very bright by lamplight, and it shows itself to advantage by its erect growth. Outside it is of a rosy crimson hue, shading to a lighter tint, suggestive of Mme.

Lambard inside. The flower is full, finely formed and sweetly scented.

MME. PIERRE COCHET appears to be an addition to the Noisette family, fully justifying a trial. It is said to be an improvement on W. A. Richardson, and almost exactly resembles that kind in colour. It has glossy leafage, and wood that is almost thornless, so that in this respect, at least, it has a characteristic of its own, as W. A. Richardson is a very spiny Rose. When Roses come so near in colour, nothing short of an actual trial can justify a definite expression of opinion. A. H.

KITCHEN GARDEN.

NOTES ON ASPARAGUS.

IT is strange that more attention is not paid to the cultivation of this delicious and wholesome vegetable, especially as it is now generally admitted that the old-fashioned costly and laborious method of culture, or rather preparation for its production, is not at all necessary to secure even the finest samples. In the near future, when the tenant even of a garden or allotment will be entitled to compensation for any improvement giving increase of value to the land, we may expect to see a bed of Asparagus not only in the small villa garden, but cultivated by the thrifty cottager as a means of making the most of the land, for it is always in demand and will return, with proper treatment, at least three times the value of a crop of say Potatoes. Although a bed is not altogether the correct mode of culture for Asparagus if you wish for the best results and giant grass, it is perhaps on the whole the most economical plan, at any rate for a small garden, though there is no reason why single roots should not be planted out, as in the case of Rhubarb, in any fairly open situation. Anyhow, the finest produce will be always grown where the plants are treated individually and allowed sufficient room. What is sufficient room may be gathered from the fact, that where I have rows of Gooseberry bushes 10 feet apart, with one row of Asparagus between, roots of the latter are found under the bushes. This Asparagus was planted in April in the plain soil, holes being dug a yard apart and one foot wide. In the centre of each hole a small hillock of soil was formed, reaching say half way up, or 4 inches from the surface; on this a strong yearling plant was placed and covered immediately with fine soil, a little coal ashes and superphosphate being placed over the crown as a stimulant and to preserve a friable surface.

This is where I cut the best samples of grass, a single plant giving sometimes six or eight sticks at once. The soil is naturally rather stiff, but Asparagus will thrive in a comparatively stiff soil provided it is well drained and a friable material is used just over the crown, for although strong grass will push through almost anything, you will have a sorry sample in a dry season if it has to penetrate baked clay.

I use freely coal ashes and rotten manure. The roots of Asparagus run naturally from 6 inches to 1 foot under the surface, but in forming a bed (and, as I before intimated, you will probably get a greater weight of produce from a given space in the bed than in any other form of culture), as the lateral root-run must necessarily be limited, it is advisable to induce downward growth as much as possible by thorough and deep cultivation and the application of manure or fertilisers. Where the soil will not admit of this, a productive bed may be made, as I have proved, by simply digging in a good dressing of manure. Plants in a bed should not be closer than 18 inches, and three rows are ample. It is always best, if possible, especially where many are required, to grow your own plants. Purchased plants rarely give satisfactory results, as the roots will not bear much exposure to the atmosphere, wind or sunshine being specially injurious.

I cannot recommend sowing a permanent bed, for the simple reason that thorough thinning of the young plants is almost an impossibility. A small nursery with the plants put out 1 foot apart will prove very useful, and should be kept up with seed sown every other year. A frame where the plants are packed close will turn out a nice early lot. I commenced cutting March 14. These are four-year-old plants and throw up stout sticks. By a careful tug with one hand and twist of the knife with the other the sticks will generally break off at the crown—much the best way for early produce, as it ensures more length.

Asparagus in the open will generally pay for some protection in the shape of litter strewn over the bed, as I have known a severe frost in May partially ruin the crop for the season. When cut with the knife, or pulled, it soon springs again; but to be cut off with frost when in full growth seems to give such a check that it is a long time in recovering. When the crop becomes plentiful and there is no more danger from frosts, the knife should not penetrate the soil; cutting deep takes more time and is certain to be injurious, more or less, to the coming shoots. The after growth from the separate stools being very strong—6 feet or more, I find it advantageous to put in stakes every few yards and run twine along the sides, for the breakage of these stems prematurely by storms and wind is very prejudicial to the strength and fertility of the plant. As to manure, the Asparagus bed will pay well for very liberal treatment. But I do not agree with piling raw manure over the plants in late autumn or winter, preferring (with the exception, perhaps, of a good mulch in summer round the tall growth, which cannot be anything but beneficial) to give the beds any benefit which may accrue from the pulverising effects of frost or the drying influence of sun and wind, postponing the top-dressing till March, for Asparagus roots, well established, will endure frost better than too much moisture when growth is stagnant. Superphosphate applied in early spring, with a mulch of well-rotted manure, and further on nitrate of soda and salt, will prove the correct culture.

I have said nothing about liquid manure, as in my opinion it can be applied with more profit to other vegetable crops, or to bush and fruit trees where there will be no risk of taint to the flavour of the produce, for, with the exception of very light soils, or in the case of old-fashioned raised beds with abundant bottom drainage, when watering may be necessary, we may, as a rule, reckon on a better crop in a warm dry season than in a wet one.

E. W. BEAVEN.

Holmer, Hereford.

HARDINESS OF BROCCOLI.

As stated by Mr. Wythes (p. 240), it is very questionable whether any variety of Broccoli in cultivation is fully entitled to the prefix "hardy." Some are certainly more to be relied upon than others, Model, perhaps, being the hardiest of all, although this season I have a fair proportion of the smallest plants left of both Leamington and Ledsham's Latest of All. There cannot be any question that in far too many instances too much space is given up to such a chance crop as Broccoli undoubtedly is. This season, for instance, most cultivators could do with a good supply, although very few no doubt will be in this position on account of the great destruction caused to this crop during the month's severe weather setting in at Christmas. Some gardens are ill adapted for the successful growth of Broccoli at the best of times, being very low-lying, also closely walled in, and very likely surrounded with tall trees. Under such circumstances the plants do not make that sturdy growth seen in more exposed gardens where a free circulation of air is assured. The cultivator is sometimes to blame, as besides sowing the seeds much too early, the seedlings are so crowded in the seed beds, that good plants are an impossibility. Large plants are not by any means the best to stand the winter, for

unless the weather at this time should be very favourable for them, they will most surely succumb. A small head of Broccoli is much better than none at all; therefore if the plants may appear small upon the approach of autumn, the grower need not envy those who may have much larger plants.

By sowing the seed about the first week in May, allowing ample space for the seed-bed, also sowing in rows instead of crowding up the plants in a small seed-bed, good plants may be secured capable at least of withstanding more frost than weakly and drawn plants. I could never see the wisdom of sowing on very poor ground, as some advocate, for if so and a dry time should set in, the growth is so slow, that it is with difficulty the fly can be prevented from devouring the young seedlings. By sowing on fairly fertile ground, taking care that ample room is allowed for the young plants' full development and also that the site is well exposed, the plants will not grow any too freely. It is just the same at the final planting, for if plenty of space is not allowed the plants, they fail more or less just the same.

As Mr. Wythes truly says, too much care cannot be taken in the selection of varieties, and in recommending any kind a hard-and-fast line should not be drawn. I also agree with him as to the varieties he names, as they are really good standard sorts and to be relied upon. But in speaking of Broccoli, Veitch's Self-protecting is classed by itself. It is really the spring kinds that mostly concern us when speaking or rather writing of the Broccoli crop. Model by its habit is certainly a good variety, but we want others to precede it, and it is with these that the most doubt exists as to their hardiness.

A. YOUNG.

SHORT NOTES.—KITCHEN.

Perpetual Spinach.—Those who have not grown this variety of Spinach would do well to make an early sowing. While great breadths of the ordinary prickly variety, which is generally considered the best for autumn sowing, have been destroyed during the past winter in some soils, the perpetual variety remains unscathed, and without any apparent signs of running to seed or deteriorating in any way.—S.

Onion Ailsa Craig for autumn sowing.—It may not be known generally that this is quite equal to any other recognised variety for autumn sowing, standing the winter quite uninjured by the side of the well-known Lemon Rocca, and apparently equally hardy. This variety (Ailsa Craig) has been so much associated with sowing in heat early in the year, with a view to hastening on the growth for summer and autumn use mainly for exhibition, that generally its adaptability for autumn sowing out of doors in the ordinary way has been but little practised.—S.

Early Cucumbers.—At the meeting of the R.H.S. on March 28 a brace of Lockie's Perfection Cucumber was submitted to the fruit committee to show its value as an early variety. Any variety of small or medium size may be had fit for use in the time given, viz., from January 7 to March 27, if grown under favourable conditions. I have seen market growers get fruit of Telegraph in six to eight weeks, and in many private gardens the plants are fruited in less time. We have had most favourable weather for all crops under glass, the large amount of sun of late being of great value. The variety staged is well known for its nice even appearance, but I do not think a period of eleven weeks from sowing the seed to cutting the fruit will constitute it one of the earliest varieties known.—S. H. B.

Wire Pea hurdles.—Except in wooded districts the purchasing of Pea sticks is often a serious item in the garden expenditure. To obviate this difficulty, of late years galvanised Pea hurdles have been introduced. I do not look upon these wire Pea hurdles with particular favour; I much prefer the old-fashioned sticks. I am not speaking without any experience of these hurdles, as probably it has not fallen to the lot of many

gardeners to use them more largely than I have. The advantage, I say, comes in where Pea sticks are with difficulty procurable, and although at the outset the cost may appear excessive, yet in the end they will be much cheaper than sticks, as they will last with care for years. But even with the use of hurdles a few small sticks are needed to guide the young growing Peas. However suitable the hurdles may be for keeping the haulm erect, yet it will not intertwine in the wires, as many people suppose. Nor is a single row of hurdles along one side of the Peas of any use; there must be a row on each side arranged about a foot apart. This will keep the haulm erect. The hurdles being made in three heights, 4 feet, 5 feet, and 6 feet, care must be taken that they are used as high as the Peas are supposed to grow. Once I had a lot of Peas seriously damaged through not having the hurdles high enough, as upon the haulm growing above the tops a rough gale broke it over level.—A. Y.

GARDEN FLORA.

PLATE 905.

CYPRIPEDIUM CHAMBERLAINI.

(WITH A COLOURED PLATE.*)

THIS, one of the finest introductions of recent times was imported from New Guinea by Mr. F. Sander, of St. Albans. The plant was quite unknown until 1892, so that it has not been in cultivation long enough to get established and to flower with the strength and vigour which it does in its native country, where, we are told, it bears from twelve to twenty flowers upon one spike. From what has been seen of its flowering in its semi-established condition, the statements of its beauty have not been over-rated. In this *Cypripedium* we have not only a totally new species, but also a quite new type of the genus, and by hybridising no doubt we shall now obtain varieties with richly coloured pouches instead of those with a dull brown hue, which has hitherto been so prevalent. It was thought when first introduced that the plant would be difficult to establish, but quite the contrary has been proved by various growers. It is a very strong and robust plant with a characteristic appearance about it that at once renders it distinct, the leaves being broad and long and of a uniform plain green. The spike is erect, having arranged on either side large ornamental arm-like bracts from which the charming flowers, which do not appear to be of large size, are produced. The dorsal sepal upon first opening is greenish white, changing with age to yellowish white, having three rosy purple streaks on each side of the midrib, dotted and spotted at the base with the same colour, smooth in front, clothed with short hairs behind, lower sepal similar, but very much smaller. The petals are spreading, standing at right angles, undulated, and spirally twisted, white, with crimson spots and blotches, arranged in lines, and slightly hairy at the edges. The pouch is a marked feature in this species, having a white ground, profusely covered with rosy crimson dots. On the 28th of last month Mr. Sander exhibited before the committee of the Royal Horticultural Society a variety named *platytanium*, with broad and handsome petals. It grows freely in well-drained pots, in a mixture of fibrous peat and Sphagnum Moss with a little sharp sand. I am of opinion that this species will be greatly benefited by the addition

* Drawn for THE GARDEN in Mr. Sander's nursery by H. G. Moon.



CYPRIPEDIUM CHAMBERLAINI

of a little turfy light loam to the above compost, and I have some plants potted in that mixture, peat fibre one half, Sphagnum Moss and the turfy loam making up the other half. The plants appear to be thriving well in this, and I am under the impression that they will grow and flower more strongly. Although it appears to like a good strong heat and a moist atmosphere whilst growing, it will do well with the other kinds from the East. The flowers of this plant have already been used for hybridising, and I long to see the result obtained by the use of this bright pouched species.

WM. HUGH GOWER.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

HARDY WINTER GREENS.—Borecole being the hardest of winter green vegetables, due provision should be made to ensure good plants, so that all possible ground which may be spared for the purpose may be planted. What are most desirable are healthy plants raised from seeds sown now, as this is not at all too early, for if sown too late there is not sufficient time to have strong plants before winter. The seed-bed must be in an open position and well away from trees and walls and also in a fairly fertile condition. Poor soil may certainly cause a hardy growth, but it is too slow, and under such conditions the plants are very liable to be attacked by the fly. I also favour sowing the seeds in drills drawn quite 15 inches apart in preference to sowing broadcast, as unless the seeds are so sown that the plants can stand a fair distance apart, they are very apt to become much crowded. By sowing in drills both sides are exposed to direct light. A little soot and burned refuse worked into the surface before sowing has a good effect. The drills should be drawn an inch in depth, and, before sowing, it is a good plan to moisten the seeds with linseed oil, afterwards coating them with red lead, this making them distasteful to small birds, which are often very troublesome. The young seedlings as they are coming through the soil are often pulled up wholesale, and to prevent this the best course is to stretch a net over the whole, this being kept off the surface by forked sticks. Birds, however, are not the only depredators to contend against, the fly often proving a serious evil, this very quickly, unless means are taken to prevent it, soon devouring the whole lot. As a precaution against this, directly the seedlings appear dust them over in the early morning with wood ashes or soot, and it is also a good plan to lightly hoe the surface over, this, besides disturbing the soil, assisting the growth.

VARIETIES TO PLANT.—The best kinds amongst the Borecoles to plant are the dwarf and tall Green Curled, Cottager's Kale, Read's Improved Hearting, and Asparagus Kale. This last is most useful, it coming into use after the others are past their best and being also of excellent flavour.

SAVOYS AND CABBAGE.—Savoys are not so hardy as Kale, but they are indispensable in any garden. Seeds sown now will produce useful plants. A good breadth of the small Tom Thumb should certainly be planted, as on account of its small size the flavour is not at all strong. King Koffee is also an excellent little variety. Dwarf Green-curved and Early Ulm being well known and tried sorts. Some people do not care for autumn or early winter Cabbage, but I can strongly recommend both Etampes and Winnigstadt, the former for early cutting and the latter for winter. It is early yet to sow Chou de Burghley, the best produce being secured from seeds sown a fortnight or three weeks hence. Sown earlier it is apt to become over-grown and succumb during severe frosts.

CAULIFLOWERS.—Any Cauliflowers which are of a suitable size for planting should be put out before

they are likely to receive any check. In previous notes I have called attention to the desirability of only pricking off the plants into good holding soil, so that upon being lifted, the balls will remain intact and not fall away from the roots, for if so, the chances are that the plants will "button." Whether the plants were pricked out or even grown on in pots, it is essential that they be thoroughly moistened beforehand. The site will, of course, have been well prepared as regards manuring and deep digging. Instead now of planting on the level, cut out rather deep drills, in which set the plants; this, besides the protection it affords, forms a receptacle for water, as it may be applied direct to the roots without any fear of its running off the ground. In planting take out the holes sufficient large to admit the ball without cramping. The soil must be pressed well around the ball and be watered in. If the weather should happen to be dry and cold at the time of planting, it is a good plan to cover over each plant with a flower-pot for a few days, to be taken off at night so that the dews may refresh the plants. Also arrange the planting so that a portion may be grown on a cooler site so as to form a succession, unless the varieties are such as will allow each kind to follow well after one another.

EARLY LETTUCE.—These may also be put out directly the plants are large enough for the purpose. Plant them firmly and well on good ground, as it is useless to expect full-hearted Lettuce from poor soil. When the plants have been pricked out they will lift well with a ball; otherwise take great care that others are planted or rather dibbled out firmly, watering them in, and, if need be, shading for a day or two. To ensure a succession of plants, a small bed should be sown at intervals of ten days or a fortnight, so that there are always relays of young plants at hand for planting. Sow the seeds very thinly in rows in preference to broadcast. If at all crowded the young plants spindle up, and if this takes place full-hearted Lettuce cannot be expected.

EARLY CABBAGE.—If these are not growing as well as desirable, either sprinkle a little guano or some nitrate of soda about the roots, afterwards hoeing it in and moulding up the plants.

A. YOUNG.

HARDY FRUITS.

APRICOTS.—Rarely, if ever, have Apricots made such rapid progress as during the present spring. The trees flowered abundantly and the fruit set with the greatest freedom. June-like weather in the daytime has literally forced the trees, cold frosty nights not having greatly checked progress, especially where there are copings and blinds. Already there is a good covering of leaves, so that it ought to be safe to commence thinning out the fruit, especially where it is as large, or in many cases even larger than horse Beans. At the same time, this thinning out should not be severe, only the clusters of fruit being well thinned, the rest being gone over, cleared of dead flowers and lightly thinned, all the fruit badly placed for swelling being removed. When all risks of injury from severe frosts may reasonably be considered past, then the thinning out ought to be persevered with, the fruit on greatly over-cropped trees being invariably small and poor in quality. The borders ought also to be probed, and if at all dry, should receive a good soaking of water, or, in the case of large trees, liquid manure, following this up with a mulching of strawy manure, unless this has already been given. Mere dibbles are simply thrown away on old Apricot borders; therefore, give a second watering in the course of two or three days.

DISBUDDING AND STOPPING APRICOTS.—Leafy growth is also very forward on Apricot trees generally, and in most instances the time has arrived for starting the work of disbudding and stopping. On old trees first thin out any thickets of shoots there may be, leaving only enough to just clothe the branches with fruiting spurs. Many of those reserved ought also to be stopped at the fourth or fifth leaf, but where there is good space for laying

in young wood, reserve shoots, well placed for this purpose, to their full length. It is the younger branches that derive the greatest benefit from the warmth of the walls, and which also produce the heaviest crops of fine fruit. Young trees will also require to be attended to, thinning out the young shoots, stopping some of those reserved in order to promote an early and strong growth of leading shoots, or any intended to be laid in between the leaders. Extra strong shoots are apt to develop at the expense of their weaker neighbours and become gross. It is advisable to pull off such robbers, their places being better filled with medium-sized growths. Continue to open out the blinds every night, but fixed heavy coverings will, or ought to have been, gradually taken down, as the growth under these is apt to be too feeble. There should be no syringing of the trees, unless it can be done in time for them to become dry again before cold nights are upon them.

PEACHES AND NECTARINES.—A very little protection seems to have answered well this season, abundance of strong flowers being followed by a good set of fruit. So heavily are the trees laden, that should no destructive frosts be experienced, thinning must commence early, or the leafy growth may be of a very weak character. The first thinning should be very moderate, this being repeated according as the fruits swell and it is seen this may be done with safety. Only a little disbud-ding is advisable as yet in the case of the older trees, as it is possible, and only too probable, that many tender leaves and shoots will be blistered and crippled by cold winds. There should be no cessation in the use of the blinds, while if nothing heavier than fish nets were hung over the trees these ought still to be kept up, as they will do no harm, and may tend to protect the foliage. Fore-right shoots on the younger or more vigorous trees should be at once removed, and many of the side shoots may either be pulled off or stopped at the fourth or fifth leaf, their purpose being to protect and foster the growth of fruit at the same joint. What is wanted is a good sprinkling of young shoots all over the trees, these being required for fruiting next season. Therefore, reserve a young growth at the end of each fruiting shoot, not merely for furnishing wall space ahead, but also for drawing sap up to the fruit below it, and another at the base and on the upper side of the same shoot, these being duly laid in, nearly or quite enough young wood will be formed. When, however, this year's fruiting shoots are extra long, it will be advisable to lay in yet another growth from it half way up, and a few other shoots should be saved and laid in wherever there is blank space to furnish, but avoid crowding.

MULCHING THE TREES.—Where the borders were trampled on in wet weather, and neither top-dressed nor mulched afterwards, there is every likelihood of their cracking badly during the very hot and dry weather experienced in March, and this may mean the snapping of many of the best roots. The rainfall will have to be very heavy and continuous to well remoisten borders in this bad plight, and whether or not the weather has changed before these lines are published, there ought to be no delay in carefully loosening the surface and watering freely, liquid manure being given to those trees that have not had much fresh soil or manure at the roots for some time past. A fairly heavy mulching of strawy manure will then save much subsequent trouble and labour, and serve to keep the roots active near the surface.

STRAWBERRIES FLOWERING EARLY.—It is not often Strawberries flower so early as they are doing this season. By the end of March young plants of Noble on raised sunny borders were quite gay, and nothing short of covering with either blinds, mats, or thick Fir branches saved the flowers from the frosts experienced every morning. After the fruit is set there is less need for this protection, and the covering may well, therefore, be transferred to the later beds or rows, which also promise to flower very early. Strawberry flowers, being so near the ground, are more susceptible of injury than the flowers of fruit trees generally, and the losses last season, owing to the blackening of the

first strong blooms, were very severe. The injury is frequently done before the petals are unfolded. In many cases it may yet pay well to run a rail or line over single rows for the purpose of supporting a strip of common scrim canvas or coarse cotton shading material thrown over every night. If preferred, a temporary framework of Bean stakes can be formed over beds, and blinds, mats or branches of Evergreens thrown over nightly. If a soaking rain has not fallen before these lines appear in print, many early beds with the fruit set will require to be freely watered, the mulching with strawy manure having been given some time previously.

W. IGGULDEN.

ORCHIDS.

THE changeableness of April weather is proverbial, but the present season seems to have upset all our notions of what this month usually is. Daily, up to the time of writing this calendar, it has been bright sunshine, and the shading of the houses gives no trouble at all. Such pleasant weather is a boon to everybody, but much more so to gardeners. The rather cold east winds prevent the too rapid expansion of the Orchid flowers, and also their too sudden decay. Some Orchid flowers are naturally of a fugacious character, but we want them to remain with us for as long a period as possible, and the cooler weather is rather more in their favour. At present we have a large number of plants of the *Dendrobium fimbriatum* type in flower; some of the large specimens have scores of lovely spikes dangling at the ends of the rod-like growths. The variety *D. oculatum*, grown also as *D. Paxtoni*, is conspicuous by the narrow blotch on the lip. *D. densiflorum* is a lovely species with larger denser clusters of bright yellow flowers. *D. densiflorum* Schröderi is a lovely form of the species; the flowers are larger, the sepals and petals whitish, the lip yellow. A truly beautiful *Dendrobium* which gives great pleasure and is linked with them is *D. Farmeri*. The flowers vary in colour from white to deep yellow. There is a variety grown as aureo-flavum, and another as albiflorum. As the plants come into bloom it is a good plan to take them out of the Cattleya house and place them in a warm greenhouse with a dry atmosphere, as under such conditions the flowers last as long again. *D. thyrsiflorum* and its varieties come in later and considerably lengthen the period of flowering. When the flower-spikes pass away the plants must immediately be placed in a warm house with a moist growing atmosphere, and if any of the plants need repotting now is the time to do it. All the above succeed best in flower-pots nearly half full of drainage, and they need not be pinched for root room, as all of them form roots freely. The best compost is good fibrous brown peat and green Sphagnum chopped up. All sour material hanging about the roots of the plants should be removed, and the plants must be repotted rather firmly, and if any of them are rather top-heavy, they should be made secure with sticks inserted firmly into the potting stuff. Nearly all the *Dendrobiums*, evergreen and deciduous, as they pass out of bloom may be treated in a similar manner. Many of them require basket, instead of pot culture, and here I would like to remark on the method of doing the work. Let it be done not only well, but neatly. I was on one occasion looking over a large private collection of Orchids with a friend, and the thing that struck me most was the slovenly manner in which the plants had been repotted, re-basketed and surface-dressed, and my friend, I found, had also made a note of it. Some remarks were made last week about the treatment of *Masdevallias* and other cool house Orchids. The Cattleya house requires a good deal of attention at this season, and one cannot give the plants quite so much light and heat as might be desirable, because what might be best for the plants may cause the flowers to fade far too rapidly, and as this is the season for a brilliant display of bloom, we have naturally to adopt the course of treatment likely to prolong it, that is, a rather cooler atmosphere,

not so much moisture in it, and less heat than should be advised for growing plants.

Where a speciality is made of Orchids, it is well to have a show house for those in bloom, where the plants can be taken to an atmosphere and other conditions favourable to viewing them with pleasure, for when this is done, the plants not in flower can get the treatment which they really need, and the flowering plants can be taken back again as the bloom passes away. I was admiring the healthy appearance of the plants in a celebrated collection the other day, and the gardener told me he did not ventilate the Cattleya house so freely by day as he did by night. The bottom ventilators were shut by day and the top ones only opened, and this, as explained to me, was to prevent a current of dry air passing through amongst the plants. Good cultivators who have that interest in their plants that will win them success are constantly looking out for the best methods of culture, and in this instance the Cattleyas had not been doing satisfactorily; but a change for the better took place when the system of ventilation was changed. Both top and bottom ventilators are opened at night. I observed that other plants were doing well with the Cattleyas. *Vandas* of the *V. tricolor* and *V. suavis* types were furnished with healthy green leaves down to the Sphagnum Moss on the surface of the flower-pots, and they also produced abundance of flowers. Especially fine were the *Pleiones* of various species grown in a light position near the glass roof, with plenty of pot room, the potting material being loam, peat, and Sphagnum Moss. I do not remember ever to have seen such vigorous healthy masses of *Pleiones*, and found that in repotting them the bulbs were disturbed as little as possible; they were not separated, only the old dead bulbs were picked out; the mass of bulbs merely had a shift into larger flower-pots.

Many plants of much value are now in bloom in the warmest house, and the same remarks apply as to the desirability of removing the flowering plants to a cooler place until the flowers fade, when the plants may be placed in the position from whence they were removed. The various species and varieties of *Phalanopsis*, such as *P. amabilis*, *Sanderiana*, *grandiflora*, *Stuartiana*, *Schilleriana*, and other allied forms, will now be starting into active growth, and it may be necessary to re-basket or surface-dress some of them, but it may not be advisable to interfere too much with the growth of valuable specimens, and if they are doing well it is perhaps best to let well alone, for nearly all the healthy sound roots will be found outside of the material contained in the teak baskets. Any decayed matter may be removed and be replaced with clean fresh Sphagnum and potsherds. Several species of *Grammatophyllum* are now in cultivation, and it is well that these and other interesting Orchids should find a place in the warmest house. *G. Ellisii* is not the least beautiful and interesting; it starts into new growth at this time, and succeeds best in a teak basket. When growing a deal of water is needed, but avoid wetting the young breaks, as they are liable to damp off. Keep up a high temperature now in the warm house, 75° to 80° by day, 68° to 70° at night.

J. DOUGLAS.

PLANT HOUSES.

STOVES.—Plants that were resting through the winter will in most cases be now growing apace. Overcrowding has already been alluded to, but further means as far as it is possible should be taken to prevent plants from spoiling each other during growth. In most cases it will be probable that some few things can be removed into a house slightly cooler; if so, this will be an assistance. Those who have been so placed as not to be able to propagate young stock during the winter and previous autumn should now take advantage of the first opportunity for getting this work done. If it cannot be done successfully in the stove itself it is possible to arrange for it in pits or in frames, using fermenting material for bottom-heat in the former

with pipes for top-heat, or for both purposes in the latter and where there are no pipes. Those who are so placed as to have to resort to this plan cannot do better than give attention to it at once. It will provide a capital means for propagating *Crotons*, *Allamandas*, *Gardenias*, *Ixoras*, and such like popular plants from cuttings, and *Dracenas* by means of sets or eyes. In all cases of cuttings, small pots and one cutting in each are preferable to larger ones with several in each of them. Short cuttings are better now than any of greater length, as there is all the summer before them for growth, besides which they will strike more quickly. All the available room should now be taken up for propagation, so as not to lose the season.

Although the growth of plants is now satisfactory, or at any rate should be, the progress amongst the insect pests will, on the contrary, be discouraging, and will require all the energies of those in charge to keep them down. Where every effort has been made in the winter to get rid of the mealy bug, and it has been reduced to a large extent, every possible attention should now be given with the determination to entirely eradicate it. Stragglers will be found here and there very frequently, and it is only by unremitting (not periodical) searching out that success can be expected in that direction. Give them no peace whatever or chance of further increase. By following up this scrutiny day by day, it will not take nearly so long in the end as where any interval elapses. It is worth any self-sacrificing effort to get rid of this nuisance and once for all to save the labour incurred in periodical cleaning or attempts at it. It will be a great mistake to let this chance slip by, for the bug will, with increased heat and moisture, increase rapidly and the case be as bad as in former years, all intervening labour expended being, so to speak, completely thrown away. Of other insects, the aphides in one form or another will also give trouble, but on no account allow them to go on increasing for a few days when they are detected, but fumigate at once, or, what also is a good plan, syringe occasionally, but not necessarily heavily, with soft soap and quassia "extract," a weak solution of which is a great deterrent and is also equally applicable to thrips, as well as being distasteful to red spider. Scale in one form or another will also want very closely looking after, for this also increases apace now. A deal may be done to destroy this insect by fumigation, the young ones being killed after two strong applications (not sufficiently so to cause injury), and if this be followed up, the ultimate result is plain enough. White scale, I ought to say, is an exception; this is a tough customer to get rid of, but it may be done by sponging with strong insecticides, giving it no peace.

Many plants that have made a good start will now be all the better for a stopping, so as to equalise the growth. *Allamandas* and *Bougainvilleas* come under this category, the good effects being more plainly evident in the former. All the shoots should be stopped so as to produce an even break; this is the way to produce simultaneously a mass of flower upon specimen plants, from ten to twelve weeks being required to get the plants into bloom from the time of stopping. The stove *Vincas* and the shrubby *Clerodendrons* should be pinched frequently so as to form good bushes, allowing six weeks to get them into flower. *Ixoras* should be treated to a stopping also to regulate the flowering, but these require about sixteen weeks on the average, a few kinds, as *I. javanica floribunda*, a little less; *I. Prince of Orange* and *I. Williamsi* the stated time, and *I. coccinea* a little longer. *Rondeletias* take about the same time. All small plants should as a matter of course be frequently stopped, so as to form a good groundwork for a future plant. A few plants well grown are infinitely better than double the quantity of inferior ones. It is only by frequent attention to this work that nice compact bushes can be obtained. When once a good break has been secured upon *Dipladenias*, they should be allowed to have their head freely so as to make flowering

growth. *Stephanotis floribunda* will not bear stopping to regulate the flowering; this must in this case be done by keeping the plants a trifle cool and dry, starting ultimately in a brisk heat ten weeks before they are wanted in bloom. Where climbers are trained upon trellises do not on any account follow up a frequent tying in of the young wood, but let it be well advanced and be showing for flower first, otherwise the growth of the terminals will be checked.

JAMES HUDSON.

DESTROYERS.

THE BLACK CURRANT MITE.

THE Board of Agriculture has issued a pamphlet dealing with the Black Currant mite (*Phytoptus ribis*). Complaints of the prevalence of this mite in the Black Currant plantations have come recently from many parts of the country. It has increased rapidly in the past four years, having been transmitted from one place to another with cuttings and young Black Currant bushes. In some plantations this pest has spread so fast that at least 50 per cent. of the buds are full of mites. A Black Currant plantation of twenty acres in extent in Kent was visited lately, and it was found that almost every bud was distorted from the action of the mites within it. The mites were feeding upon the contents of the buds, as was seen plainly when a section was placed under the lens of a microscope. The effect of this will be that these buds will be abortive, or at least fruitless. Stunted leaves may be put forth which will in all probability fall off in the early summer, but no blossoms can be formed from these infested buds. There were no eggs in the infested buds that were thus examined. Examinations made in the spring of last year showed that there were many eggs in the infested buds, and mites in different stages of growth. Mites were also detected in the act of travelling from one bud to another. At all events, they were upon the spaces of the shoots between the buds, so that it may be inferred that they were moving on in search of food. They have remarkable locomotive power considering their minuteness, and get across the field of the microscope so quickly that it is difficult to examine them while alive. There are many species of these gall mites. One attacks Lime trees; another much injures the Pear crop. The Apple, Hornbeam, Yew, Alder, Willow, Maple, Plum, Birch, Peach, and other trees have their respective species. The Vine also is injured by one species, and it has been recently discovered that the Raspberry is attacked by one of these creatures, which has been styled *Phytoptus rubi*. The *Phytoptus ribis*, like all the species of *Phytoptidae*, has only four legs. These are six-jointed and furnished with bristles upon their last joints, and are prolonged into a pointed claw having underneath slightly toothed hooks. The mite has a snout for sucking the juices of the buds. At the tail is a pair of long stout bristles, and there are three other pairs of shorter bristles upon its body, one pair near the long tail bristles, and two pairs near the head. These seem to help locomotion or to steady the creature in its movements, which are wonderfully rapid. In colour it is light grey. Its body is thickly covered with spots or striae. It is indistinguishable with the naked eye, and nothing can be made of it with the strongest pocket lens. Eggs are found in the buds during the spring. They have been noticed as early as February 10. They are rather more round than ovoid in their early stages, colourless, and abundant. It is not known when egg-laying ceases, but probably as soon as the buds have expanded, or, in cases of a bad attack, when the buds have shrivelled up and the mites are ousted from their homes. They stray about upon the leaves and shoots, and as they make their peculiar gold-coloured galls upon the young and tender twigs, as well as upon the sheathing scales, or embryo leaves of the buds, it is believed that they live upon these, if not upon the leaves

also, until the buds are again formed. In January many deserted galls were noticed upon young shoots and less frequently upon older shoots; they still retained their golden hue in some cases, though many had become blackened. Some infested buds were examined in November, 1892, and the mites were found under the first sheathing scales. During the hard frost of the first week in January, 1893, the mites were found either under the third sheathing scale, or quite within the centre of the whorl. Though the thermometer registered from 20° to 29° (Fahr.) of frost during the week, the mites were most active and feeding, as taken from buds hard frozen.

MODES OF PREVENTION AND REMEDIES.—When Black Currant bushes are planted they should be carefully examined for *Phytopti*. If there are any signs of unnaturally swollen buds the young bush should not be planted. In taking cuttings in the late autumn those from infested bushes must be rejected absolutely. Infestation is easily seen then by the abnormal buds. Infested bushes should be cut very hard, and every particle of the cuttings carried away and burnt. In the spring the bushes should be syringed well all over with a solution composed of 1 ounce of Paris green to from 11 to 12 gallons of water, with 2 ounces of fine wheat flour added, or 2 ounces of soft soap, to make the solution adhere better. The Eclair "Knapsack" pump may be employed for this, and it must be impressed upon the labourers to direct the spray over every part of the Currant bushes. Another solution for spraying, to be used in a similar manner, may be composed of 5lb. to 6lb. of soft soap, mixed with the extract of 8lb. or 9lb. of quassia chips, to 100 gallons of water; 3 quarts of carbolic acid might be substituted for the quassia. Spraying with these solutions should be repeated in the autumn before the weather becomes cold, and just after the leaves have fallen, if possible. This will economise liquid and labour, and will affect the mites before they get into the buds. Directly after the leaves have fallen it would be desirable to put hot lime round the stocks and dig it in at once, so as to bury the leaves with any mites that may be upon them, and thus prevent any chance of their getting up the stems. In very bad cases it would pay to cut the bushes close to the ground, and in the autumn and early spring to syringe the stocks with the Paris green solution, or the carbolic acid solution. This would entail the loss of one year's crop only.

Insects in manure.—Mr. T. M. Franklen will be glad to know whether the insects in the bottle of farmyard manure sent herewith are of a kind injurious to Vines and the garden generally, and if so, what steps should be taken to get rid of them. The manure has been put on the Vine borders, but it is only just lately that the insects in it have been observed.

*** In reply to the above, the insects you find in the manure are mites. They will not, as far as I know, injure the Vines. Boiling water kills them instantly. If you were to water lightly with boiling water you would kill them all.—G. S. S.

Insects in Primula soil.—I am greatly troubled with a white grub which spoiled half my Primulas, and I found a great many in my Geraniums when potting them off the other day. I send a few for your inspection, and shall be obliged if you can give me any information respecting them as to their origin and the best means of getting rid of them.—P. WATSON.

*** In reply to the above, your plants are attacked by the grubs of the black vine weevil. The only practical way of getting rid of them is by picking them out from the roots of the plants. In that position it would be very difficult to reach them with any insecticide, and if you could, what would injure the grubs would ruin the plants. Somewhat later in the season look out and destroy the parent weevils, which are nearly black and about half an inch long. They only feed at night,

hiding themselves by day under any shelter they can find, and concealing themselves so artfully, that they are very difficult to find. They feed on the foliage of various kinds of plants, and when the injuries they cause are noticed, white sheets should be spread under the plants before nightfall, and when it is dark the plants should be shaken over the sheets. Of course, a light must be used, the brighter the better, as it sometimes has the effect of making them fall as if dead. The plants should also be well looked over with the light.—G. S. S.

CHRYSANTHEMUMS.

CHRYSANTHEMUM RAISERS.

A REMARK in THE GARDEN a few weeks ago that the French raisers were played out has led me to attempt to find how far it is true. I have thought a fair groundwork may be found in the list of good all-round Japanese varieties for purposes of exhibition lately compiled by Mr. C. E. Shea. That gentleman gives sixty-nine kinds, which may be divided as follows:—

FRENCH RAISED.

Viviani Morel	Mme. Baco
Mlle. Marie Hoste	Comte F. Lurani
Etoile de Lyon	Jeanne Delaux
M. Bernard	Mlle. Lacroix
Vice-President Audiguier	Meg Merrilies
Boule d'Or	Gaetano Guelphi
Comdor	Marguerite Marrouch
Mme. John Laing	Marsa
Val d'Andorre	Hamlet
Alberic Lunden	Mons. H. Elliott
Bouquet des Dames	Japonaise

The next is a list of sorts credited to English raisers, but I am disposed to think Continental seeds played a very important part in their production:—

Stanstead White	Edwin Beckett
Sunflower	Mrs. E. Beckett
Avalanche	Eynsford White
C. Blick	Mrs. F. Jameson
Florence Davis	Criterion
Gloire du Rocher	

AMERICAN SEEDLINGS.

Col. W. B. Smith	Coronet
Lord Brooke	Mrs. C. H. Wheeler
G. W. Childs	Ruth Cleveland
Puritan	Gloriosum
J. S. Dibbens (synonymous)	Mrs. J. S. Fogg
F. A. Spaulding	Florence Percy
W. W. Coles	Sylphide
Miss Anna Hartshorn	Mrs. Elsie Allen
Mrs. E. W. Clarke	Wm. Tricker

SORTS INTRODUCED FROM JAPAN.

Edwin Molyneux	Lady Lawrence
W. H. Lincoln	Golden Dragon
Lilian B. Bird	Mrs. Alpheus Hardy

ENGLISH RAISED.

W. Seward	G. C. Schwabe
Miss Dorothea Shea	A. H. Neve
J. Shrimpton	Excelsior

OBTAINED FROM SPORTS IN THIS COUNTRY.

R. Brocklebank	Kate Mursell
Sarah Owen	Mrs. H. Broomhead
Carew Underwood	C. E. Shea
Annie Clibran	

Thus it will be seen that out of sixty-nine kinds, twenty-two came direct from France, and if we take the eleven doubtful ones, thirty-three, or nearly half. Our French neighbours in Viviani Morel may point to what is admitted on all sides to be the best Chrysanthemum yet raised, and they can claim the largest—Etoile de Lyon. In early and semi-early varieties they are easily first in the race, and if the novelties come to us in exceedingly large numbers, there are among these classes some very pretty flowers. Of late years we have received from this source several capital additions to the incurved section, and which appear to be *bona-fide* seedlings. Jeanne d'Arc, M. R. Bahuant, Mme. Darrier may be cited, and I

saw during last winter a new one of this class from M. Calvert which is likely to turn out a real acquisition. If I mistake not, a real gem will also be found in a Japanese kind sent from the other side last year, but seen only by a few persons here. It is after the character of M^{lle}. Marie Hoste, but there is a richness in its florets not to be found in any other ivory-white Chrysanthemum I have seen. Mrs. C. Harman-Payne has not yet been sufficiently spread to be often seen. This, however, is certain to take a high position as an exhibition flower. There are many taking characteristics in the best of the Continental varieties. They are of comparatively easy culture, and the flowers most attractive and graceful in form and colouring. Among the American-raised kinds there are many of remarkable beauty, but almost all require some special mode of culture, and many of them take the form—by many people not considered pretty—of the loosely incurved. For perfect grace, the form of some of the new English seedlings, such as W. Seward, Beauty of Exmouth, J. Shrimpton, as well as colour, leave little to be desired. I was interested in an article by Mr. Iggulden lately on raising Chrysanthemums. In getting only two or three worth growing again, he is more fortunate than I was. A couple of years ago I was induced to try some seed sent to a gentleman direct from Japan. Over 100 plants were duly raised and grown on to flower. In the matter of foliage they gave great promise, and I was naturally cheerful in anticipating the blooms. As nearly all came single, or at the most semidouble, my hopes became somewhat cooled, but among them some half-a-dozen seemed to have nice colours and florets, that I determined to try them another year from strong cuttings. A friend tried them, too, but after giving them most careful attention, we both concluded that they had only splendid robust foliage to recommend them, and so from the over 100 seedlings not one was worth keeping. My first and only attempt to raise seedling Chrysanthemums was an utter failure, and until I try to do as Mr. C. E. Shea has done successfully, namely, hybridise and save my own seed, I shall leave to others the great pleasure of improving by seedlings the existing varieties of our autumn flower.

H. SHOESMITH.

AMERICAN CHRYSANTHEMUMS.

OUR attention has been directed to a letter appearing at p. 244 of your issue of March 25 upon renaming Chrysanthemums, and as the integrity of our house is called into question, we beg at once to refute the statements made by your American correspondent, so far as they apply to us, as utterly unjustified and calculated to injure our reputation. Whatever may be the system of finding new varieties in America, we know that we were one of the first English houses to import novel forms of this beautiful flowering plant direct from its native home in Japan, and we have for several years past introduced many popular varieties, and it takes but casual reference to our note-book to readily authenticate the history of the two forms your correspondent indicates.

MRS. DUNNETT was imported by us direct from Japan in February, 1886, and sent out by us in 1888.

MISS CARTER, presumably Mrs. James Carter, was imported direct from the largest grower in Yokohama in April, 1889, under letter E, and described as "Cotton Ball, thin white interwoven petals."

Here, then, we have the true story of these two novelties, and we cannot imagine why, as your correspondent contends, we should require to go secondhand to America when we can so readily procure the "pick of the basket" direct from Japan. Surely there is some mistake, as it is well known that the best Chrysanthemums find their way to America *via* England.

JAMES CARTER AND CO.

Chrysanthemum Charles Davis.—The Chrysanthemum is naturally of a sportive character, and several of our best varieties have origi-

nated in this way, while in many cases the variation exists but for a single season, and the following year the plant reverts to its normal form. The variety in question, Charles Davis, promises to be one of the most useful varieties we have, and one that will no doubt become popular. It is a sport from the well-known Vivand Morel, which made a far more rapid advance in favour than most new Chrysanthemums, and is now grown by everyone with any pretensions to a collection of these beautiful autumn-flowering plants. In Charles Davis the blooms, instead of the rose and white of the typical Vivand Morel, are of a bright yellow, tinged more or less with bronze. The sport is, therefore, totally distinct in colour, and, judging by the flowering examples I recently had the pleasure of seeing, it appears to be quite constant. Of course, one cannot judge much of the qualities of a Chrysanthemum flower in the middle of March, but a Vivand Morel in all but colour will be a decided acquisition.—T.

CHRYSANTHEMUM GOLDEN GEM.

It will, I think, be a long time ere this variety is superseded for late blooming. On March 5 I cut some very nice fresh blooms of it, not quite so good, perhaps, as those of a couple of months ago, but very welcome nevertheless. White flowers may be had in fair abundance through February, but yellow ones are not nearly so plentiful. For this reason nice blooms of the bright tint of Golden Gem are very acceptable. It is curious how the flowers of this Chrysanthemum vary in colour according to the season at which they open. Those that expand at the latter end of December have a decided tinge of apricot, or what is often called terra-cotta, in them. This is the more pronounced if disbudbing is practised; indeed, if the plants are grown strongly and but one bloom is allowed to remain to a shoot, the flowers are very charmingly coloured. The first time I grew Golden Gem in this way, I thought when the first bloom opened that I had got a tolerably distinct sport. The flowers that open after December have little or none of this soft tint in them, but come of a bright clear yellow; at any rate such is my experience. I never strike this Chrysanthemum before February, and cuttings put in a month later will make little specimens in 7-inch pots, as this variety grows much more freely than the larger portion of the family. Last year I struck some as late as April. These were shifted from 6-inch pots, and it is from them that the latest blooms were taken. Plants not stopped will bloom well in January, but if they are stopped for the last time in August, it will throw back the crop of bloom well into February and up to March.

J. C. B.

SHORT NOTES.—CHRYSANTHEMUMS.

Chrysanthemum Mrs. Dudley C. Hall.—A yellow incurved coming over from the States, is a sport from St. Patrick. It was certificated by the Massachusetts Horticultural Society, and also at the Madison Square Exhibition, New York.—C. H. P.

Chrysanthemum Tuxedo.—This is a greatly improved Mrs. Falconer Jameson, the broad petals having the deep orange hue of the old pot Marigold flowers. The habit of growth is peculiarly dwarf and sturdy, and that, allied to the striking colour and beauty of the flowers, promises to make it one of the most popular at the autumn shows. As its name implies, it is of American introduction.—A. D.

Chrysanthemum Mrs. Falconer Jameson.—I am glad I gave Mr. Molyneux the opportunity of explaining himself *re* the above Chrysanthemum. Even with his explanation I do not consider that the bud he mentions gives the best flower. I think it was Mr. Shoesmith who first recommended this bud, and for two years I adopted it, but last year I found that plants topped in March, besides giving a little later flowers, gave blooms of much better quality.—A. YOUNG.

Chrysanthemum names.—The Americans are on the right track to please some of us who have had hard work to do in cataloguing. From the 1893 lists of American seedlings I select such gems as follows: Turban, Defiance, Autocrat, Grenadier, Nankin, Polo, Creole, Falstaff, Temptation, Truth, Portia, Wang, Pacific in what I call one-word names. In names of two words the following seem to commend themselves as praiseworthy attempts to adopt concise distinctive nomenclature: American Flag, Amber Queen, Mark Twain, The Tiger, Sun God, Sans Peur, White Gem, Golden Gate, Harvest Moon, Rosy Queen, Santa Cruz. Out of the very large number of new American seedlings to be sent out this year there is hardly an unintelligible or over-lengthy name among them. The worst of the first-class I can find is Wang, and in the other perhaps Princess of Chrysanthemums takes the leading place. But American florists, I should say, are not answerable for these; they look too much like Oriental names.—C. H. P.

ORCHARD AND FRUIT GARDEN.

GRAPE MUSCAT HAMBURGH.

It is much to be regretted that this high-class Grape is so very unreliable that but few growers care to devote house room to its cultivation. At its best it is of taking appearance, and is so much appreciated that it would rightly be placed before any other black variety in open competition, the Muscat flavour and aroma being even more pronounced than in the case of the Muscat of Alexandria. Mr. Barron in his "Vine Culture under Glass" states that it is a very old variety. For a time it was lost sight of, but was again brought into prominence by Mr. Snow, who named it Snow's Muscat Hamburg. Being well advertised, if I remember rightly, by Mr. A. Henderson, of the old Pine-apple Nursery, there was a very great demand for planting Vines, and it was thought that over propagation was the principal cause of the variety failing to do well at the outset, but a longer acquaintance with this Muscat Hamburg demonstrated only too conclusively that no reliance whatever could be placed on it. Rather more than twenty years ago, Mr. Venn, living near Bristol, caused some sensation among Grape growers by showing repeatedly very superior bunches of a black Muscat-flavoured Grape under the name of Venn's Seedling. Each time I saw these exhibited I was much impressed with them, the bunches being medium-sized and compact, the berries fairly large, oval in shape, perfectly black, and richly flavoured. Evidently numerous other gardeners also formed an equally good opinion of Venn's Seedling, as large numbers of Vines were bought, planted, and in the course of two or three seasons cut out again owing to its soon being discovered that it was an old acquaintance under a new name.

That the true old Muscat Hamburg can be grown to perfection in some few places there is no gainsaying, and if we can discover what conditions are most suited to its requirements this will be a step in the right direction, as there are numerous gardeners who would be only too pleased to succeed with the variety. Mr. Goodacre at Elvaston Castle, near Derby, has been the most consistently successful with this fickle Grape, and both in his and other instances where it has done well the soil is of a somewhat strong, retentive character. The latter alone will not ensure success, but it is an important factor in the matter. The variety is not easily grown too strongly, and I have never

yet met with an instance of rods in a heated house failing to produce bunches very freely. It is very much the same whether the rods are inarched on the Black Hamburgh or any other stocks or are on their own roots. During the first season or two there may be a slight improvement effected, the berries setting more regularly, colouring well, and shanking but little; but if there is no "back-bone" to the border, or, in other words, the soil is of a light, non-retentive character, a partial or complete failure soon results.

A mistake very commonly made is the selection of what promise to be large bunches, but which only too frequently end in becoming mere frameworks. Instead of selecting the largest bunches that show, the wiser plan is to cut these off and save others considerably smaller. Better have a fairly heavy crop of bunches from 1½ lbs. to 2 lbs. in weight than a small number of great clusters badly furnished with fully-grown berries, and which are therefore an eyesore rather than a pleasure to the grower. Occasionally, extra large, well-set bunches may be met with, but, as a rule, the berries are nearer red than black in colour; while the majority of large clusters give signs of having had far too many small or stoneless berries cut out of them. The small bunches, besides setting and colouring the most surely, are the least liable to shanking—another bad failing of the variety. There ought, then, to be no hesitation about either cutting away the large branching clusters, or reducing them considerably, this being done before the flowering period arrives. While they are in flower, a somewhat high night temperature, or, say, not lower than 60°, should be maintained, and towards midday artificial fertilisation ought to be resorted to. Supposing the Vines are in a house with Black Hamburgh, Madresfield Court, Black Alicante, or other free-setting varieties, some of the pollen from these may well be transferred to the stigmas of the Muscat Hamburgh flowers, this being done either with the soft palm of the hand, or, if the hand is too rough and hard for this to be done in safety, a rabbit's tail may be used instead. If the roots are kept active near the surface and over-cropping is avoided, these medium-sized to small bunches will colour perfectly in an airy house and no shanking be noticeable.

Some of the best examples of Muscat Hamburgh I have ever seen were shown last August by Mr. Bryant, gardener to Dr. Grace—a member of the well-known Gloucestershire cricketing family—at Kingswood, near Bristol, and, it need hardly be added, gained a first prize. The heaviest bunch weighed 3 lbs., and the only fault of that and companions was a thinness towards the points. A photograph was taken of the Vine before the bunches were cut, a part of which has been reproduced and accompanies these remarks. The house is three-quarter span in form, and 20 feet long by 15 feet wide. Other varieties grown with the Muscat Hamburgh are Foster's Seedling, Black Hamburgh, Alicante, and Lady Downes, all having been planted in 1889. Each rod carried two bunches the season after planting, six each during the next, and a full crop or fourteen bunches each in 1891, and again last year. They are started on March 1 each year and gently forced. No special treatment is given in the case of the Muscat Hamburgh, and all being planted in a well-made border consisting principally of strong turfy loam, no manure was given before last spring, when Thomson's Vine manure was applied at the rate of 2 lbs. per square yard and washed in, another similar dressing being given after the Grapes were thinned. Last season

Dr. Grace had every reason to be proud of his Grapes generally, and the Muscat Hamburgh in particular. W. IGGULDEN.

Peaches and sunshine.—I am not in a position to dispute "Y. A. H.'s" assertion that hot sunshine is inimical to flavour in Peaches, but I do know that fine flavoured fruit is grown in countries where the summer is much hotter than with us. The Peaches grown at Montreuil, for instance, are of excellent quality, and everyone knows that the summer heat in the neighbourhood of Paris is much more intense than in this country. The in-

us very much finer than has hitherto been the case. Brilliant sunshine with good culture will always give size and colour—most important factors in determining the value of any kind of market fruit.—J. C. B.

Retarding Peach bloom.—I have here a long Peach case unheated. During the last winter I untied the trees from the back wall to dress them, as they had a little scale on them. After the trees were dressed, one lot was tied at once and the other left from the wall until the buds began to open. Although both houses were treated alike as to airing, &c., the trees in both were in bloom at the same time. In the front of this house we have a wire trellis about 1 foot from the lights. On this we have both Peach and Plum trees, and although the lights are kept open as much as possible, this year the Peach trees were in bloom as early as those on the back wall. Years ago I used to take them from the wall with a view to retard them, but I have given it up, except where there is any scale or other insects.—DORSET.

Apricots setting.

It is marvellous how freely the Apricots have set in this garden this year. All kinds are equally good. At the present time (April 5) many of them are larger than Horse Beans, and should the weather prove at all favourable, the crop will be a grand one. The trees have not yet suffered from branch-dying, so prevalent with Apricots. Some cultivators think this arises from severe frost. The trees are young and growing on a raised border facing south. Some growers concern cropping the borders in which Apricots and other fruit trees grow. I am obliged to crop every inch of ground, and at the present time I have a splendid lot of Chelsea Gem Pea growing at the foot of the wall. Outside of these I put down

narrow boards just wide enough to walk along and draw down the blinds, and outside of this I have every inch cropped with early Potatoes. I have practised this system for four years with the best results.—J. C., Forde Abbey.

Lifting Vines in summer.—One of the best examples of lifting Vines that I have yet seen is at Shrover Hall, near Cosham, and, considering the early date at which the work was carried out, the Vines have succeeded admirably. The house was a rather narrow lean-to one, about 50 feet long. The Vines are about twelve years old and the Grapes have been annually cut during June and July. Last year the crop was not considered satisfactory in any way, the foliage being much injured by the attacks of red spider. When the last bunches were cut the last week in July the inside border was taken out, an outside one having been added the previous autumn. During the time the inside border was being re-made the roots were covered with mats and kept moist, the outside of the glass heavily shaded, and the foliage kept constantly moist by syringing. These precautions were taken for several weeks after the border was filled up until new roots were being made, the shading being gradually diminished.



Grape Muscat Hamburgh. From a photograph by Mr. W. A. Cotte, Kingswood, Gloucestershire.

dividual who would find fault with the quality of the Montreuil Peaches must be hard to please. In the south of Germany, where the hillsides are covered with Vines, I have eaten Peaches from open walls that were luscious and well flavoured. I cannot say if they were quite as good as the best fruit grown in English gardens, but I should be well content if I never produced worse Peaches. I had always thought that the climatal conditions which conduce to the production of heavy crops were potential in imparting quality to the fruit. If this is not the case with the Peach, it is an exception to hardy fruits generally. Admitting that imported Peaches may never quite equal in flavour those of home growth, they will certainly come to

The depth of soil in the new border is not more than 2 feet. Mr. Hunt, the gardener, is not a believer in a too deep rooting space for Vines, especially where the soil is inclined to be heavy and retentive as here, and consequently cold. At the present time the Vines are carrying a full crop of useful bunches which are just now at the stoning stage. The foliage is stout and of a remarkably deep green colour. Considering the extreme measures taken with the Vines, it shows what wonderful recuperative powers they possess.—E. M.

RIPENING AND PACKING STRAWBERRIES.

SOME varieties are naturally much superior to others in point of quality, but, as far as house culture is concerned, the flavour is largely determined by the cultivator. There is one variety, and only one, that I am acquainted with that is really good, or say fit to eat without such aids as powdered sugar and cream if ripened in strong heat and moist atmosphere, and that is the Vicomtesse Héricart de Thury. This, if ripened late in February in an ordinary forcing house or plant stove, is, provided it has received fair treatment, both richly and sweetly flavoured. Not so Noble and other early varieties under similar conditions. Even Noble can be had quite good enough for most people with a little extra trouble, and is much the showiest and heaviest cropping of the lot. Covent Garden fruiterers are, however, beginning to find fault with Noble, owing probably to the many complaints received as to the pooriness of flavour, and unless market growers take more pains to present it in better condition they may have to forego the services of a very good servant. What is wanted in order to greatly improve the quality of Noble or any other large-fruited variety grown early in pots is much more air than is usually given them during the ripening period. The fruit undoubtedly swells to its greatest size in a strong heat accompanied by plenty of atmospheric moisture, but this is usually at the expense of quality. Those who have houses largely or wholly devoted to forcing Strawberries during the early part of the year ought to be able to ventilate the most freely either opposite or over where the crops are ripening, successional batches getting much of what air they require, so to speak, at second hand. Private growers have to utilise shelves and stages in a variety of houses, the other occupants being most studied. This means either ripening the Strawberries in more heat and moisture than are good for them, or else the labour of moving batches into cooler quarters as they reach the ripening stage. Unfortunately, the fruit, when it is colouring and coloured, is bruised so very easily, and careless handling may be the means of spoiling some of the finest Strawberries. Even this difficulty need not deter anyone from trying to improve the quality of the fruit. Instead of allowing the Strawberries to hang over the sides of the pot, where they often come to grief in a variety of ways, they ought to be carefully propped up with small crutches made from old Birch brooms or Hazel spray, or a rail may be formed for each plant by the aid of Willow shoots, having the ends bent down and thrust into the pots. In either case the fruit would be propped up well clear of the rim of the pots, soil or dirty water, and in addition to presenting a better appearance, ripens more quickly and can be moved more readily. Ripened in cooler, airier quarters, not necessarily in a greenhouse temperature, the fruit is firmer, and therefore better adapted for sending

to a distance than would have been the case if kept in a forcing house, while there can be no two opinions about the improvement effected in the flavour. Even Noble thus treated proved an agreeable surprise to a doubting taster about the middle of March.

There are yet other points to be observed by those who are anxious to place fruit of superior quality before either their employers or customers. If the plants ever suffer badly from want of water during the ripening period, the fruit is liable to be acid in consequence, the other extreme (saturation) being even more certain to have this effect on ripening Strawberries. Half plunging the pots in fresh Moss is a plan to be commended in all cases where the pots are unavoidably much exposed to bright sunshine, this saving the watering-pot considerably and otherwise assisting the cultivator. Standing the pots on squares or lengths of turf is the next best thing, but those who resort to the plan of standing the pots in either troughs or pans of water seldom fail to regret this very poor attempt at economising labour and water. When the water or liquid manure is left in these receptacles, it usually keeps the soil in the pots badly saturated, and the fruit is nearly or quite as sour as vinegar. Boxes are undoubtedly the least trouble, but at present these are seldom used for Strawberries, and all plants in pots need to be gone over and watered if at all dry at least twice daily when the weather is hot and clear and once daily when it is dull. It must also be remembered that Strawberries, being soft and porous, are easily tainted. There ought to be no fumigating with tobacco paper after the final swelling has once commenced, or the chances are the fruit will be flavoured by it permanently. Nor ought farmyard liquid manure or any other strong-smelling manure to be used about Strawberries, or in a close house where they are even, or there may be good cause for complaint. Let them have the benefit of a pure atmosphere as far as possible, and if air is also freely admitted during the ripening period, there ought to be little or no room for complaint as regards the flavour of the fruit.

It is quite possible, however, to spoil perfectly grown and ripened fruit by faulty packing. On no account ought a scented box of any kind to be used for either storing or packing Strawberries in, no matter how short the distance to be traversed may be. None but quite shallow boxes, or those that will only hold a single layer of fruit with soft packing material above and below it, should ever be tried, any attempt to pack a double layer of Strawberries being almost certain to end disastrously. It is also possible to be too economical in the matter of the weight of boxes, and amateur packers are especially warned against the use of their favourite cardboard or other flimsy boxes. The boxes ought to combine lightness with strength, more particularly if the parcels post is the medium of carriage. Anything that is easily crushed or rendered soluble, owing to being soaked with Strawberry juice, is altogether unsuitable for sending the fruit in, nor do I favour light tin boxes, or any with divisions in them. Trays with separate divisions for each fruit, the former fitting in other strong tin boxes one above another in some cases, are about the worst form of strong receptacles that can be devised, the many divisions hindering rather than favouring good packing and travelling. All things considered, nothing answers better for the majority of gardeners and amateurs than the very light, clean, well-made chocolate and other confectionery boxes that can be bought very cheaply from most

grocers and confectioners. A pound of Strawberries, that is to say a fair sized, but not heaped up dish of fruit, can be well packed in a box 11 inches long, 8 inches wide, and 2½ inches deep, and there is nothing to prevent two or three such boxes being tied together and sent either by post or rail. Line the bottom and sides of these or any other shallow box with either a thick piece of cotton wool, very clean Moss, or the softest of wood shavings (I prefer the first-named), cover this with tissue paper, enclose each fruit in either a young kidney bean leaf, a young leaf from a Lime tree, or a young Strawberry leaf flagged, that is to say softened by exposure to sunshine or dry heat, and then pack them flatly, very closely, and neatly together. Place a layer or two of the same leaves, or if available fresh Vine leaves, in either case soft side downwards over the fruit, and on this more tissue paper, finishing off with a sufficient thickness of the packing material used to press down rather tightly when the lid is used. Where so many err is in their tenderness for the fruit they are packing, but they ought to bear in mind that unless all are so firmly fixed in their places as to admit of the box being rather roughly shaken without disturbing the contents, they must inevitably become loosened and crushed in transit. The lid must close down tightly on the packing material. I have also frequently pointed out how unwise it is to nail boxes down too closely, this stupid practice evidently being on the increase, owing doubtless to the ease with which the small wire nails can be driven in. When the time comes for opening these too securely fastened boxes, the lids have to be wrenched all to pieces, and not unfrequently the contents are also damaged. One small nail at each end of the lid is ample, good string doing the rest.

W. I.

HOW TO INCREASE THE VALUE OF LAND.

TO THE EDITOR OF THE GARDEN.

SIR,—Whatever differences of opinion may prevail as to the causes of the present depression in land values and products, there will be general agreement with Mr. Cranston (p. 231), that fruit growing may do something—probably very much—to readjust the balance towards fair and reasonable profits to growers. It is also certain that neither free trade nor foreign competition is solely responsible for the present depreciation in the value of land nor the current depression in agriculture. Other causes equally or more potent have powerfully contributed to these results. Among these, monotonous cropping and poor cultivation have proved the more powerful. For years there has been a general consensus of opinion that Corn growing does not pay, and yet it has been grown all the same, and frantic efforts made to make both ends meet through starving the land of labour and manure. Changes of crops might have yielded far better profits. The more varied the crops, the less risk of failure and the more chances of profit. The chief reason of the great contrast between the commercial condition of horticulture and agriculture to-day is to be found in this, that while the latter has placed its eggs chiefly in one or a few baskets mostly labelled Corn, the horticulturists industriously gather wealth from many sources, and hence to a great extent the semi-prosperity of horticulture and the general depression of agriculture. Nor does the mere gain or loss of the cultivator from either pursuit by any means exhaust the national gain or loss from either. For if it be true, and it is, that the value of land and its products may be measured, like that of most other commodities, by the amount of skill, labour and capital put into them, then the gradual substitution of fruit for Corn culture would soon quadruple land values and products. At the

present time it is doubtful if the labour bill on agricultural land exceeds one pound per acre. Looking over the labour sheet of a large farmer a few weeks since, it scarcely reached this total. A fruit farmer's labour bill over the same area of a thousand acres would probably have reached a total of from ten to fifteen thousand pounds per annum. Only those familiar with the life and ways of rural districts can estimate the enormous difference between a wage of £1 or £10 or more being received and spent in any given area. And this increase of wage does not include the inevitable rise of rent, and an annual expenditure of probably £5 per acre on manure. For fruit and vegetable growing not only brings about a change of crop, but a great increase and quickening of productive forces in the employment of skill and the application of manures. The race for profit may not be to the swiftest, but assuredly it is to skill and enterprise. These have little to fear from foreign competition, less from free trade. Home fruit asks for nothing but a fair field and no favour, uniform rates for home and foreign products, for equal weights and distances, and sufficient security of tenure to ensure the safety and security of invested property.

Neither has the home grower much to fear from the bogey of over-production. If half of our foreign imports could be grown at home, over four millions more money could be invested in our home fruit industries, which would go to increase land values and products and the revival of our national life. And were two millions of our twenty million acres of arable land laid down to fruit, yielding, on Mr. Cranston's very moderate estimate of £10 per annum, a return of £20,000,000 worth of fruit per annum, there need be no fear of glutted markets and lessening profits, for long before this happy state of fruit plenty is realised, our population will have risen to forty millions. When once we become fully awake to the vital importance of fruit as food, and will try the experiment of one fruit meal a day, or a week even, probably Mr. Cranston's moderate estimates of production and consumption might be greatly exceeded. The great point is to make a prompt beginning in the growth and consumption of more and better fruit. Whether the dual process should proceed from above or below is of less moment, though possibly success would be greater and more rapid, as well as more complete, could the process begin at the bottom of the social scale and be worked upwards. Hence one of the chief merits of the lectures on horticulture in the rural districts, and which have given quite a stimulus to the renovation of old orchards and the planting of new ones in various localities. The cookery lectures given by county councils would also prove infinitely more useful were greater attention devoted to the cooking, preserving, drying and eating of home-grown fruits and vegetables. Any and all simple processes that can change perishable products into virtually imperishable commodities will greatly enhance the value of the land and its produce. Hence jam and sugar factories, drying machines, bottling and canning factories may all powerfully assist in making us £20,000,000 a year the richer and happier. It may be necessary to remind the more impatient among us that the cause of home fruit culture and consumption moves forward perhaps almost as rapidly as can be expected. Most substantial additions are being made to its area, useless varieties are being vigorously weeded out, and more skill, capital, and enterprise are being daily brought to bear upon it. The daily and weekly newspapers are also becoming fully awake to the great national and social importance of fruit and vegetables as food supplies and profitable industries.

The *Westminster Budget* of March 17 went all the way to America to show how fruit growing could be made to pay, though it might have found equally convincing statistics, excepting on the one point of the general consumption of fruit, at home. Such statements as the following, however, deserve to be carefully noted by every reader of *THE GARDEN*: "The Western States of America pay to the Eastern £34,000,000 sterling for fruit; that every family and every

guest at hotels have a dish of fruit daily on the breakfast table; that California enjoys 254 days' sunshine out of 365; that there are no strikes, no boycotting, no storms, no floods, no insect pests, and that the railway rates are £5 per ton for 3000 miles." But with all these physical and social advantages, there is nothing in the Californian returns to discourage British growers. Assuming that the term mature in the *Westminster Budget* means a full-grown tree, the value of produce as quoted is often exceeded in our home orchards and gardens. These values are 20s. for Apples, Pears, Cherries, 8s. for Plums, and 40s. for Walnuts. Neither is it at all uncommon at home for young trees of Apples, Plums, Cherries, Prunes to yield 4s. worth of fruit in the fourth or sixth year of their age; whereas a free-bearing Pear, such as Williams' Bon Chrétien, Fertility, or Pitmaston Duchess, would be thought to have done badly that did not yield more than 2s. worth of fruit in the sixth year of its age, or 20s. worth when full grown. In proof of which, permit me to close with the following statistics of home-grown fruits and profits from Cheal's "Fruit Culture" (agricultural series).

Here is the produce of a tree of Apple Warner's King for the years named—

1872	3 large Apples
1873	1½ pecks
1874	2 "
1875	4 "
1876	6 "
1877	7 "
1878	2 or 3 Apples
1879	6 pecks
1880	5 "
1881	4 "
1882	3 "

The average crop for the ten years was 4 pecks per year. These were sold in Chelmsford market at an average of 1s. 6d. per peck. The tree occupied a space of not more than 3 square yards, and calculating an acre of such trees at 8 feet apart, or 681 per acre, the gross returns would be £204 yearly.

The following returns of the gross receipts per acre of the crops named are also from Mr. Cheal's useful book:—

	Per acre per annum.
Strawberries	£12
Raspberries	46
Gooseberries	25
Red Currants	30
Black Currants	34
Plums (standards)	100
Damsons	96
Cherries	100
Apples	60
Pears	50

D. T. FISH.

SHORT NOTES.—FRUIT.

Gooseberry Whitesmith.—A valuable Gooseberry, large and very prolific. The bush is a strong, upright grower and requires room. I have some bushes 7 feet across and 5 feet high. From these I commence picking the first earlies, while the smaller fruit comes in as the latest of all ripe Gooseberries. —W.

Pear Knight's Monarch.—This may do against a warm wall, but as a standard it is always with me disappointing. The fruit falls early, but never ripens. In all probability the trees will be regrafted with another variety, and certainly would have been before but for the fact that Knight's Monarch crops well, and the Pears are sweet even when quite hard; consequently they will always sell at some price. —B.

Apple Worcester Pearmain.—This is an Apple we cannot have too many of, early, beautiful, and with a quality if not first-class, quite good enough to make it appreciated at a time when full-flavoured fruit is none too plentiful. The tree being a slow grower should be planted in good ground or receive attention in the way of feeding. This fine, highly coloured fruit is best sold direct from the tree, as, with me at least, it does not keep well. —E.

Apple blossom.—Is it not unusual to see a profusion of bloom on the last season's shoots? I do not remember to have seen such a quantity of bloom-buds as at the present time, especially on the young shoots. Standard trees of Cox's Orange and bushes of Ecklinville are wreathed with buds from the base of the tree to the tips of the shoots. —E. M.

St. John's Fig.—A dish of this was sent to the meeting of the R.H.S. on Tuesday, March 28, to show its good forcing qualities. Not only does it force well, but it retains all the first crop, this latter being of great importance in Fig culture, as it often happens the trees shed their fruit wholesale just as the second crop commences to form. The fruits are white-fleshed, with green outer skin, the flavour also being good. It has been found one of the most reliable varieties for early forcing. Pingo de Mel is another new variety equally valuable, and possesses the same good qualities as the St. John's. It is, however, somewhat sweeter. I include this variety with the St. John's, as they both do well together and stand hard forcing better than some of the older kinds, giving a heavy crop of fruit in small pots. —G. W. S.

ORCHIDS.

CYRTOCHILOID ONCIDIUMS.

I HAVE been asked various questions by many of my readers respecting these plants, and having received a flower from Mr. Law-Schofield, of Rawtenstall, of the kind known as *O. undulatum*, I will say a few words about them. This flower is the same as that figured in the "Orchid Album" under the name of *O. undulatum*, but the accuracy of the name is called in question by some authorities, who consider this plant identical with *O. superbum*, from which species it appears to differ in the shape of its lip, whilst the colour of its petals, although not of sufficient importance to render it specifically distinct, gives the plant a very handsome appearance. All these plants are natives of the mountains of Colombia, Peru, and Ecuador, where they are found growing at from 5000 feet to 10,000 feet elevation, and never, I believe, lower than 5000 feet. In these regions the temperature is low and the air is laden with moisture; consequently it behoves us to provide them under cultivation with a cool house, paying great attention to the humidity of the atmosphere. I have always found them thrive best when placed at the coolest end of the *Odontoglossum* house, kept well supplied with moisture to their roots and also overhead from the syringe, and given a fair amount of shade. Of course, less water is necessary in the winter months, and syringing must cease entirely, but by no means should the plants feel the effects of drought at any season. The best potting material is the fibre of good brown peat from which all the fine soil has been beaten, mixing this with some chopped Sphagnum. These plants, too, dislike frequent disturbance at their roots, and, therefore, I have found it best to provide at the first a good-sized pot, which, being well drained and the soil light, may be easily changed or top-dressed without disturbing the roots. In the early spring months and sometimes late in the autumn the flower-spikes appear. Whenever the plants do show signs of blooming care should be taken that they are not wetted, and the flower-spikes should be trained up the rafter of the house or in some other position to avoid the great confusion produced by training them round a heap of sticks. All the kinds are a very long time in forming and opening

their flowers, but these when open last a very long time in perfection.

O. CHRYSODIPTERON, of which I received a flower last season from some one, is a beautiful species, with much the appearance of *O. lamelligerum*. The petals are, however, much smaller than the sepals, undulated at the margin, of a rich yellow, blotched and spotted at the base with dark brown. It remains a very rare species, and I believe its native country is unknown.

O. MACRANTHUM.—This plant, which had been known for many years, had not been seen in a living state before it appeared in the collection of Lord Lonsborough, at Grimston Park, near York, some twenty-five years ago. It produces light green pseudo-bulbs some 3 inches in height, smooth when young, but becoming furrowed with age. The spike of bloom rises from the side of the bulb near its base, and it frequently reaches to 10 feet in length, bearing numerous short distant branches. The flowers, the largest in the genus, each measure from 3 inches to 4 inches across; the sepals are yellow, more or less tinged with olive-brown, and the petals clear yellow; the lip is rich purple, becoming yellowish at the end, the centre and the crest white. Its flowers are produced during the spring and early summer, and they last a long time in perfection, so long in fact as to exhaust the plant if they are allowed to remain until they fade. It is found in various parts of the mountains of Ecuador at some 9000 feet and 10,000 feet elevation, and is truly a magnificent species.

O. SUPERBIENS.—This was first found some fifty years ago in Colombia at some 8000 feet or 9000 feet elevation, but it has always been a rare plant in cultivation. It is a very large and showy species, flowering during the winter and spring; the spikes, each some 3 feet or 4 feet long, bear between twenty and thirty flowers, which are each about 3 inches in diameter; the sepals rich chocolate-brown, slightly tipped with yellow, petals slightly smaller, light yellow, profusely barred with chocolate in the lower half; lip small, brown with a yellow crest.

O. LAMELLIGERUM is of more recent introduction, having been discovered about fifteen years ago. The sepals are of a dull brown, having an undulated border of yellow, the dorsal sepal large and broad, the lateral ones long and narrow, petals much crisped on the margin, the upper half clear yellow, the basal part rich brown; the lip somewhat resembles that of *O. macranthum*, being rich purple in the lateral lobes, the front lobe French white, with a white fleshy crest.

O. ZEBRINUM.—This is a species for which we have to thank Mr. W. Bull, of Chelsea, who imported it from the mountains of Venezuela, and flowered it for the first time in England twenty years ago. In growth the plant resembles *O. macranthum*; the spike, which attains a length of 10 feet or 12 feet, is branched, bearing flowers in which the sepals and petals, nearly equal, somewhat narrow, with all the edges prettily undulated, are pure white, transversely barred with lines of reddish purple; lip small, thickened at its base, rich yellow, the front lobe white, with red freckles. A very showy and attractive plant.

O. SERRATUM.—This species is not sought after so much as it used to be, I suppose, because there have been so many poor varieties flower in collections. The plant is one of the introductions of M. Linden, of Brussels, and it was first introduced to the public under the name of *O. diadema*. Its flowers are chestnut-brown, with a narrow marginal border of bright yellow; the petals are beautifully crisped. Its spike reaches some 7 feet or 8 feet in length. It comes from Peru and thrives well under the same treatment as the other species.

O. UNDULATUM.—This is the kind of which I have now before me a beautiful flower, some 3 inches across, from Mr. Law-Schofield. It makes a spike 10 feet or more long, and I have seen it with twenty-four of its large blooms; but, like all the species here noted, there is a very long time between the first showing of the spike and the opening of the flowers. The sepals are large, of a rich bronzy brown, tipped with green, thick and

fleshy in texture; petals white, the basal part blotched and spotted with purplish mauve, leaving the upper half of a clear pure white; the small lip is of a rich purple, white at the point. It comes from the mountains of New Grenada.

WM. HUGH GOWER.

ORCHIDS AT Highbury.

BEING in the neighbourhood of Birmingham the other day, I took the opportunity to visit Highbury to see the Orchids. The generally fine health of the plants clearly demonstrated how well adapted Orchids are for cultivating near our large manufacturing towns and cities, the bad effects of the smoke not being nearly so apparent in Orchids as in other plants. The principal range of Orchid houses adjoins the mansion, being connected with this by a large conservatory and fernery, which lead into a corridor, from which radiate the different structures containing the Orchids and other choice plants—altogether an admirable arrangement, which is also considerably enhanced by a perfect system of electric lighting. Upon touching a button outside the door from the mansion leading into the conservatory, the whole range of houses is lit up, so that it is an easy matter for the owner to step from the door of his residence into the houses, and so be enabled to inspect the plants he is so fond of. Unfortunately, my time was limited, so I was only enabled to take a cursory view. From what I could see, no one genus has more attention bestowed upon it than another, the majority being well represented. *Cypripediums*, perhaps, are the exception, these not being specially cared for by the owner, although a fine batch of *C. niveum* and its allied species was very fine. With this group Mr. Burbury has proved what others have done, that the plants have a special liking for limestone, or, what Mr. Burbury thinks better, small nodules of chalk. *Masdevallias* are well represented, the thriving specimens exhibited at the Temple show last May being ample evidence of the type of plants grown at Highbury. They are cultivated in a small span-roofed structure against a north wall. Those species in bloom were *M. Veitchiana*, *M. Gelenium*, and *M. swertifolia*. The cool or *Odontoglossum* house is a lean-to behind a north wall, and a more thriving lot of plants it has never been my fortune to see. There were splendid spikes of *O. Pescatorei*, *O. Alexandræ*, *O. Cervantesi*, *O. morado*, *O. Edwardi*, and the strongest *O. Rossi majus* that I have ever seen. The Highbury collection is well known to be strong in the best types of *Cattleyas*, those in flower now being fine forms of *C. Trianæ*, including such choice varieties as *Archduke*, *Highburyensis*, *delicata*, &c. *C. Lawrenceana* was also flowering, also *C. amethystoglossa*. A plant that also took my fancy was a fine specimen of *Sobralia macrantha* (Woolley's var.). Large specimens of *Cœlogyne cristata*, *C. cristata alba*, and also the *Chatsworth* var. were very conspicuous; these had been retarded, consequently were blooming later than usual. *Dendrobiums* now being in, these, as to be expected, were in great force. The species and varieties in bloom included *D. nobile* and its varieties, *Cooksoni*, *Sanderianum*, *album*, *grande*, and *pendulum*. I was also pleased to see an old favourite in *D. McCarthyi*. Others just opening were *D. Bensoniæ*, *nigrum*, and *album*, *Paxtoni*, and *thyrseiflorum*. A fine specimen of *Chysis bracteosa* was in splendid form; also *Lycaste Skinneri alba* and *Calanthe Regneri*. In the cool house were several splendid plants of the brightly coloured *Ada aurantiaca*. This latter is an old plant, but well worthy of extended culture, it supplying a colour rare amongst Orchids. In the early part of these notes I made special reference to the splendid health of the different species and genera growing in the cool house, and that the structure had a northern aspect. The inference, therefore, might be that this being the case the plants are subjected to very cool treatment indeed. This certainly is not the case, as during the winter months the plants have a more temperate treatment than that

generally adopted. Other subjects in flower were represented by good specimens of *Angræcum Sanderianum*, *A. Leonis*, *A. sesquipedale*, *Broughtonia sanguinea*, *Lælia anceps*, *L. a. Sanderiana*, *L. a. flava*, *Odontoglossum Roezli*, *O. triumphans*, *O. vexillarium*, &c. Of this last there are quite 300 plants, but, of course, only a few isolated specimens were in flower.

A. YOUNG.

SHORT NOTES.—ORCHIDS.

Lælia cinnabarina.—W. Appleton sends me some flowers of this species, which are very large and of a brilliant colour. This plant quite puts *L. harpophylla* in the background, but it is a great pity it cannot be as easily managed. W.

Cattleya Trianæ.—D. L. Harris sends me a very fine flower of this plant measuring $7\frac{1}{2}$ inches across, the petals being broad and the lip richly coloured. It appears to resemble the fine variety which I received some time ago from Mr. Carr, of Croydon. It is a very fine form. W. H. G.

Cattleya Trianæ delicata comes from Mr. Appleton. The sepals and petals are broad, the lip large, stained in the throat with yellow and slightly tinged on the front lobe with delicate mauve. It is this tinge of colour which causes it to take a secondary place to the pure white-flowered plant (*alba*), which is now, however, more frequently seen in collections. —G.

Cypripedium euryandrum.—J. Holland sends me a magnificent flower of this. The petals are broad and profusely spotted, the dorsal sepal also highly coloured. It is by far the finest form I have seen of this hybrid, which was originally raised by Mr. Seden at Messrs. Veitch and Sons'. You have done quite right in keeping it through the winter in a temperature of 65° and moist. *C. Stonei* having been one of its parents. It requires strong heat. —W.

Orchid blooms from Hinckley.—"S. S." sends me a good form of *Dendrobium nobile*, which appears to be the true old form called *majus*. It is very rich in colour. The *Cœlogyne cristata* appears to have been grown cool, or the flowers would have been past long ago. Two very distinct forms of *Cypripedium Boxalli* are also sent. The light form is handsome; the other very much resembles the variety *atratum*, and such I should mark it. —W. H. G.

Odontoglossum crispum.—Mr. Appleton also sends me two forms of this species for an opinion. The smaller of the two is a very compact round flower. The other is an enormous bloom, measuring over 4 inches across. I should keep this plant and mark it, because if the petals should happen to become a little broader and so fill the flower out, it will become a grand variety. All the blooms were, however, much bruised, for the box when received was quite smashed. —W. H. G.

Cattleya Schröderæ.—A magnificent flower of this plant comes from Miss Orme for my opinion. I do not agree with her in supposing it to be a variety of *C. Trianæ*, because, as I have before remarked, it appears to be quite a distinct plant. In the variety sent the flowers are of a uniform dark rosy lilac, the lip beautifully fringed, stained in the throat with deep yellow, and yielding a delicious perfume resembling White Thorn. It requires, I fancy, rather more warmth than *C. Trianæ*. —G.

Odontoglossum Roezli.—From Mr. Cypher, of Cheltenham, come some excellent varieties of this beautiful plant. One is a fine variety of the normal type, except that the blotches at the base of the petals are larger and of a more intense crimson than I ever remember to have seen before. Another is the variety *album*, quite destitute of any markings on the sepals or petals. The third one, having the petals blotched with soft rose, very much resembles the hybrid called *Blenianum*, said to have been raised between this species and *vexillarium*. I should advise Mr. Cypher to mark this plant, and if possible to compare it with the plant I have referred to. —W. H. G.

Orchid flowers from Rawtenstall.—From Mr. Law-Schofield come some Orchid flowers, but owing to their having been packed on Saturday, the 1st of April, they remained in the box until the following Tuesday, and thus the *Dendrobiums* were shrivelled. The *Cypripedium Rothschildianum* was magnificent, but not quite so fine as one received last year from Mr. Hardy, of Timperley Lodge, Sale, but the pouch more highly coloured.

Flowers of a good form of *Odontoglossum ramosissimum*, the sepals and petals marked with unusually large spots of crimson; a finely coloured flower of *Oncidium undulatum*, mentioned in another place; a handsome form of *Odontoglossum luteo-purpureum*, which I should call *hystrix*, and a richly coloured form of *O. triumphans* were also included.—W. H. G.

BOOKS.

ANNALS OF AN OLD MANOR HOUSE.*

MR. FREDERICK HARRISON has turned aside from his political and positivist studies to write about a beautiful old house in which his family have lived for many years, and of which we published an engraving in *THE GARDEN* during the past winter. Amongst the old houses we have seen, there is nothing in the home counties more beautiful, simple, and charming in colour and form than this house, Sutton Place, near Guildford. The handsome volume before us, bound in purple cloth, bearing the arms of the Weston family, and profusely illustrated with cuts from original drawings by artists of repute, traces the vicissitudes of this old country seat. The frame of mind in which the author set about his task is best described in his own words:—

One by one the old buildings of our country are perishing by accident, neglect or wanton destruction; their memory passes away and their place knows them no more. When the passion for covering this island with railways and factories shall have done its worst, our great-grandchildren will hardly possess a fragment of the older work to recall to their eyes the beauty and life of England in the past. And so it becomes a sort of social duty for those to whom chance has thrown it in their path to preserve such wreckage of old things as the tempest of change has left—any relic that they find still mouldering in the flotsam and jetsam of time. Thus I came to put together in spare days of leisure some memorials of a very beautiful and interesting house, which is a landmark in the history of art and has not a few associations with the history of our country. Pacing up and down the court and watching the hues of russet and orange in the mouldings, or the evening light as it glowed through the jewelled quarries in the oriels, I became curious to know a little more about the builders and the building of it. From what movement of art did it spring? Whence came those amorini over Tudor gates and the Italian arabesques in those Gothic traceries? What manner of life did these walls witness and serve? Of what then were the men whose devices are recorded on the painted glass? As one by one I learned to recognise the story they could reveal, and had found how curiously the house was connected with the tempestuous days of the Eighth Henry and his three children and successors, as I traced all the circumstances of the strange and bloody tragedy which set its mark upon these walls almost before the mortar on them was dry, I began for myself a connected record of the place.

Sutton Place is an ancient manor house on the banks of the Wey, in Surrey, about four miles from Guildford, and as many from Woking. It was built between 1520-30 by Sir Richard Weston in the first outburst of the Renaissance. The material of which it is built bears an Italian rather than an English stamp. It is one of the very few ancient buildings still remaining in our country which are made of terra-cotta and brick without any dressing of stone. As the author observes, the use of terra-cotta not merely as a superposed

ornament, but as a constructive element, is exceedingly rare and instructive. After 370 years of exposure the mouldings remain almost as perfect as when they were cast; nor in the main does the terra-cotta show any signs of decay. Moreover, the house has the singular fortune to retain, at least on the outside, its original form:—

No Elizabethan architect has added a classical porch; no Jacobean magnate has thrown out a ponderous wing with fantastic gables and a profusion of scrolls; no Georgian squire has turned it into a miniature Blenheim, or consulted his comfort by adding a square barrack.

This the author attributes to the fact that from its building till to-day the place has always remained in the same family, and that a family debarred by its adherence to the ancient faith from taking active part in the world of affairs. According to a tradition of the family, the Mass has been continuously celebrated within its walls, more or less openly, until the other day, when a new chapel was built in the park.

Sir Richard Sutton, the builder of Sutton Place, was for thirty-three years the trusted minister and servant of Henry VIII. In 1518 he was sent on an embassy to Francis I. with his brother, the Prior of St. John's, and Sir T. Boleyn. Later he formed one of the brilliant company of knights and nobles that took part in the pageantry known in history as the Field of the Cloth of Gold. His son and heir, a personal playmate and minion of the king, was made a Knight of the Bath at the coronation of Anne Boleyn, and four years later was executed on Tower Hill as one of the reputed lovers of the queen. This is the tragedy referred to by the author in his preface. Yet the other members of the family still retained the favour of the king, and three years after the catastrophe the old knight is found at court still in his offices and in the king's favour. In 1521 he received the grant of the royal manor of Sutton. Two years after the fall of Cromwell, Sir Richard died peacefully in his bed. His brother, the prior of a great monastic house, had died of grief at the dissolution. After the conflict with Spain in the reign of Elizabeth, the fortunes of the house, which still remained Catholic, began to fade. They no longer sought alliances with great houses—the Howards, the Bouchiers, the Stanley-Berkeleys, &c., "whose family burial-place," to quote the author, "was by Tower Hill." They avoided the perils of the court and they took no part in public affairs:—

Thus it has come to pass that the genius of the place has retained in no scanty degree the peace and retirement of a ruin. The gently gliding circles of the Wey, where it issues through the gate in the chalk at Guildford, wind round the house in long enfolding reaches, which on three sides alike shut it off from the neighbouring country. The water-meadows stretch for miles from the foot of the wooded bank on which the house is placed. Far beyond them, on the ridge between Guildford and Farnham, lies the ancient track of the pilgrims from the west to the shrine of St. Thomas of Canterbury. Above Guildford the chapel of St. Catherine and the chapel of St. Martha crown the western and eastern hills. Through the gap where the Saxons bridged the Wey at Guildford the glades of Surrey reach in broken vistas to the weald. To the east, head away in the distance in sweeps of woodland and copse the downs of Effingham and Clandon and Horsley. Broad open upland is all around, nor has our nineteenth century as yet broken the spell. One may watch the brick-work and the mouldings that the old knight raised in the hey-day of the Merry King without disturbance from the world or the echoes of busy life. One listens to the cooing of the wood-pigeon in the shady masses of the Limes;

one may watch the kingfisher skim the unruffled bosom of the Wey and the heron at work in the shallows. And in the evening there come across the warren the murmur of the tumbling bays—the invention that the younger Sir Richard brought out of Brabant—and the beat of the water-wheel of the mill, which is the mill recorded by the Conqueror in Domesday.

As regards the illustrations with which the book is lavishly and occasionally effectively illustrated, many of the cuts are delicate and true. We are not, however, admirers of the processes of the day which are supposed to have superseded wood engraving. Some of the cuts, indeed, appear to us out of tone, and occasionally in the case of landscape cuts the values are partly lost; but in depicting architectural details, the cuts are often excellent. Especially so are those from the photographs of Mr. Sidney Harrison.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY.

APRIL 11.

THE Drill Hall, Westminster, was filled with flowers, chiefly Daffodils, at the usual fortnightly meeting, held on Tuesday last. Novelties were fewer than usual, but many fine groups, particularly of indoor plants, were to be seen. It was certainly the largest meeting held this year, all the available space being occupied.

Orchid Committee.

Awards of merit were given to the following:—

DENDROBIUM NIOBE.—This is a hybrid between *D. nobile* and *D. tortile*, and is a very beautiful form, highly coloured, free, and in every way a useful cross. There is much of the character of *D. tortile* in the plant, but more of *D. nobile*, yet not running closely to either parent. The flowers nod slightly, the sepals and petals rose-purple, deepening towards the apex, whilst the lip is creamy white, tipped with purple, the colour within the throat being deep velvety crimson. In time this hybrid should become popular. From Messrs. J. Veitch and Sons, Chelsea.

CATTLEYA GUATEMALENSIS.—This is a very rare and beautiful Orchid. Three flowers were shown, and thus it is somewhat difficult to judge of its beauty. There is a distinct resemblance to *C. Skinneri* in the flowers. They are of about the same size, and the colouring is very decided; the sepals of a buff apricot shade, neither one nor the other, but a mixture of the two. The pointed, broad petals are shot with a satiny rose tint, the lip deep rose, and the apex of a similar buff tint to the sepals. We should like to see a plant of it, but for distinctness of colouring and expression it is quite unique. From the Rt. Hon. Joseph Chamberlain, Bt., M.P. Birmingham.

CYRTOPODIUM PUNCTATUM SPLENDENS.—Three very handsome plants of this variety of the Brazilian *C. punctatum* were shown, and *splendens* may be accounted one of the brightest Orchids in cultivation. The large spikes are crowded with flowers, each of which is beautifully coloured, and, as in the type, the bracts at the foot of each bunch are coloured in a similar way—rich greenish yellow, barred with chestnut-crimson. The flowers themselves are very brilliant, the sepals olive-green, barred and blotched thickly with chestnut, the petals clear golden-yellow, the lip of bright shades, the side lobes almost scarlet and the front lobes bright yellow, with a broad margin of crimson, while around the crest appears a suffusion of a similar tone. When well grown, as on this occasion, the effect of the heavy spikes of bloom is very rich. This variety preserves the general characteristics of the type, but is in every way finer. From Mr. Wythes, Syon House.

* "Annals of an Old Manor House, Sutton Place, Guildford." By Frederick Harrison. Macmillan and Co., London and New York.

ODONTOGLOSSUM HYBRIDUM (Crawshaw's var.).—This may be added to the long list of beautiful Odontoglossums, and seems to have much of the character of *O. Andersonianum*. The raceme bore six flowers, each of fine shape and bold rich colouring, the whole aspect of the plant betokening a vigorous constitution. The sepals, petals and lip are white, heavily blotched with chestnut-brown and flushed with rose, the crest yellow. It is a distinct and handsome form, one of the brightest that we have seen, although the number of spotted Odontoglossums is very great. From Mr. De B. Crawshaw, Rosefield, Sevenoaks.

A large and interesting group was that shown by Messrs. B. S. Williams and Son, Upper Holloway. The Orchids shown were many in number, conspicuous being the several kinds of *Cypripediums*, *C. Morganiae* especially, which is always grown well by this firm. Other species or forms noted were *C. grande*, the bold, richly coloured *C. Harrisonianum* superbum, *C. caudatum*, and many others—an interesting exhibit of Lady's Slippers. *Odontoglossum triumphans* was shown in fine character; also a number of *Dendrobiums*, as the pretty yellow *D. luteolum*, *D. Findleyanum*, *D. Wardianum*, and *D. chrysodiscus*, which has white flowers touched with delicate rose. This fine group also contained specimens of the brightly coloured *Leptotes bicolor*, *Angræcum Sanderianum*, *Phaius Wallichii*, *Ada aurantiaca*, *Vanda teres alba*, which has a rosy lip, and *Pescatorea Dayana*, which has thick, fleshy, creamy white flowers, the segments tipped with crimson-brown, the lip of a similar tone in front. The foregoing were the chief kinds represented (silver Flora medal). Messrs. H. Low and Co., Upper Clapton, sent a fine group of Orchids, in which the *Cypripedium* was a leading feature. Many species and varieties were shown, and we also made note of the yellow-flowered *Dendrobium*, a species from Moulmein, free in growth and bloom, and very pleasing when shown well. Excellent, too, were *Odontoglossum Roezli*, *Phalænopsis* and *Cattleyas* in variety, *Angræcum Sanderianum*, *Oncidium sarcodes*, and many other plants (silver Banksian medal). A group was also exhibited by Messrs. W. L. Lewis and Co., Southgate, *Dendrobium Jamesianum* being well represented. A note was made also of *Cattleyas*, *Ada aurantiaca*, *Odontoglossum Ruckerianum*, richly spotted, and the bright rose-coloured *Masdevallia Lindenii*. Messrs. Charlesworth, Shuttleworth and Co., Heaton, Bradford, and Clapham, had *Cattleya gigas*, the flowers of fine colouring; whilst Messrs. Pitcher and Manda, Swanley, Kent, had *Cypripedium grande atratum*, a hybrid between *C. Roezli* and *C. caudatum roseum*, the flowers possessing much beauty. Messrs. Sander and Co., St. Albans, showed *Odontoglossum selwoodense*, a pretty type, the flowers yellow, barred with chestnut-brown; *Cattleya Schofieldiana*, sepals and petals yellowish green, the lip reticulated with rose-purple on a white ground; *C. Schroederae* and *Odontoglossum Kranzlini*, a bright type, the flowers yellow barred with chestnut-brown. Interesting hybrids came from Messrs. J. Veitch and Sons, Chelsea; *Cypripedium Elymene* is a hybrid between *C. caudatum Wallisi* and *C. caricinum*, the flowers very pale in colour; *C. melanthus*, a cross between *C. Stonei* and *C. Hookerae*, is an interesting hybrid, and a note may be made of *Cymbidium eburneolum*, which has a strikingly distinct flower of quite a buff colour, the lip white, the margin crimson-brown. Mr. Burberry had *Cattleya Trianae pallida* in fine condition, the flowers very large, white, just touched with lilac-rose. The Rev. E. Handley, Bath, had *C. Lawrenceana ornata*, the flowers very richly coloured, rose-purple, the lip of an intense shade, rich and decided; also *Odontoglossum Andersonianum*. Mr. Wythes, Syon House Gardens, had a fine specimen of *Miltonia stellata*, which is synonymous with *M. flavescens*; it bore about twelve spikes, the flowers pale yellow or creamy white, the upper half of the sepals and petals barred with chestnut-brown.

Floral Committee.

First-class certificates were given to—
SARRACENIA MANDAIANA.—A very fine form, the pitchers bold and tall, and of a very charming

colour, light green, mottled in the upper portion, also the lid with silvery white, the base of the latter of quite a brownish hue. It is well worthy of note by all who care for this class of plants, and thoroughly deserved the award given. From Messrs. Pitcher and Manda, Swanley.

BOUGAINVILLEA SPECTABILIS.—This is a beautiful climber, the flowers large and of a brilliant purple-rose colour, peculiarly rich and telling. From Captain Oldfield, Winchfield, Hants.

AZALEA ANTHONY KOSTER.—This was one of the finest things at the meeting. It is a splendid type, a form evidently of *A. mollis*, of which there are many hybrid forms. The specimen shown was a mass of bloom, and the flowers individually are of large size, over 2 inches across, the petals broad, robust and of a brilliant orange-yellow shade, shot with rose. It is a useful plant for flowering early under glass and is in every way a superb type, brilliant in colour, and remarkably free. A group of it in the garden, backed with deep green leafage, would make an interesting picture, but for indoors it is of value. From Messrs. Lane and Son, Berkhamsted.

Awards of merit were given to the following:—

EUCHARIS LOWI.—A very distinct and remarkably interesting form, a species we should think. The leaf has a somewhat lengthy stem, and the flowers are quite different from those of *E. amazonica*, although quite as pure, fragrant and bold. The segments are distinctly arranged, the outer three rather narrower than the inner trio and the margins curl over a little, but not sufficiently to detract from the beauty of the flower; the inner segments are broad and give to the flower a semi-double aspect, whilst the cup is light green on the inside—a delicate contrast. We know little of this *Eucharis* as yet, but it has every appearance of becoming a thoroughly good garden plant, robust, free and remarkably distinct—a point of no small importance. From Messrs. H. Low and Co., Upper Clapton.

CARNATION PRINCESS MAY.—It appears that Mr. Smith is growing and raising other than border varieties. A small group of seedling Malmaison Carnations was shown and this variety selected for award. The plant is very strong in growth, free-flowering, and bears large bright scarlet-crimson flowers, broad, full, and with an exceptionally fine petal, whilst the fragrance is deliciously sweet. In raising up a race of new Malmaison Carnations, the hybridist in this case has gained marked success, the plants strong in habit and free-flowering, while fragrance is a characteristic trait. We hope that many more good things will come from this garden. From Mr. Martin Smith, Hayes Common, Beckenham.

IRIS SAABI NAZARENSIS.—This belongs to the *Onococyclus* group. A valuable description of this species is given in *THE GARDEN*, February 18, 1893, p. 132, and the form named *nazarensis* is very charming. The falls are about 1½ inches across, greyish white, thickly spotted with crimson, the base of a deep velvety shade—a lovely colour. The standards are almost white, but with a distinct tinge of lilac—a delicately coloured and pleasing form. Shown by Mr. T. S. Ware, Hale Farm Nurseries, Tottenham.

TREE CARNATION URIAH PIKE.—A large group of well-grown plants of this variety was shown. The growth is unusually vigorous and free, the flowers produced in profusion and of very fine colour, also sweetly scented, quite a strong clove fragrance. It is much like the old Clove, the colour deep crimson, petals broad, and forming a full handsome flower. We should think that it has the attributes of a first-class variety—strong constitution, freedom, richness of colour, and scent. A silver medal was also awarded to the group. From Mr. May, The Nurseries, Upper Edmonton.

CANNA PROGRESSION.—This is another beautiful French variety, dwarf, very free-flowering, and bearing blooms of great beauty; the petals are broad, robust, and splendidly coloured, rich orange-yellow, barred and spotted with carmine. It is a welcome addition to the list of dwarf-growing

French Cannas. From Messrs. Paul and Son, Cheshunt.

PYRUS CARDINALIS.—This is a garden form of the well-known *P. japonica*. It is a splendid variety, the flowers large, well shaped, and brilliant crimson in colour, far more so than those of the type. A group of it would make a fine feature in the garden, as it is the best of all varieties for size of flower and brilliancy of colouring. From Mr. Anthony Waterer, Knaphill, Woking.

Daffodils made a great show. The hall was in a large measure occupied with them, but the large displays of Messrs. Barr and Son, Covent Garden, and other firms are always interesting. The *Narcissi* from Messrs. Barr and Son comprised a collection of the several sections into which the family is split up, *Barri*, *Burbidgei*, and so forth. One of the most conspicuous kinds was *Barri Sensation*, the cup margined with clear bright orange-scarlet; also *C. J. Backhouse*, in which also the cup is enriched with orange-scarlet. This type is in good colour this year, and shown boldly, as on this occasion, appears to advantage. Splendid blooms of the trumpet *Glory of Leyden* were in the collection, measuring no less than 5 inches across, the segments pale yellow, and the trumpet of a bright self shade; it is a noble flower. *Gloria Mundi*, yellow cup, brilliant orange; *Shakespeare*, pale yellow perianth, but deeper coloured trumpet; and *Incomparabilis Queen Sophia*, a bold, handsome variety, were also shown. These are only a few of the more interesting, but the collection comprised all leading kinds, also early Tulips and a few hardy plants in bloom at this season. A silver-gilt medal was awarded for the Daffodils and a bronze Banksian for the Tulips. Mr. T. S. Ware had an interesting display of Daffodils, as *Empress*, *Sir Watkin*, *maximus*, *Countess of Annes'ey*, *Golden Spur*, *obvallaris*, &c., besides the brilliantly coloured *Tulipa Boissieri*, *Iris atro-purpurea*, rich chocolate-brown, *I. Helerae*, purple-rose, and the deep-coloured *Muscari atlanticum* (silver-gilt medal). A group of *Narcissi* came from Messrs. E. D. Shuttleworth and Co., the flowers representing many varieties, while hardy plants, as the *Erythroniums*, tufted *Pansies*, *Heuchera sanguinea*, and *Primulas* of several kinds, were also represented. Messrs. J. Veitch and Sons, Chelsea, had bunches of double Daffodils and an interesting series of crosses. Seedling Daffodils came also from Mr. J. Mellender, Hodsock Priory, Worksop, but the most interesting collection was that from the Rev. G. H. Engleheart, Appleshaw, Andover. *N. Ajax* crossed with *N. poeticus* gave a flower very near to *N. Nelsori*. *Sol* is a fine trumpet kind, large and finely coloured, a bold, handsome type. *Firefly* is a pleasing hybrid for its form, the flowers neat, shapely, and white, with a bright orange-scarlet cup. Evidently it has poeticus blood in it. Flowers resulting also from such crosses as *N. Ajax* and *N. triandrus*, *N. Ajax* and *N. poeticus poetarum*, and the white *Ajax* and *poeticus* to show origin of *Leedsii*, were also exhibited. *N. Horsfieldi* × *N. poeticus* gave a flower shorter in the trumpet than the *Ajax* parent. The Rev. N. J. Miller also exhibited Daffodils. A pleasing display of hardy flowers, well set up with bits of sandstone between to give a natural effect, was made by the Guildford Hardy Plant Company, Millmead, Guildford. *Primulas* in variety, *Saxifraga longifolia vera*, *Alyssum pyrenaicum*, *Gentians*, *Polygala Chamæbuxus purpurea*, and the charming *Rhododendron Chamæcistus*, were exhibited (silver medal). Messrs. Paul and Son had a fine group, comprising standard plants, a sheet of bloom, of *Genista præcox* and *Cytisus scoparius Andreanus*, also hardy plants in variety. Brooms grown thus are of much value for decoration (silver medal). Messrs. H. Cannell and Sons, Swanley, had a large collection of Wallflowers, as *Golden Tom Thumb*, *Dwarf Maroon*, very deep in colour, and the double yellow *Cheiri luteus plenus*, besides *Primrose Harbinger*, pure white with yellow centre.

The exhibits of hardy things were numerous. An interesting feature of the meeting was the collection of varieties of *Cydonia* (*Pyrus*) *japonica* from Messrs. James Veitch and Sons,

Chelsea, as rosea, rose; atro-purpurea, deep crimson, very rich; alba, white, tinted with rose; Maulei, smothered with its orange-scarlet flowers—a fine introduction, more slender in growth than *C. japonica*, but blooms in greater profusion—and *C. Moerloosei*, of which a coloured plate was given in THE GARDEN, June 29, 1891. A coloured plate was given of *C. japonica* alba and pink var. in THE GARDEN of August 8, 1891. The same firm also had Waterer's Cherry, *Andromeda speciosa cassinifolia*, and the white-flowered *Eurybia Gunni* (silver medal). Mr. W. C. Leach, Albury Park Gardens, Guildford, showed flowering shoots of *Philadelphus inodorus grandiflorus* and *Salvia gesneriæflora*. A group of Lily of the Valley (*Fontin's* variety), or *Convallaria majalis grandiflora*, to give its full title, came from Mr. E. A. Morse, The Nurseries, Epsom. This is a remarkably fine form when well grown, the bells larger, of the purest white, and very sweet. It is robust in every way. We have had occasion before to refer to it. Mr. Douglas exhibited *Auricula Marmion*, a grey-edged variety of much value, and from the Wisley garden of Mr. G. F. Wilson came flowers of the *Gentianella* (*Gentiana acaulis*), the colours varied and very pretty, especially the pale shades.

Roses were shown well. Two boxes of splendid blooms of various kinds came from Mr. Frank Cant, Braiswick, Colchester. The flowers were of fine character, and included amongst others *Auguste Rigotard*, *Viscountess Folkestone*, *The Bride*, *Niphetos*, *Her Majesty*, *Suzanne Marie Rodocanachi*, *Violette Bouyer*, and *Ethel Brownlow*, very fine. Messrs. H. Lane and Son had specimens of *Polyantha* Roses, such as *Anne Marie de Monttravel*, *Perle d'Or*, *Ma Paquerette*, *Gloire des Polyantha* (silver medal). A similar award went to Mr. P. Perry, gardener to Mr. J. C. Tucker, Middleton Hall, Brentwood, Essex, for a group of pot Roses, well grown and comprising leading kinds. Stove and greenhouse plants were shown largely, and several fine groups were put up by well-known firms. A silver-gilt medal was awarded to Messrs. J. Laing and Sons, Forest Hill, for an extensive and beautiful display. It comprised Lilacs in pots, the deep blue *Leschenaultia biloba* major, *Azaleas*, *Clivias*, *Caladiums*, and other indoor plants in beauty at this season. It is not often one sees a better variety of things. A similar award went to Messrs. H. Low and Co., Upper Clapton, for a miscellaneous collection. *Cytisus Andreanus* was largely represented, also *Staphylea colchica*, the deeply coloured *Genista atleana*, *Correa cardinalis*, *Boronia elatior*, *B. heterophylla*, *Pimelea spectabilis*, &c., a very interesting group, in which each flower was shown in quantity. Messrs. Wm. Cutbush and Son, Highgate, were given a silver medal for a collection of miscellaneous plants, comprising *Erica perspicua erecta*, varieties of *E. ventricosa*, *Mignonette Cutbush's Crimson Giant*, a very fine variety; *Leschenaultia biloba* major, *Pæonies* and *Azaleas*. Messrs. B. S. Williams and Son, Upper Holloway, had a well-arranged group, including a large plant of *Rhododendron McNabianum*, the flowers white, tinged with rose; *R. Duchess of Buccleuch*, the flowers large and white, with a tinge of rose also; *Amaryllises* in variety, *Clivias*, *Azaleas*, *Staphylea colchica*, &c. (silver medal). Messrs. J. Peed and Sons, Roupell Park Nurseries, Norwood Road, had *Ericas* and other miscellaneous plants (bronze medal); whilst Messrs. E. D. Shuttleworth and Co., Peckham Rye, had a large group of *Cycads* (bronze medal).

PRIZES FOR DAFFODILS.

Prizes were offered for Daffodils. For a collection, the premier award went to the Rev. Eugène Bourne, Dunston Vicarage, Lincoln. The flowers were satisfactory and comprised a great variety of kinds. Mr. King-mill, Bushey Heath, was second, the Rev. G. P. Hardon, Hatfield Vicarage, Doncaster, third; and Mr. J. W. Melles, Sewardstone Lodge, Chingford, fourth. The Rev. Eugène Bourne was first also for nine varieties, the flowers unusually fine, and comprising *incomparabilis* Lulworth, *maximus*, J. B. M. Camm, *incomparabilis* C. J. Backhouse, *Empress* and *Glory of Leyden*, all in excellent character. Mr. Kingsmill was second. For six varieties, the Rev. G. P. Haydon was first,

showing *Horsfieldi*, *Sir Watkin*, *capax*, *Emperor* and *Barri* conspicuous; Mr. J. W. Melles being second.

Fruit Committee.

There were some interesting exhibits before this committee, consisting of Apples in quantity, with good collections of Strawberries and vegetables.

First-class certificates were awarded to—

APPLE JACQUIN, a very solid fruit, above medium size, and somewhat resembling *Golden Spire*. It is conical and slightly ribbed, with a bright golden colour and a brisk flavour. It is a grand keeper, and is stated to be a good cropping variety. From Messrs. Rivers and Son.

LETTUCE VEITCH'S GOLDEN QUEEN, a very distinct variety of a light green colour, the growth being dwarf and compact and the heart solid. It is an excellent Lettuce for early sowing, as it soon hearts, and being of a golden colour, every portion presents a blanched appearance. This was sown in January and grown in cold frames, thus showing its value as a forcing variety. From Mr. T. W. Bond, Elstead House Gardens, Godalming.

A collection of fruit was sent from Syon House by Mr. Wythes, comprising New Black Hamburg Grapes well finished, *St. John's Fig*, and a capital lot of Strawberries, the variety being a dwarf Keens' Seedling. Mr. Wythes also sent twelve dishes of vegetables of great merit for the time of year, the varieties staged being *Asparagus*, *Seakale* (very fine), *Sharpe's Victor Potato*, *Syon House Beans*, *Cucumbers*, *Veitch's dwarf Kale*, *Lyon Leek*, *Ellam's Cabbage*, *Victoria Spinach*, *Cattell's Eclipse Broccoli* and *Veitch's Purple Sprouting Broccoli*. These were nicely staged and made a pleasing exhibit (silver Banksian medal). A dish of Vegetable Marrows (a new variety) was sent by Mr. Leach, Albury Park, Guildford. The seed was sown on January 22, and the Marrows were ready for use in the first week in April. Mr. T. Laxton, Bedford, sent nine plants in pots, laden with fruit, of his new Strawberry, *Royal Sovereign*. This kind was certificated last year and now received a cultural commendation, the committee thinking very highly of it as a forcing variety. From the Royal Horticultural Society's gardens was sent a small collection of well-grown Apples. These had been grown in pots. Mr. Barron sent them to show how well Apples will keep when grown to a high state of perfection. The kinds sent embraced *King of the Pippins*, *Annie Elizabeth*, *Bramley's Seedling*, *Galloway Pippin*, *Hoary Morning* and *Lane's Prince Albert*. From Messrs. Lane, Berkhamsted, was sent a nice lot of *Prince Albert Apple* to show its good keeping qualities. The flesh was very firm and the flavour excellent. From the same source was sent a new seedling Apple named *St. John*. This the committee desired to see again later to test its keeping qualities. Mr. Woodward, Barham Court, Maidstone, sent a new seedling Apple of nice appearance, but over-ripe. From Mr. W. Divers, Wierton House, Maidstone, came fifteen dishes of Apples, chiefly dessert kinds; these were past their best.

The lecture announced to be given by Mr. Im Thurm was unavoidably postponed. The secretary said he much regretted Mr. Im Thurm's absence, and he proposed to read a paper on the Citron sent to the scientific committee by Dr. Bonavia, who had gone into the history of this fruit at great length. At the commencement he stated the Citron was one of the oldest fruits known, having been grown many centuries ago in Egypt, chiefly on account of its medicinal properties. He named various works where the fruit was figured, and gave a list of writers who had spoken of this fruit and its uses in their works. Five centuries ago it was established in Italy, and later it was found in quantity in Persia and Greece, and was now grown largely in the countries named. In India there are various types, and in China there are many traditions of the uses of the Citron, but one he could vouch for, and that was the value of the fruit in bad cases of intermittent fever, as he himself had seen its good

effects in such cases. The writer also mentioned its use in various forms in the East, and concluded with a list of countries in which this fruit had been found.

Mr. Crowley, who grows this fruit in quantity under glass, gave his mode of culture. The fruit when preserved either whole or otherwise he found useful. The trees never failed to bear freely, and the culture was very simple. He had grown the Citron for a long time with much success, and thought such a useful fruit should be more widely cultivated.

Sir J. Llewellyn added a few words as to the growth of this fruit in Glamorganshire, and mentioned how the varieties of Citrons and Oranges came to be grown there.

United Horticultural Benefit and Provident Society.—The monthly meeting of this society was held at the Caledonian Hotel on Monday evening last. Five new members were elected and three others nominated. Mr. S. M. Segar became an honorary member. Only two members are on the sick fund.

Ornithogalum arabicum.—Could any reader of THE GARDEN give advice as to the cultivation of this in pots, as I have tried it twice and failed? The first time the bulbs remained sound for two years, but gave no signs of growth, either leaf or root, and they eventually decayed. As to the second lot tried, they have partly done the same thing, and partly made a very weak spindly growth, but not enough to warrant any bloom this year. I may say that a neighbouring gardener found the same thing happen with the bulbs planted out in the open.—J. R., West Surrey.

Death of Mr. W. R. M'Kelvie.—We regret to record the death, on the 2nd inst. of Mr. William Ross M'Kelvie, superintendent of public parks and cemeteries in Dundee. The deceased had held the appointment since 1863.

Spring flowers at Dropmore.—Early spring flowers were pretty when we were at Dropmore a few days ago. Primroses in variety, the colours decided and varied, are largely used, especially a soft lilac kind, and the beds are edged with *Aubrietias*, which make a charming margin, better far than any kind of fancy edging. Dog's-tooth Violets, the several forms of *Windflower* and *Narcissi* colour the ground. The variety named *odorus rugulosus* was noteworthy. It is graceful in growth and the flowers are rich yellow. The *Rhododendrons* are coming into bloom, and forms of *R. arboreum* and *R. Nobleum* have been gay for some little time past, but it is not until the masses of *Azaleas* and the bulk of the *Rhododendrons* are in full beauty that Dropmore is seen at its best.

The weather in West Herts.—Although somewhat colder, the same type of weather, which has now prevailed for over six weeks, still holds. During this period there have been only four days when the temperature of the air during the daytime has been below the average for the time of year. The nights, on the other hand, have proved mostly cold, but the air being remarkably dry, but little, if any, injury has been done to vegetation. The temperature of the soil at 2 feet deep now stands at 50°, and at 1 foot deep at 52°, showing a rise of 4° at both depths since the beginning of the present month. No rain whatever has fallen here for four weeks, and less than half an inch since February. For over ten days no water at all has come through the 2½ feet of soil in either of my percolation gauges. During the last five weeks the record of bright sunshine has been very remarkable, on only four days falling below six hours and on six days exceeding ten hours. For more than ten days the wind has come entirely from some point between north and south-east.—E. M., Berkhamsted.

Names of plants.—*F. Hand.*—2, *Kerria japonica* fl.-pl.; please send fresh specimens of the others. —*H. Burney.*—*Eupatorium riparium*.

Names of fruit.—*G. Jackson.*—Apple not recognised.

WOODLAND.

THE CLIMATIC INFLUENCE OF FORESTS.

WHILE writers on forestry and friends of the forestry movement have been advocating reform in the public treatment of forests on the ground of their conjectured climatic importance, a thorough investigation of the question has been made in Europe, where well-established forest administrations rendered possible such work on an extensive scale—such a scale as is necessary for conclusive results. The question of practical importance is not so much as to the effects of the forest upon the general climate, but as to the local modification of climatic conditions produced thereby. We are not concerned as to whether the total rainfall over the Continent is increased, but whether the distribution of precipitation in time and quantity over and near a forest area is influenced by its existence; whether we or our crops feel its absence or presence in our immediate neighbourhood. We can readily understand that an effect upon climate (if any) must be due in the first place to the mechanical obstruction which the forest cover presents to the passage of air currents and to the action of the sun's rays upon the soil; that it must result from a difference in insolation and consequent differences in temperature and evaporation over forest and field; and that this influence can become appreciable only when large enough air columns of different characters are opposed to each other capable of producing local currents of air which may intercommunicate the characteristics of one area to the other, or of changing the character of passing air currents. The size and character of forest growth, its density, height, situation and composition are much more important in determining its influence than has been hitherto supposed. It is not trees, but masses of foliage which may be effective.

The most important contributions towards a solution of the question of climatic forest influences are the observations at three sets of forest meteorological stations, established in Switzerland, Germany and Austria. The systems, made up of double stations, one within, the other without, the forest, but under similar conditions otherwise, cannot finally decide the question of the climatic influence of the forest, but they may furnish preliminary data in establishing the differences between meteorological conditions in the forest and in the open, from which finally the reaction of one upon the other may be deduced with the aid of additional observations in radial stations, such as have been more recently established in Austria.

The observations in the forest meteorological stations of the canton Berne, lately published, comprise nineteen years at three sets of stations, the longest systematic series of observations so far recorded. Only the temperature observations of air, soil and tree interior are so far published, with results which permit of the following conclusions: The air temperatures taken 3 metres above ground are found in the forest lower for mean annual as well as mean monthly, except during the winter months. The difference is greater at 4 p.m. (time of daily maximum) than at 9 a.m., and increases as the season temperature increases, reaching its maximum in July, then decreasing towards autumn; in winter the air temperature in the woods is nearly the same as in the open, or, at least, only slightly warmer. The evergreen forest seems to exert greater cooling influence than the Beech woods. Altogether, the range of temperatures through the year is from 2½° to 3° Fahrenheit greater in the open. The soil-surface in the open in summer is warmer, in winter colder than the air; in the forest, on the contrary, the surface temperature is always lower than the air temperature, and the forest soil shows at all depths during spring, summer and autumn lower temperatures, but in winter either the same or slightly warmer than the open. The greatest difference is found at the surface, the Spruce forest at Berne exhibiting the greatest cool-

ing effect to the extent of 9° Fahrenheit, while the warming effect in winter ranges only from 1° to 2°. At 9 a.m. no difference was found between temperatures breast-high and in the crown of the trees, but at 4 o'clock the crown shows higher temperature, except in winter, when it is as cold as, or colder than, the lower parts. The trees are always colder than the surrounding air and colder than the air in the open, especially in summer. This may be one of the factors which help to cool the air temperature in the forest and possibly induce condensation of moisture-laden air currents. The range of tree temperatures is smaller than that of air temperatures.

From the observations at the German stations, sixteen in number, which extend through now eighteen years, the most interesting result regarding forest influence upon rainfall may be cited at the station of Lintzel. This station is situated in the great Lueneburg heath, a prairie-like country, which, during the existence of the stations, has been reforested, so that on an area of twenty-five square miles the following change took place:—

Before reforestation.		After reforestation.	
Field and meadow,	12 per cent.	10 per cent.	
Heath	55	10	"
Forest	3 " (old)	80	"

The reforestation took place at the rate of 1000 to 1500 acres a year at first, afterward more slowly, until 8000 acres were under forest.

Comparing the rainfall observations with those from stations outside of the forest conditions, but near enough to be available for comparison, the following changes took place at Lintzel. While at first the rainfall was only about eighty per cent. of that at the other stations, it increased as follows:—

1882.	1883.	1884.	1885.	1886.	1887.	1888.
81.3	86.3	95.2	99.8	100.6	103.7	103.9

So that finally it rose from a deficiency of nearly twenty per cent. to an excess of nearly four per cent.

The observations at the Austrian stations cover a period of eight years. These stations, of which there are three sets, are radial, that is to say, there are several sets of instruments in the open at varying distances and in different directions from the forest, by which arrangement, it is to be hoped, not only the difference of meteorological conditions, but also the influence, if any, of the forest areas may be determined. These observations are especially valuable because they have been taken at various heights above the soil, and therefore indicate the differences in vertical distribution of these meteorological factors of temperature and moisture. Comparing the air temperatures of forest and field at the same height above the soil, namely at 16 feet, 36 feet, and 48 feet, we find in the daytime the same temperature, lower below, higher above the crowns than at corresponding heights in the open, while in the night the temperature in and above the crowns is lower. Yet the differences are not very great.

The absolute humidity is always greater in and above the forest. This excess is smallest towards morning and reaches its maximum at noon, then decreases again. The difference at noon is 0.55-0.63 inches with calm air. The relative humidity at all heights and at all times is higher in the forest, the difference in calm weather at 16 feet reaching as high as 13 to 13½ per cent. in the mean of observations. At 48 feet it is less, yet in the hours towards morning it is still ten and nine-tenths per cent. greater than over the open. In regard to the humidity of the air, it is noteworthy that in the forest the relative humidity increases and decreases at the same time with the absolute humidity, while usually in the field they have opposite progressions. This leads to the conclusion that the forest is at the same time a source of atmospheric water supply and of cooling. Since in the open, the water supplies, under the influence of higher temperatures and unchecked winds, are more readily exhausted or reduced to a minimum where evaporation and transpiration of the soil

covering plants do not increase in proportion to temperature increase, it becomes evident that the forest retains for a longer time a water supply which is easily available.

The observation that both absolute and relative humidity are increased in the forest is a new and important fact, which had not been apparent from the observations of the German stations situated under the influence of an oceanic (the Baltic and Atlantic) climate, which is characterised by high relative humidity and only occasional high temperatures, while the Austrian stations are situated near the region of the pontic dry climate. In such a climate the dry air is capable of taking up additional water supplies from the forest, and since the latter has also a cooling effect, both absolute and relative humidity of air currents passing it is increased, while in the oceanic climate the absolute moisture, already high, cannot be increased, and only the cooling effect of the forest affects the relative humidity. This important difference in general climatic conditions must be kept in view when discussing forest influences. In comparing forest and open field, the kind of cover of the latter must also be taken into account. During the early development of meadow growth and of crops, while they are green, they furnish by transpiration more water to the air than the forest. Since, therefore, during the season the open soil loses both by evaporation and transpiration more water than the shaded forest soil, the latter is able to supply moisture when that of the field soil is exhausted and begins to absorb moisture from the atmosphere, especially when, with the ripening of the crops, the plants cease to transpire much water. Hence, the difference of absolute humidity appears greater in the forest, especially in dry seasons.

The decrease in absolute humidity above the forest crown must, of course, take place at about the same ratio as above the field, but altogether the observations seem to show that the enriching of the air with moisture above a forest cover can extend to a considerable height. These conditions of moisture and temperature above the forest lend countenance to the claim that the possibility of precipitation over large and dense forest areas is greater than over open fields.

It is hardly a conclusion, but at least an impression, that seems to come from looking at results already presented that, as a climatic factor, the forest of the plain is apparently of more importance than the mountain forest, the more potent meteorological influences of the mountain elevation obscuring and reducing in significance the influence of their cover, while for soil and water conditions the mountain forest is of considerable importance.—B. E. FERNOW, Washington, D. C., in *Garden and Forest*.

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No. 1118. SATURDAY, April 22, 1893. Vol. XLIII.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—Shakespeare.

CHRYSANTHEMUMS.

CHRYSANTHEMUM SYNONYMS.

It is rather a curious fact that Mr. Spaulding's complaint should have followed an article of mine, in which was explained one of the causes why Chrysanthemums are the subject of such confusing nomenclature. A few years ago it was not uncommon to find the French horticultural writers charging us with renaming, but it is decidedly new for an American one to do so. The instances quoted by Mr. Spaulding are but few. He might easily have enlarged the list, but perhaps preferred to cite only those cases in which he was sure of the identity. Now that American, French, and English plant importers are scouring Japan for Chrysanthemum novelties through, as must be the case, different agents, there is no means that I can see by which the multiplication of synonyms can be prevented, while each importer considers he has the right to name his introductions in his own tongue. Even in Japan seedling Chrysanthemums cannot be produced in such profusion as to be wholly distinct in their characteristics, and I have no doubt whatever but that their most popular exhibition flowers are as widely cultivated and in as many different growers' hands as Lord Alcester, Empress of India or Etoile de Lyon are here. When agents for European or American houses make selections of either new seedlings or attractive show flowers, how can they be sure that another firm's agent is not doing or has not done the same? There appears to be no possibility of ensuring it, and so the best of the show blooms are selected and despatched to the firms these agents represent, with the result that in a few years' time everybody who has the disadvantage to have sent his plants out a season or two behind someone else is regarded as a cheat.

The mischief results from the supposed right of the importers to give their own names to plants which already bear one in the Japanese vernacular, but this is a right I am not inclined to admit. An importer would hesitate before boldly renaming the new seedlings of one of his own countrymen or of a Continental *confrère*, yet, because the plants from Japan bear names incomprehensible to him, he does not scruple to cancel the native name and give what he supposes to be a plainer one. In this Americans are no better than English, nor English than French. I wonder how many Chrysanthemums there are out of the enormous number that have been imported from Japan into the States that bear the Japanese name. I wonder, too, how many there are that bear their original appellations out of those introduced into England and France from the same source. The percentage would indeed be small, and it seems to me the Japanese florist is the one who should complain most loudly. To him there may be a wealth of meaning in Iri-hi-no-umi, Fuso-ichi, Shimoyo-no-tsuki, Yuki-no-kagaribi, Goku-beni-taiho, Shojonobori, Tats-utagawa, Shiro-yenju-kagami, Chiyo-no-kazari, Shincha-no-tsuyu, Yamatonotsumi, Chirimen-kanoko, Hi-no-tsukasa and

Ki-no-ito-giku. Let us fancy his vexation when a splendid lot of new Chrysanthemums is imported into his country from England or America bearing such names as Mr. John Smith, Pride of New York, Mrs. Henry Brown, or Royal Aquarium Favourite, which all turn out to be none other than his own cherished seedlings upon which he lovingly bestowed some of the above-mentioned native names.

Of course, I would hardly advocate the adoption of the native names in the native language even when Romanised, but I do most seriously urge the desirability of the importers keeping as near thereto as possible. A translation of the original name is not only possible, but permissible, and would be certain to ensure identity. Such complaints as that made by Mr. Spaulding would then be less frequently and less justly made. The English for some of these native names at first sight appears a little quaint. That, however, is no real objection to their use, because many of the names already employed by us are positively inelegant, if not actually ugly. The English translations have the merit of distinctness, as an example of which I will only cite Golden Sceptre, Cherry Grove, Snow on Pine, Carmine Ball, Golden Spoon, Torch in Snow.

The real name of Louis Boehmer of hairy fame is Murasaki-kiubi, and this is the only case with which I am acquainted of a variety being identified by the Japanese. One of those mentioned by Mr. Spaulding is singularly unfortunate in having been selected for introduction into Western collections. Robert Bottomley was introduced into America by Mr. Waterer about seven years ago; it also appeared in a collection imported by Messrs. Cannell, who called it Lady Trevor Lawrence; a year later it turned up in another lot which Messrs. Carter had sent from Japan, and was named Mrs. Beale; it proved to be Jean de Lut sent out by M. Bouchardat several seasons later, and if my information is correct it is also known as M. Parent. Now these nurserymen, I am sure, quite honestly believed at the time they received it from the East that they were in sole possession of a new Chrysanthemum not previously known to the trade or to our growers, and, exercising their right, each gave the plant a different name with the purest of motives.

There are, of course, exceptions, but it is only fair to assume that they are in the minority; and now that such extensive importations are being made on both sides of the Atlantic, Chrysanthemum growers will unquestionably agree with me that the suggestion thrown out is a desirable one to adopt.

In some cases the duplication of names is done before we get the plants, and I believe that the variety known as Nineveh and William Tricker received both its names before leaving the States. Certainly William Falconer (syn., Patrick Barry) did, but as this was a sport, it may, as is frequently the case, have sported in two different localities without the fact being known at the time.

C. HARMAN PAYNE.

Hairy Chrysanthemums.—The *Revue d'Horticulture Belge et Etrangère* for the current month gives illustrations of two new varieties belonging to this section. The first is of the Louis Boehmer type, and is called Fleur Lyonnaise. It is described as a large, full, slightly incurved flower of a fine purple-red colour, shaded carmine, the reverse of the petals bronze, and they are covered with numerous, long silky hairs. The same raiser is sending out an entirely new section of hairy varieties which are characterised by the extreme fineness of the petals, which resemble human hair. These latter hairy Chrysanthemums

have been raised from the Japanese variety Thibet, and one called Marquise Gaspard de Clermont-Tonnerre is figured. They appear to constitute an entirely new departure in Chrysanthemum raising, and have been thought worthy of illustration on that account. M. Crozy, of Lyons, is the grower. —C. H. P.

SEASONABLE CULTURAL NOTES.

THE season is now sufficiently far advanced to enable us to form a pretty clear idea as to the habit of growth of the latest of English raised seedling varieties. Many of those put into commerce this year are all that can be desired in this respect, although one must expect to find a few that still run up to an inconvenient height. The habit of such as W. Seward, Alice Seward, and the Shrimpton family, Mrs. Neville, Princess Victoria, The Tribune, Miss Muriel Scott, and Mme. Octavie Mirbeau, possibly not an English raised seedling, is of a decided character, dwarf, and well clothed with sturdy foliage, the leaves having short footstalks—a desirable point when the plants are cultivated with a view to producing large blooms. With the addition of so many varieties of the desired habit of growth, the method of culture so much practised now will increase in favour, but all thinking persons will also cultivate a fair number of bush plants with a view to providing flowers in quantity. Chrysanthemums generally are looking remarkably well so far this season, the bright sunny weather having favoured the growth, especially where the plants have been situated so as to escape the biting easterly winds. Some of the earliest plants will soon have to take their chance out of doors. If a warm, sunny spot is chosen at the foot of a south wall and temporary protection in the shape of canvas or mats thrown over the plants at night for a week or two, there is no reason why they should not succeed in such a position. The plants intended to give large blooms now range from 6 inches to 2 feet high, and are generally strong in growth. No time should be lost in transferring them to 5½-inch pots. Many of them are now making their first break, and need attention in the manipulation of the additional shoots made by the formation of a flower-bud at the point of growth. Promptly remove the bud and all shoots but three of the most promising; these are generally found nearest to the flower-bud. Place a light stake to each plant, to which the new shoots should be loosely, yet securely fastened.

Now is a good time to top the second batch of plants like Mrs. F. Jameson, Mrs. A. Hardy, Stanstead White, &c. Where any difficulty was found in keeping the blooms sufficiently long last year when grown by the usual method, topping the main shoot at this period retards the formation of the flower-bud, that is, to give the finest blooms of these particular sorts when a show is to take place about the 10th or 15th of November. I would, however, caution beginners in adopting this plan on too large a scale, as the weather experienced during the season has so much influence on the progress of the plants, especially after they have been topped. The best blooms are always produced, if not at the right time, by allowing the plants to grow away at will until the first natural break is made. The soil for the final potting should be got ready, as the plants will require transferring to the pots in which they are to flower in about five weeks, some of them, perhaps, earlier. No definite date can be fixed when this phase of their culture will need carrying out. It is a mistake to allow the plants

to become root-bound in the 5½-inch pots while waiting for a specified date to begin.

Some attention should be paid to preparing the compost for the final potting. Although the soil is but one detail in the culture, the most elaborate mixture or the best of soil might be completely nullified by errors in watering and after management. The chief component part is good fibrous loam, partly decayed. The turf should be cut just long enough for the grass to decay. Where the turf is taken from the surface of heavy land, decayed leaves, charcoal, wood ashes and horse droppings ought to be freely used, with a view to keeping the whole porous. Loam inclined to be sandy needs less of these, although wood ashes is good even for that class of soil, as it contains potash, which *Chrysanthemums* require to assist in the solidifying of the wood, which is absolutely essential to produce well-formed and deeply built blooms of the incurved section. Soil deficient in nutriment cannot command success. Loam which has been taken from poor land needs assistance, either in the shape of horse or cow manure in quantity, or by adding bone meal, dissolved bones or any of the various chemical manures advertised, applied at the rate of 2 ozs. to 3 ozs. to every bushel of compost. Where bone meal or bones in any form is employed, it should be added to the soil some time before the plants are placed in it. If light loam is employed, cow manure is good to add to it; if the loam is inclined to be heavy, horse manure prepared as for a Mushroom bed answers well. To three parts of turf add one part of manure, half a part of half-decayed leaves, wood ashes and charcoal at the rate of one-sixth part. Stack the whole in a neat heap, placing the manure in layers between the turf, sprinkling on the bones at the same time. The sand and soot can be added at potting time. If the soil is quite devoid of calcareous matter, sprinkle an occasional handful of quicklime on the turf while stacking it. Lime is not only useful for the destruction of worms in the soil, but it is most beneficial to the plants, assisting the growth to ripen, thus increasing the depth and adding to the build of the blooms, especially in the incurved section. *Chrysanthemums* grown in soil in which lime or chalk abounds may not produce blooms so large in width, but they will be much deeper although narrower in the petals than where this mineral does not exist in a natural state. Pounded oyster-shells supply to an extent this want in the soil; even then a handful of lime thrown in amongst the turf is most beneficial.

In the case of new or scarce varieties, an opportunity will shortly occur to increase the stock, whereby cuttings can be more readily obtained next autumn. Early in May the plants, when growing in 5½-inch pots, as they become well stocked with roots throw up suckers from the base. If these are taken off and inserted in 2½-inch pots singly, finally shifting them into 6-inch pots and restricting their growth to one stem, they will not only produce one fairly large bloom each, but they will throw up many more cuttings next December than will probably the older plants. A little forethought just now may be the means of providing abundance of cuttings next season. Plants put out at the base of walls at the end of February or early in March, as advised, are now looking exceptionally promising; the lot sun of the past three weeks, having thoroughly warmed the soil about the roots, has induced a free growth from the base. The shoots should be judiciously thinned to prevent overcrowding. If the plants are about a yard

apart, six or eight shoots to each will be ample for covering the wall, the smaller number being left on the strongest growing kinds. In thinning the shoots, due regard must be paid to the increased number that will take place when the first natural break occurs.

Plants intended for large bushes, the cuttings of which were inserted at the usual time along with the principal stock, are making satisfactory progress. The top of each was taken out at about 4 inches high; the additional shoots resulting from this topping have now advanced from 4 inches to 5 inches more. One more topping will be sufficient to make handsome bushes. This ought to be done at once, so that the future plants are kept as dwarf as possible. —E. MOLYNEUX.

NOTES OF THE WEEK.

Polyanthus Narcissi on Grass.—The *Polyanthus Narcissi*, such as *Grand Monarque* and *Gloria Solis*, are very beautiful when planted in clumps of say half a dozen bulbs each on Grass. It is difficult to say how many years the same bulbs will last in good condition in the ground without removal. Some here are now flowering for the eighth year. —E. M., *Swinmore Park*.

Forms of *Pyrus japonica*.—I have sent some flowers of the old *Pyrus japonica* and *P. j. cardinalis*; they are readily distinguished. The latter is in my opinion the finest hardy plant flowering at this season that I know. There can be no mistake as to its hardiness; it has been in bloom quite three weeks, and is yet most beautiful. I also send a piece of another good one, *Cydonia Simoni*. —ANTHONY WATERER.

***Odontoglossum maculatum anceps*.**—A spike of this carrying seven flowers comes to us from Mr. Atkinson, Aigburth, Liverpool. They represent a handsomely marked form, the sepals rich chocolate, with a few bands of greenish yellow showing through; the petals of a richer shade of the same colour, the lower half blotched with crimson-brown, the lip coloured in the same way. It obtained a first-class certificate from the R.H.S. in 1890.

***Berberis buxifolia*.**—Although this species does not give such a fine display as either *B. Darwini* or *B. stenophylla*, it is well worth growing because it comes into flower a few weeks earlier than either of them. As the name implies, it has deep green, Box-like leaves, which are oblong and not toothed. The flowers, on slender, semi-pendulous stalks and occurring singly in the axils of the leaves, are cup-shaped and bright amber-yellow. This *Berberis* makes an elegant shrub 6 feet to 8 feet high and is perfectly hardy. It is not strictly evergreen, but, nevertheless, retains sufficient foliage throughout the winter to avoid bareness. There is a pretty little variety of it in cultivation known as *nana*, which never grows to more than about one-fourth the height of the type. It is now in flower in the Royal Gardens, Kew. *B. buxifolia* is a native of the Magellan Straits, and was introduced in 1830. —B.

The Norway Maple (*Acer platanoides*).—This tree appears to have flowered somewhat earlier this year than usual, as at Kew, about the beginning of April, we noticed a tree near the "North" gallery 30 feet high in full blossom, making in bright sunlight a beautiful object in the landscape. The flowers are deep yellow, with a not unpleasant tinge of green, and they are borne in great abundance on the tree from the lowest to the uppermost branches. The Norway Maple is well suited for new gardens where an arborescent vegetation is desired quickly, as it is a fast grower when young. A fine effect may be produced by planting half-a-dozen or more in a group, at any rate near enough together to catch the eye at one time. The species is as hardy as the common

Sycamore, and is spread over Europe from Switzerland up to Norway. It does not occur wild in Britain, but is recorded as having been in cultivation here as far back as 1683. It is evidently not fastidious as to soil, growing in almost pure sand at Kew; a moister and more loamy soil would, however, be preferable.

***Epiphyllum Makoyanum*.**—Your note as to this best of *Epiphyllums* is well-timed. It may possibly, however, not be known to some of your readers that it requires no heat, but merely protection from frost, and that such sunshine as we get in London suffices to keep it in good condition. I bought a small plant in the spring of 1890, and had over seventy flowers from it last year, spreading over something like six weeks. This year there is equally good promise. I give it a little water in winter, but do not allow it to get dust-dry, as the leaves should never be allowed to shrivel. I keep it close to the glass in my little conservatory. My plant is grafted on a *Pereskia*, but I note the interesting fact that the beautiful specimen at Kew is on its own stem, and that it throws down roots into the soil from its upper branches. —G. R. R., *London, S.W.*

Notes from Chester.—No rain and many days a June sun for the past month or five weeks; everything is early and everything delightfully full of flower and promise of flower. Daffodils and other spring-flowering bulbs have not remained in the perfection of bloom so long as they would have done had we had rain, but our bulb fields have been masses of gold, and now *Narcissus poeticus* gives us a big broad sheet of silvery glory. The Brooms in their diversity are splendid in their broad masses of rich colour. We send you three of the most conspicuous, flowering with us in the open here just now. We have a bank of *Genista præcox*, like golden plumes. The richness of colour of *Genista dahurica* is very noticeable, and *Cytisus purpureus* affords a pleasant relief. Not quite so free-flowering as the others, the form of the flower and the arrangement of its foliage give it a distinctiveness quite its own. With this we enclose a truss of bloom of *Stauntonia*, also from the open ground, and in charming perfection with us just now. As we write the spell is broken. Rain is falling copiously, and the tender tints of the early leafage already seem refreshed and brightened. —DICKSONS, *Chester*.

* * The *Stauntonia* is very interesting. We suppose it is from a wall. —ED.

***Rhodora canadensis*.**—In the early part of April there is (this year especially) no lack of blossom out of doors, but of the colours one sees, purple is about the rarest. It is the bright rosy purple flowers of the Canadian *Rhodora* that give it such a peculiar charm at this season. It is an old garden plant, having been brought from North America in the year 1767. It is not, as the name would suggest, confined to Canada, but extends southwards into the United States. As might be expected from its habitat, it is quite hardy, but it should, for the sake of its early blossoms, be favoured with a position sheltered from the north and east. In such a spot at Kew it has been in flower for a fortnight or more, and its blossoms still remain uninjured by the night frosts that have lately been so frequent. It is quite deciduous, and its leaf-buds are just now bursting; except in this character, it is not unlike *Azalea amena*, the flowers being of the same size, colour and outline. It makes a bush from 2 feet to 4 feet high, the leaves being oval, green above, with a glaucous under surface. In the "Genera Plantarum" it is relegated to the genus *Rhododendron*, and for those who like to keep up to date in nomenclature (no easy task), its name is *R. rhodora*. It is a plant really well worth growing for spring effect, and in the bright sunlight of the last few weeks its warm colour has been delightful. It thrives under the same treatment as the dwarf *Rhododendrons* (of the *myrtifolium* class), liking a moist, somewhat peaty soil quite devoid of lime.

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ORCHIDS.

NOTES ON THE CULTURE OF CALANTHES AND POINSETTIAS.

THE engraving herewith represents a portion of our Fern house in which batches of the above plants are placed during their blooming period. Calanthes and Poinsettias are very useful, in fact to us indispensable, midwinter-flowering stove plants.

CALANTHES.

A portion of our stock is already potted. Some are grown six bulbs in a 9-inch pot, four in a 7-inch pot, three in a 6-inch pot, and others singly in 5-inch pots, with a few of the smaller bulbs in threes in 6-inch Orchid pans for suspending from the roof of Orchid house. The largest bulbs are placed in the largest pots as a rule, though a few best bulbs are grown

droppings, about one peck of small nodules of charcoal and the same of Bedford sand being added to each barrow-load of this and the whole well mixed and warmed before using. The pots should be filled to half their depth with drainage. The compost should be pressed very firmly when potting, some of the roughest being placed over the drainage. The base of the bulbs should be covered from 1 inch to 2 inches, according to their size. When potted they are placed in the warm Orchid house, one side of a house some 40 feet in length being generally filled with them, the pots at first being stood closely together. As a rule, no water is given for the first few weeks, a gentle dewing with the syringe on bright days being sufficient if the potting material is fairly moist when used. As soon as they commence to grow and make roots, they will require attention as to watering. When once the pots are full of roots, it is almost impossible to over-water them (especially the suspended ones)



Calanthes and Poinsettias at Grinston Park. Engraved for THE GARDEN from a photograph sent by Mr. H. J. Clayton.

singly as described. I find no difference as to their doing well or ill in the various pots, provided all have the same treatment throughout. Those grown in pans hung from roofs have generally shorter and more densely-bloomed spikes of flowers, owing, as I think, to the growth of the bulbs being more consolidated. More attention as to watering is required in their case, and they should not be hung up at once after potting—not until the young growths are well started and roots made in the new compost. The varieties I grow are *C. Veitchi oculata rubra* and *lutea*. There are two distinct varieties of the former, one having much deeper-coloured flowers than the other. The best kind is easily distinguished when dormant in that the bulb is more tapering through its whole length and has not a thin neck about half its length, as in the pale variety. The compost I use is a mixture of one-half very fibrous peat, one-fourth loam fibre, and the same of Mushroom-bed manure or horse

droppings, about one peck of small nodules of charcoal and the same of Bedford sand being added to each barrow-load of this and the whole well mixed and warmed before using. The pots should be filled to half their depth with drainage. The compost should be pressed very firmly when potting, some of the roughest being placed over the drainage. The base of the bulbs should be covered from 1 inch to 2 inches, according to their size. When potted they are placed in the warm Orchid house, one side of a house some 40 feet in length being generally filled with them, the pots at first being stood closely together. As a rule, no water is given for the first few weeks, a gentle dewing with the syringe on bright days being sufficient if the potting material is fairly moist when used. As soon as they commence to grow and make roots, they will require attention as to watering. When once the pots are full of roots, it is almost impossible to over-water them (especially the suspended ones)

away that gaunt, bare look which is rather a drawback to their appearance at that period. The bulk of the stock is placed when in bloom in a house full of mostly *Adiantums* of kinds, and, along with the *Poinsettias* in bloom at the same time, make up certainly the best piece of flower colouring we have in these gardens each year. For room decoration no plant of its season has greater merits in this respect than the *Calanthe*. I have had spikes last for nearly three weeks in my own cottage, and in a room where gas is used every night. The number of flowers on each spike has never exceeded fifty with me. I have heard of others having them with many more, but have not seen them. Density of flowers on each spike is my aim, and this can be got by not overpotting the bulbs at first, keeping them well up to the light during the growing season, shading only when the sun is very bright and hot during the summer months, and not overcrowding the pots. Of course quite as good results can be produced in a plant stove, Pine house, Cucumber or Melon pit as in a house set apart for Orchids. *Calanthes* are not with me subject to many insect pests, brown scale being the only enemy I have to contend with. In the early stages of the plants' growth nothing but hand-cleaning with a small brush or sponge is desirable. When the leaves are more consolidated, say after August, I have found that syringing them with one of the many insecticides now in use (save paraffin) will kill the scale and do no injury, but it has even then to be rubbed off by hand. As the flowers are cut or fade, the pots are removed and laid on their sides under the hot-water pipes that run round the house in which the plants were grown during the previous summer; no water is required. About the end of January or earlier, if pots are wanted, I shake out the bulbs and stand them upright thickly in shallow boxes, covering their bases with some Moss; there they remain until potted during the following March and April.

POINSETTIAS.

I am just about to put into heat the first batch of last year's plants to produce cuttings, from which I grow the annual stock of about 300, save about fifty of the best of the old plants, which are cut down and grown on again another year. I find one-year-old plants produce their bracts a little sooner than the ones struck from cuttings, otherwise they are no better as to size and quality of bract than the last-named, if even so good. Until now the plants have been laid on their sides under a stone stage in a warm greenhouse since the bracts were cut or died off in January. No water is required during this period, the pots being laid on the damp soil, and they get an occasional damp over with the syringe if showing signs of getting too dry. When put into a brisk heat the dormant buds up each of the stems soon break into growth. A batch of say fifty old stools will give a lot of cuttings during the season. The ones at the top come in first, and so on down to the base; when about 3 inches in length the cuttings are taken off with a heel. It is best to cut up hill when doing the work, and as soon as they are severed, a small pot of dry silver sand should be at hand and the base of the portion cut off inserted therein; this stops bleeding. Insert the cuttings singly in the middle of a 3-inch pot in any light sandy compost, being careful to have a base of silver sand under each cutting; the pots should then be plunged in a propagating case or under a handlight in a stove with a brisk bottom heat if possible. In my case all but the first two

batches are struck in a two-light frame on a manure bed, and with invariable success. As soon as rooted the cuttings should be moved from their more confined quarters and gradually hardened a bit, though not too much, as I contend that to grow Poinsettias really well they require warm treatment all through their period of growth. When the cutting pots are full of roots the plants should be transferred to 5-inch or 6-inch pots according to their strength. Now is the time to decide on the number to grow and where to grow them. It may appear to some that not to strike the first batch of cuttings before, say, early in May is deferring matters too long. I thought so once, and had many a lot of nice young plants spoiled by overcrowding and its attendant drawbacks. Now I never prepare the stock until I see where they are to go. I have a three-quarter-span pit about 60 feet long, which until early in June is occupied with Potatoes, French Beans, Strawberries, &c. This is then cleared out and well washed down, the leaf beds that run along each side of central path stirred up and top-dressed with 6 inches of sawdust, then all is ready for a number of winter-blooming plants, the most important of which are the Poinsettias. I plunge the pots in the sawdust over the leaf beds in which there is a nice steady heat. At this stage careful watering is required, as many plants are lost if allowed to get at all over-wet at the root. The routine work from this stage is propagating more stock in batches of, in my case, about fifty until the end of July. These latter cuttings are procured from old stools planted out on a hotbed early in June without glass over them; they produce nice stubby cuttings, which soon root in the above-named manure bed, and are simply potted into 4-inch pots for table decoration. For this purpose they are invaluable in December and January, nice plants about 10 in. in height with bracts from 6 in. to 9 in. across being useful at that season. I use the same compost all through, viz., three parts good fibry loam (ours is of the limestone formation), one part good half-rotted leaf soil, with a dash of clean river sand well mixed therein, and a 6-inch potful of soot and the same of bone-meal to each barrow-load of the mixture. Good drainage is necessary, and when, in September and onwards, the pots are full of roots, I give the plants manure water same as described for Calanthes. Those who cannot get this readily can get as good results from some, if not all, of the many plant manures now in the market. The plants, as the season advances and they grow on, want careful attention; especially see they do not get drawn. There is no difficulty in keeping up a good temperature in such a pit as ours or any similar one during the summer months without much fire-heat. Give a chink of air at top as soon as the temperature rises to say 70°; increase this as the days go on and heat increases. Avoid cold draughts of air, especially from front sashes, though in really hot days during July and August plenty of air is necessary. A brisk warm atmosphere is the thing aimed at, not a very stuffy, moist one. A dawning over with the syringe is necessary when shutting up after a hot day. Shut up early in the afternoon and bottle up the sun-heat. I can do this with safety, as the pit is partly shaded by buildings from the afternoon sun. Aim at a strong vigorous growth, but not drawn. These are the plants that give the best bracts. I usually have scores from 15 inches to 20 inches across. I know there are plenty larger than this, but my aim is a large batch of really good ones—not a few extra big and the rest much smaller. Early in October,

and before, if the season is cold and wet and there is no means of heating the pit they are growing in, they should be moved to where they are to display their bracts. The best Poinsettias are stood on the centre stage, which will hold about 100, the Calanthes being arranged on the margin and also on side stages. The Ferns are thinned out to give the pots standing room and access to watering them. Here they remain until the bracts are either cut off for room decoration or have faded. A house with a good brisk heat and not too moist helps greatly in developing the size of bracts. I find there is no difficulty in keeping them for a month after they are developed if removed to a house with a night temperature of about 50° and the atmosphere kept on the dry side. Some years ago now I tried searing the cut ends of bracts that were to be used for room or church decoration, and the effect was excellent. They will keep fully a week to ten days longer when seared than when not so. It is easily done by having the mess-room poker made hot when about to cut some, and giving them a rub over with it. Those of your readers who have not tried this plan, let me request them to do so next winter, and compare the seared ones, say a week after, with ones cut at the same time and not seared. I ought to say that, unless at the time the bracts are opening the plants are furnished with fresh green leaves for nearly their whole length, they will be small in comparison with those that are so furnished. I always aim at having the leaves kept as fresh as possible until the plants are done with.

H. J. CLAYTON.

Grimston Gardens, Tadcaster.

Cattleya guatemalensis.—Flowers of this plant were shown before the committee of the Royal Horticultural Society last week from the collection of Mr. Chamberlain, Highbury, Birmingham. I had not seen the plant for more than thirty years, so that I had almost forgotten the flower, which appeared to me larger and better than that of the original, which was sent by Mr. Skinner to the Messrs. Veitch from Guatemala, and was said to be found growing upon the same tree as plants of *Cattleya Skinneri* and *Epidendrum aurantiacum*, between which it is a supposed natural hybrid. The flowers have a peculiar tinge of orange running through them.—W. H. G.

Odontoglossum polyxanthum.—This plant would appear to occur only in small numbers in its native home, for it is a species which does not crop up at the auction sales, and since it was first flowered by Mr. Cobb at Sydenham in 1880, one only sees a specimen now and then. I was much pleased, however, to see a fine example shown by Mr. Lewis, of Southgate, at the last meeting of the R.H.S. It is a compact and sturdy growing plant, producing a many-flowered raceme of large and leathery blooms, which each measure some 4 inches across and last a long time in good condition. The sepals and petals have a rich yellow ground, irregularly blotched with chestnut, the lip also being similarly coloured. It comes from the high mountains of Ecuador.—W. H. G.

Cattleya Skinneri alba.—"J. T." sends me a beautiful truss of flowers of this lovely white variety. The whole flower is pure white, with just a stain of pale yellow in the throat, and with a small spot of rose at the very base of the lip. This requires a warm and moist stove. It thrives best in hanging baskets, which should be well drained, using good fibrous peat, well beaten, and some chopped Sphagnum Moss. Like all the *Cattleyas*, it will not thrive if too much water is applied to the roots, but it delights in a moist atmosphere. It enjoys sun and light, and so the shading should only be used during the very hottest part of the

day. During winter care must be exercised in giving it water, only just enough to keep the bulbs from shrivelling being requisite. Towards the end of February or the beginning of March, when the flowers begin to push up, more water and heat will be required.—W. H. G.

Flowers from Minchinhampton.—Mr. Wilkinson sends me two very fine varieties of *Cattleya Trianae*, but I cannot find any distinctions in them to require distinct names; they may be marked as very good forms, the sepals and petals broad, and the lip of both above the average, also a *Cymbidium Lowianum* of good colour, but I had the same thing recently from Mr. Cragg much superior in colour. The *Cœlogyne* raceme was apparently a well-flowered specimen, but the blooms were shrivelled when I received them. The base of the stems should be bound with damp cotton to preserve the flowers.—W. H. G.

Cyrtopodium punctatum splendens.—In a recent visit to Syon House I noted with pleasure that Mr. Wythes had at last succeeded in flowering this lovely, but shy-blooming Brazilian plant. He had adopted, and that most successfully, the practice of retaining the plants in quite small pots, comparatively speaking, to their size, thus starving them in a measure. This beautiful variety was fully described in last week's GARDEN (p. 313). It is a superior form, and quite distinct from that shown at an earlier meeting by Mr. Cummins from The Grange, Carshalton, under the name of *C. Saintlegerianum*. The former has much the finer flowers, the latter the larger spikes. These handsome Orchids are really worthy of more notice.—J. H.

Cattleya citrina.—J. Crispin sends me a very beautiful flower of this. It is about the only *Cattleya* found in the Mexican territories up to the present time. It grows in the cool region, where the rainfall is excessive for nearly six months in the year, and it has the habit of growing downwards, as if to throw off the rainfall. The flowers, very sweet-scented, are large, thick and wax-like, except the front margin of the lip, which is white. It should be grown at the cool end of the *Cattleya* house and kept well deluged with water through the summer months, and during the winter I have usually kept it in the *Odontoglossum* house, giving it little or no water.—W. H. G.

Orchid seed.—I send you a pod of seed of *Odontoglossum maculatum* fertilised with pollen of *O. Rossi majus* in the middle of April last year, so that it has taken nearly the whole year to bring the seed to perfection. I have the following with seed-pods on, but they are not yet nearly ripe: *Odontoglossum Harryanum* crossed with pollen of *O. Alexandræ*, September 8, 1892; *O. Alexandræ* with pollen of *O. Harryanum*, September 8; *O. Harryanum* crossed with pollen of *O. Lindleyanum*, and also the reverse cross, October 5, 1892. These are all in good health, and I should be glad to know how to get the seed to germinate.—ORCHID SEED.

* * It is not at all difficult to obtain good seed-pods of *Odontoglossums*, and the seed seems to be good. I have had plenty of it, but have never yet been able to obtain a plant. The pod sent by "Orchid Seed" seems to be full grown, and the seed is apparently good. I put it under a good lens, which magnified the seed grains to nearly the size of rice, and they remind one of rice grains in form; few of them were plump, and it would not be possible to say whether they would vegetate. The only way to get at the truth of the matter is to try. The *Odontoglossums* cross freely in their native habitat, as witness the very beautiful *O. excellens*, a natural hybrid between *O. Pescatorei* and *O. tripudians* or *O. triumphans*. Another great beauty is *O. Wilckeanum*, an undoubted cross between *O. crispum* and *O. luteo-purpureum*. There is also Mr. Pollett's fine *O. elegans*, probably a cross between *O. cirrhosum* and *O. Halli* or *O. cristatum*. There are several others that may confidently be classed as hybrids, and it only remains for us to discover the best way to get the seed to vegetate. I have sown it on the surface of the soil in which are the growing plants, either in pots or baskets, but it would be well to try it on moss-

grown wood as well, as this is more the character of a natural seed bed.—J. DOUGLAS.

— "Orchid Seed" sends a pod of seed which has been obtained by crossing *O. maculatum* with *O. Rossi majus*. This he tells me has taken nearly twelve months to come to perfection. The seed appears to be good, and I would advise him to sow it in the Sphagnum in which the parent plants are growing, and not to disturb it for another twelve months. By this time the seedlings will have appeared. I have observed that the seedlings grow more quickly, and get on better when left in the pot where they germinated for a much longer time than is usually given them; indeed I attribute many of my friend's failures to the early removal of the seedlings. I have sown the seed and will let you know the result.—W. H. G.

CATTLEYA MENDELI.

A FRIEND, in writing to me a short time ago, says he is afraid that, owing to the great amount of sunshine, some of his plants will be quite a month earlier than last year. Two days before receiving this letter I received from Mr. May, who has charge of Mr. Jacomb's fine collection of Orchids at Cheam Park, four flowers in as many varieties of *Cattleya Mendeli*. This is usually looked for about the middle of May. I observed a plant of *C. gigas*, which usually blooms much later than *C. Mendeli*, shown in flower by Messrs. Charlesworth and Shuttleworth. All the forms sent by Mr. May are exceptionally good, there being nothing about them to indicate that they are quite a month before their usual time. No. 1 is a superb flower, measuring upwards of $7\frac{1}{2}$ inches across, the petals, light satiny rose in colour, being broad, recurved, and frilled on the edges, the lip large, much undulated, and frilled, the outer part creamy white, the inner side and throat enlivened by a stain of rich orange-yellow, whilst the whole front lobe is of a rich deep magenta. No. 2 is rather smaller, whilst the colour of the sepals and petals is rather lighter; the tube of the lip and the front of the side lobes are of a beautiful pure white with a faint shade of yellow, the remaining portion being of a rosy-magenta, beautifully fringed at the edges; this flower, although very elegant, is poorer in colour than any of the others. No. 3 is the smallest; it is a handsomely shaped flower however, the sepals and petals being white with the faintest tinge of lilac, lip white, bright yellow in the throat. No. 4 is the prettiest of the whole lot, the sepals and petals being light rose at the edges, the centre white, the side lobes of the lip white tinged with rose, inside the throat bright yellow, the ground, rose colour veined with white, the front lobe heavily frilled, of a rosy magenta, the colour being continued on the frill quite round the throat. Since receiving Mr. May's I have received two other consignments of the same kind, so that the Surrey plants are not the only ones that are flowering so early. One lot from "J. B.," Leeds, contains two flowers. No. 1 has nothing specially to recommend it. No. 2 is a very bright flower, having a deep stain of rich yellow in the throat and a large wedge-shaped blotch of deep magenta on the front lobe, which has a beautifully frilled edge. From "C. M.," Shropshire, come two flowers. These are a very bad matched pair. No. 1, a deformed flower, bears evidence of having been brought on by forcing, as I have so frequently seen the same thing happen to plants of various *Cattleyas* when the flowers had been forced in order to get them ready for a public exhibition. I should be glad to see a bloom again when perfect. No. 2 is a very

fine flower, measuring nearly 8 inches across the petals, which are narrow. The lip, however, very much resembles that of the variety known as *bella*, being somewhat of a bluish mauve, veined with white, the base and throat bright yellow. The colour of the sepals and petals in the flower before me is of a dark rosy lilac, but in the variety *bella* it is a bluish-white.

After flowering so early the plants will grow early. They should have plenty of room with abundance of air, and should also be placed in well-drained pots, using good brown upland peat fibre and clean Sphagnum Moss well chopped up. The plants require careful watering at the roots, but abundance of atmospheric moisture should be given. During the hottest part of the day a thin shading should be thrown over them to prevent the rich colour of their leaves being spoilt. WM. HUGH GOWER.

The hardy *Cypripediums*.—Doubtless the greater number of these which find their way into the hands of the planter are newly imported, and it is obvious that they must remain a long time out of the ground after being dug from their native place, and I have no doubt that in some measure the long period in which the roots are kept in a naked state causes a decrease of vitality. But this is not all. Are not the roots of these plants, which somewhat resemble hard twisted cord, and their crowns, which for firmness almost resemble a bit of bone, capable of misleading us, and causing us to believe that because they retain their firmness and plump appearance, they may with impunity be left out of the ground for a longer than ordinary time? Now I think this is a mistake. It is because the plants are hard rooted that they again so slowly, if ever, regain the normal condition. So that we see while hard-rooted things are apt to lead us astray by neglecting them to their injury, when that has happened they are of a class the slowest of restoration. If there is anything in these remarks, which are entirely based on personal observation, the lesson is clear that whilst out of the ground you carefully should protect the roots, but, better still, plant as early as possible after having been dug up. As I have said before, I prefer to plant these somewhat late in the season, just before growth commences, and, therefore, this would imply a preference for the later or spring importations. I am well aware of the difficulty that occurs in some seasons when, owing to the deeply frozen state of the soil, the wild plants cannot be dug until well into April. In such cases it may almost be too late to remove them so far as this country is concerned. With the earlier importations it is a good plan to place the roots in slightly moistened silver sand in boxes 6 inches or 8 inches deep, and stand them in a cool and airy place, yet with a little moisture and safe from frost, until, say, the latter end of March or April, first trimming away all the dead or blackened parts of the roots.—J. WOOD.

SHORT NOTES.—ORCHIDS.

Miltonia vexillaria (*Odontoglossum vexillarium*) is given a little more warmth at Syon House than some growers accord to it. The appearance of the plants now for some few years goes to prove that the plan adopted is the right one; the growth is close and sturdy—just what one likes to see in this Orchid.

Dendrobium nobile album.—This has been blooming freely in Mr. Dorman's collection at Laurie Park, Sydenham. The flowers are pure white, but they have a spot of the deep colour of the type at the base of the lip, and it differs from the plant known as *albescens*—which I noted a few weeks ago in these pages—in which the base of the lip is stained with light rose.—W.

Dendrobium strebloceras.—From Mr. Crispin, of Bristol, comes a raceme of a plant which

I think is this species. I should like to see the growth before being quite certain. It was first imported from New Guinea, I believe, by Messrs. Linden, of Brussels, but a lot of plants which a friend of mine had some few years ago came from Thursday Island. It is of no great value, but its spirally twisted sepals and petals give it a curious appearance. It requires a very strong heat and abundance of moisture. W.

Dendrobium nobile Gabrielianum.—This is one of the handsomest forms I have seen of this species. It was shown me in the Drill Hall at Westminster at the meeting on the 11th inst., and I was told the plant had been imported by Mr. Sander a short time ago. The flower is a little under the usual size, but this may arise from the plant having been but recently imported, and I should like to see it again. The flower is pure white, saving a large blotch in the lip of a deep bluish purple. It is a truly beautiful variety.—W. H. G.

The Indian *Crocuses* (*Pleiones*) are grown in large quantities at Syon, chiefly in pans of about 6 inches diameter, these being suspended from the roof, a mode of culture that suits them admirably. *Pleione maculata* is the chief variety grown, and for general purposes it cannot very well be surpassed. Flowering as they do at a season when good Orchids are somewhat scarce, it is surprising that more use in a general way is not made of them.

Cattleya labiata Schröderæ.—A nice raceme bearing three flowers of this variety comes from Mr. Crispin. Its flowers, although not the largest in the *labiata* section, are of a very nice shape, chaste in colour and agreeably perfumed, so that I cannot understand why it does not become more popular. It appears to me to be quite a distinct plant from *C. Trianae*, of which most persons make it a variety. It likes warmer treatment, thus indicating that it comes from a different locality.—G.

Cymbidium Lowianum.—This is now in fine condition at Syon House; the large specimen has eleven extra long spikes upon it fully developed, the individual flowers being of large size. The plant in question is a fine central object in one of the houses, and one cannot be surprised at Mr. Wythes' reluctance to remove it for exhibition, or even to cut the spikes for a few weeks to come. This is one of the few Orchids that thrive well in large pots. A fine specimen like this one is a decided ornament even when not in flower.

Cypripediums for cutting.—These are evidently much in favour at Syon. In the autumn there were large masses of flower of *C. insigne* vars., now there are *C. barbatum* vars. flowering profusely and in large numbers. For sending a long distance, which has frequently to be done, these are very reliable flowers, their durability being almost proverbial. The plants are not large, but the way in which they flower leaves nothing to be desired, the useful size of plant being decidedly preferable from a decorative point of view.

Vanda teres, which was first flowered at Syon more than fifty years ago is now thriving well there, and showing for flower freely; the growth of the plants is remarkably vigorous and sturdy. They are being grown at the western end of a stove where they receive the full advantage of the afternoon sun; the pots are plunged in Sphagnum Moss. The plants are small ones, carrying only about one growth on each, which is a far better method than growing them in the old-fashioned way in a mass in large pots or pans or even baskets.

Miltonia stellata.—I note that Mr. Wythes also showed this beautiful pale-coloured species at the last R.H.S. meeting. It is identical with *Cyrtorchilus flavescens*, but the growth is that of a true *Miltonia* (as *M. spectabilis*), with the pale yellowish-looking bulbs and leaves, which give an impression to those unacquainted with this class of Orchid that it is sickly; whereas quite the opposite appears to be the case from the vigour and profusion of spikes seen upon the plant at Syon. It is an Orchid not by any means a

common one, and at the same time quite distinct in its class, bearing long spikes of flower after the manner of *M. Clowesi*, but larger.—H.

STOVE AND GREENHOUSE.

GARDENIAS FAILING.

I NOW send you the roots of an old plant that you will see better the cause. The plant in question is three years old, and up to this last winter it grew well, but about Christmas the foliage began to flag. The treatment has been as follows: Soil, peat (soil turf) and leaf-mould; water, sometimes tap water from the limestone and rain water; temperature, summer 60° to 80°, and in winter 50° to 65°. As to the cause of this disease, I am at a loss.—R. H. D.

** The specimen sent is evidently that of a plant that has been hitherto thriving well. Having perused the letter describing the treatment given the plants, we cannot find any cause therein save in the record of temperatures, that given as the minimum in winter being lower than we ourselves should like to risk our plants in. We are very much disposed to think that this is the cause of failure. On a close investigation we can discern that the lower part of the stem where it came into contact with the soil (and that next the roots) is in a worse state of decay than higher up where severed from the branches. This is just what we should expect to see if the plants had been in too low a temperature, more especially if in any way over-watered during that period. The roots and parts contiguous to them would first feel the effects of cold, the soil being relatively cooler than the atmosphere. When 50° is given as the minimum, it is just possible that during the severe frosts the temperature fell even lower than that without "R. H. D.'s" knowledge. We remember in the case of some plants of our own that the same thing occurred when they were subjected to too low a temperature, the foliage flagging through the supply of sap being cut off, the wood growth in the branches showing no actual disease. We have a shrewd suspicion that this is the cause of the mischief. Water taken from the limestone would not, in our opinion, be at all favourable to the health of the plants. Gardenias thrive naturally in alluvial deposits wherein there is an absence of lime to a great extent, if not entirely. Rain water, on the other hand, would be congenial to them. It is not stated if artificial manurial stimulants have been applied; if so, and that too liberally, there again is a source of mischief. Another source of injury would be in the use of strong insecticides to kill the mealy bug. Supposing, for instance, that paraffin oil had been mixed with water and applied to eradicate this plant pest, this mixture would largely run down the stems and enter the soil at the base of the plants; the water there when coming into contact with the soil would be separated from the paraffin, leaving the latter strong enough probably to work the injury of itself alone. Without a personal investigation it is not possible to arrive at more precise decisions than those now sketched out as probable causes. In starting afresh we would advise 55° as the minimum temperature most certainly, the other suggested reasons being at the same time avoided.—Ed.

Acacia longifolia magnifica.—Can you tell me the name of the enclosed specimen of *Mimosa*, the cultivation of it, and where plants can be obtained, and if it can be grown in England?—N.

** The name of the enclosed specimen is *Acacia longifolia magnifica*. Like most members of that extensive genus, it is a native of Australia, and in this country it needs the protection of an ordinary greenhouse—at all events during the greater part of the year, but in common with many subjects from that region it may with advantage be placed out of doors during the summer. As regards soil, it succeeds well in a compost consisting

of two parts loam to one of well decayed leaf-mould or peat, with a good sprinkling of sand, while if the loam is very heavy an additional amount of leaf-mould may be added. In order to maintain the specimen in as symmetrical a shape as possible, any of the shoots that show a tendency to become too vigorous may be shortened back, as by so doing they will push out side branches, and tend to form a more bushy plant than would otherwise be the case. Repotting if needed should be carried out soon after flowering, as there is then the entire season for the plant to make its growth ready for the next year's display of flowers. Where there is a conservatory in which the occupants are planted out in prepared beds, as is often done in the case of *Camellias*, this *Acacia* will do well with just the same kind of treatment; indeed, it will flower far more freely when treated in this way than if grown in pots, for it must attain a good size before blossoms are borne in quantity. It can be obtained from most nurserymen who make a speciality of plants of this class.—T.

INDOOR PLANTS IN SMALL POTS.

WHERE plants are kept permanently in the dwelling house, they will, of course, consist principally of subjects grown for the sake of their foliage, and among them the different Palms predominate, though second to no other plant for such a purpose is the universally cultivated *Aspidistra*. Plants that are kept indoors are often in a far from satisfactory condition, and in many cases it arises from the pots being too large. Where the treatment of plants is but little understood, there is a great tendency to over-water them, and consequently when the pots are small and therefore full of roots, there is far less probability of causing mischief by an overdose of water than would be the case if the plants were in larger pots and a greater quantity of soil around the roots. It is surprising what fine Palms can be grown in quite small pots if they are not allowed to suffer from want of water and are assisted by an occasional dose of some stimulant. There are now so many concentrated manures that can be used indoors without any unpleasant effects, all of which are very good if applied according to the instructions. In using any of these manures for the first time, care should be taken not to overdo it, as it is far better to give two small doses than an excessive one. A little stimulant about once a month during the growing season will suffice to keep such plants as are above indicated in good condition. A fruitful source of ill-health in the case of plants that are kept in a dwelling-house is that they are a good deal exposed to draughts, and are consequently subject to extremes both of temperature and water; for, while an excess of this latter must be guarded against (and the use of small pots does this pretty effectually), if foliage plants are once allowed to get too dry, they are often irreparably injured. That annual repotting is by no means necessary in order to maintain indoor plants in good health is shown by an *Aspidistra* that I have kept in a sitting-room in a smoky district for seven years, during which time it has been repotted but twice, and it is now a splendid specimen in robust health. True, the watering during that period has been carefully done and the plant assisted with an occasional stimulant, while the foliage is always kept clean—another very important item. H. P.

Notes from Liphook.—The prettiest things that strike me here just now out are *Magnolia stellata*, *Narcissus pallidus præcox*, bright little *Waldsteinia*, white and purple *Fritillaries*, *Prunus triloba*, the rose-coloured *Pyrus japonica*, *Daphne Blagayana*, *Rhododendron Jacksoni*, *Saxifraga atropurpurea*, *Caltha monstrosa*, the new shoots of *Juniperus canadensis*, a dark *Trillium*, *Andromeda polifolia*, orange-coloured *Primula Alexandra*, *Orob. vernus*, Crown Imperial, white *Periwinkle* covered with bloom, and *Antennaria hyperborea*. Only think: some years ago, when at Rousseau's "Les Charmettes," there was a whole hedge full of

yellow Wood Anemone. I dug a bit up with my umbrella—broken in the feat—and from that day to this (nine years ago) never saw more of it. Yesterday, never thinking of it, I came upon it in a rough spot most flourishing and perky, much handsomer than some I saw at the Drill Hall, but it does not seem to have increased. During the last days of March *Berberis Thunbergi* and *B. dulcis* growing together—fine old bushes of both—looked beautiful in the "Sea View" nursery of Mr. Flower, near Havant. They were both full of bloom, though the buds of the latter were not quite expanded. The long sprays of *B. Thunbergi* in conjunction with the golden buds of *B. dulcis* formed a happy mixture. *B. Thunbergi* lasts well in water when cut. A rather fine specimen of *Hedera minima* grew against the wall of the house; it has an interesting appearance when well established. *Epigaea repens* has been covered with bloom here this spring. Besides the beauty which *Euonymus latifolius* gives us in the autumn from its fruit and leaf tints, the crimson involucre of the leaves as they unfold in the spring make it an interesting object then.—M. A. R., Liphook.

FLOWER GARDEN.

THE SPRING OF 1893 COMPARED WITH THAT OF 1892.

THIS spring has been a complete contrast to that of 1892. February, 1893, was a very wet month, and well kept up to the old adage of "February fill-dyke" and it has been succeeded by a remarkably dry and beautiful month of March. Last year February was absolutely dry throughout; so far as I remember, not a drop of rain fell in this county throughout the whole of it. We have, therefore, an opportunity of comparing the advantages to spring flowers and fruit trees of the two very different seasons, and without any doubt the wet February this year was most advantageous to that class of plants which delight us with their abundance of flowers in the early days of spring. I have never known a more flowery March than the one just gone by. The garden has been as great a pleasure, if not greater than at any other time of the whole year. Bulbs as a rule delight in moisture when growing, and the floods of rain in February came most opportunely, so that the plants grew vigorously and flowered most abundantly in the bright and warm March days. Crocuses, Snowdrops, and Squills came first, and afterwards Hyacinths, Tulips, and *Narcissus ornatus*, which last has now become one of the chief flowers of the spring border, and a delightful addition to the nosegays in the sitting-room. The Poet's *Narcissus* has yet to come, and it promises to flower well. I find poeticus rather a shy bloomer, while ornatus never fails to throw up a flower from every root, and when let alone in the border, it rapidly increases and makes a great show. It is one of the spring bulbs of which it is impossible to have too many, and it will not waste the room which it may occupy, as poeticus is apt to do, by having nothing but huge bunches of narrow leaves.

That pretty little flower, *Triteleia uniflora*, did not blossom at all with me last year; this year it has an abundance of bloom. The only objection to it is the Onion smell of the sap, but that is scarcely noticeable when it is placed with other flowers. The Dog's-tooth Violets have also been good this year, and few plants on the rockery are prettier in March than the *Erythronium dens-canis album*, which balances its wide-spreading white petals on a thin deli-

cate petiole. The common pink variety is also worth growing, though not so pretty as the white, but the handsome leaves are in themselves a sufficient reason for having this plant if a place can be found for it in some sheltered nook on the north side of the rockery. It does not like the full sunshine of a south exposure. Just now the Fritillaries are very pretty. I have not as yet succeeded with aurea, but Meleagris is, on the whole, the best of the Fritillaries to my mind, and growing in the Grass on the lawn by the roots of trees, they form an exceedingly pretty group at the present time, some nearly white, others of a peculiar snake colour. This has been a most favourable year for early Anemones. *A. blanda* has been flowering with me since January, and it has been followed by the beautiful Aldboro' form and the common fulgens. *Anemone blanda* is

purple, it is so very pretty nestling among grey stones. I got it from a cottager's garden, and it has done exceedingly well with me, but I have never ventured to divide it again, though division might be easily managed just after the flowering is over.

But that which has done more than anything else to make the spring garden here gay this year is an immense quantity of coloured Primroses and Polyanthus. I always sow Primroses, but in the following spring the result is only too apt to be altogether Polyanthus. I like both, but I get a greater abundance of pretty and showy flowers from the Primroses than from the Polyanthus. Some Primrose plants kindly sent to me from Munstead have been so covered with their pretty clear white flowers, that it seems only too likely that the plants will die from exhaustion. The

doubts as to the propriety of having fruit trees on the lawn, they would have been dispersed this year, for a prettier contrast than that formed by the Ribes and the Plum can hardly be imagined. Not far from these a beautiful and stately Pear tree, a Louise Bonne of Jersey, has this year been also very beautiful. If by-and-by I get a good harvest of fruit from both, it will be a very pleasant addition to the treasures of autumn.

It seems to me that the practical lesson we should learn from the comparison of 1892, with its comparative want of flowers, with 1893 and its abundance of them is this, to be more careful of storing up the rain when we get it, and if we have an unusually dry early spring, if February does not fill our dykes, then pour on water artificially and help forward the glorious beauty of the March and April garden. Much can be done with water almost all the year round, but if, contrary to ordinary rules, the wet months are dry ones, then it is of great importance to supply artificially that which Nature may refuse to give us.

A GLOUCESTERSHIRE PARSON.

PLANTAIN LILIES.

(FUNKIAS.)

FEW hardy perennials are more ornamental and showy than Plantain Lilies, as not only have most of them very beautiful foliage, but they bear a profusion of Lily-like flowers, the spikes of which are exceedingly useful for cutting, as they look well and last long in water. Besides being so fine and effective for borders, many of them make capital pot plants. Any of the variegated forms of *F. ovata*, taken up and forced, make a splendid show in a greenhouse, as does also *F. Sieboldi* (here figured), which has magnificent leaves, that are very striking on account of their colour, which is of a bluish metallic-green, with a glaucous hue pervading the surface. Planted out in deep, moist, rich soil in a shady position, this peculiar tone is intensified, and plants of this *Funkia* form noble objects in the hardy fernery or near the margins of ponds, in either of which positions they associate well with the various surroundings. The best for growing for the sake of their flowers are *F. subcordata grandiflora*, *F. spatulata speciosa*, *F. Fortunei*, and the different varieties of *F. ovata*. The time to propagate and plant Funkias is as they are beginning to grow. When required for cultivation in pots, Funkias should be potted in the autumn or winter and stood in cold frames to come gradually on and fit them for forcing, which needs to be done slowly if the foliage is expected to be of good texture. To get the variegation fine, the plants must have plenty of light, and it may be necessary also to keep them freely supplied with water and liquid manure.

Raising Nymphæas from seed.—At a recent meeting of the Massachusetts Horticultural Society, Mr. L. W. Goodell, of Dwight, said the seeds of Nymphæas should be sown in small pots in February or March, in good soil, well pressed down. The seeds should be placed on the surface and covered with an eighth of an inch of sand. The pots should then be immersed in a pan containing water enough to cover them an inch, and the water kept at a temperature of from 75° to 80° until the seeds germinate, a period varying from six to ten days. Before the seedlings become crowded they should be transplanted into 3-inch pots, and again into 4-inch pots before planting out in June. The starting of seedlings can be done in the dwelling house, care being taken to main-



Siebold's Plantain Lily (Funkia Sieboldi).

strikingly beautiful in the early months, but for general effect in the spring garden it does not equal *Anemone apennina*, which in shady corners this spring has been covered with its lovely light blue flowers. *Apennina* very quickly faded in the bright sunshine of this year, but in ordinary years, when we do not get so much sunshine, it is best in open places. *Blanda* lasts much longer, for although it came into bloom about two months before *apennina*, it is not over yet. In such a sunny month as we had in March, *Anemones* show themselves to the best advantage, and the brilliant scarlet of *A. fulgens* and still more that of the Aldboro' form make them contribute largely to the beauty of the spring garden. *Hepaticas* are among the special favourites of our early-flowering plants, and the rains of February certainly assisted them to produce abundance of bloom. Too much cannot be said in favour of the double

varied colours of early Primroses and Polyanthus make a delightful bunch of flowers when gathered. I must not pass by *Primula cashmeriana*, which is exceedingly early, and its pale blue flowers on their stiff rigid stems are very pretty. The little grey balls of flower of this plant are interesting and peculiar, and a great addition in my opinion to the early spring garden. This *Primula* seems to be as hardy as the wild Primrose of our hedges and it is very free-flowering.

I am convinced that we owe a great deal of the abundance of bloom, which every plant and tree has displayed this year, to the wet February, for I suppose there has never been a season in which fruit trees and flowering shrubs have been more covered with blossom than this year. *Ribes sanguineum* has been lovely. It happens to stand on my lawn near a large *Victoria Plum* tree, and if I had had any

tain the temperature and to move the plants to a sunny window during the warm hours of the day. The young plants grow rapidly under proper conditions, and they will bloom in 100 days from the time the seeds are sown. Some seedlings of *N. zanzibarensis* have flowered in sixty-five days from seeds started in June.

Lychnis coronata.—The Chinese *Lychnis grandiflora* figured in *Botanical Magazine*, 223. Plant glabrous, flowers solitary. Native of China and Japan; introduced 1772. First kept in stove, then in greenhouse, as considered delicate, and then it flourished in the open air. I took mine up in winter, just sheltered them, and raised young ones, thus keeping them about six years in the fifties. Since then cannot meet with one of the same colour. It was exactly the shade of a ripe Apricot, and bloomed in August when that fruit was ripe. Is it to be met with now?—S. N. W.

Sowing seeds (F. Z.).—It is not a very satisfactory way to mix up a lot of different seeds and then sow them broadcast without considering the effect likely to be obtained. It will prove a rare assortment, not particularly interesting or beautiful. We should advise you to sow carefully in clumps; but you may scatter such things as Poppies about with very charming effect in the wilder parts of the garden. As this is, however, apparently an ordinary garden you have to deal with, sow in clumps and masses, keeping each kind distinct. Marigolds, Poppies, and Nasturtiums (*Tropæolums*) would do well in the dry soil. Remember not to sow the seed too thickly, and thin out the young plants to sufficient distance apart for them to develop when large enough to handle.

THE ROCK GARDEN.

WATER IN THE ROCK GARDEN.

RUNNING water at all times impresses us with a sense of delightfully refreshing coolness. But in the rock garden this effect is still enhanced and emphasised, for here the water imparts life and beauty to the rocks as it dashes over cliffs and boulders, wetting with its refreshing spray the Ferns and other plants springing up from its mossy banks. Though rock gardens might be made very attractive and picturesque indeed without any visible water whatever, yet it cannot be denied that the presence of the latter imparts an additional charm, which should be taken advantage of whenever the opportunity occurs. A natural streamlet, especially in a large rock garden, is of the utmost value, and lucky indeed are those who possess it, not only from an artistic point of view, but also with regard to utility. The advantages offered by running water must be evident even to the most casual observer and need not be here enumerated. But in ninety-nine cases out of a hundred our rock gardens are far away from natural streams, and if water is to be introduced at all it has to be done artificially. It is this difficulty probably which has led to the extensive misapplication of water, as, unfortunately, too often seen in connection with artificial rocks.

THE ABUSE OF WATER.

If properly treated, water, either natural or only apparently natural, possesses a charm which no one can deny, but when used in a manner which betrays the artificial origin at a glance, it becomes ugly and repulsive. One of the most frequent abuses in the rock garden is the fountain. Among geometrical surroundings in front of a mansion this may be well enough, but can a greater discord be imagined than a fountain in a rock garden! Even the most inexperienced amateur when building rocks

will at least try his best to make his work look as natural as he can, but by the introduction of an artificial water-squirt, surrounded by the usual circular cement basin, even the best of rock gardens would be deprived of harmony, and all the merit the work might otherwise possess with regard to effect would be utterly lost through such an incongruous combination. In my opinion a fountain in the rock garden is the worst possible form of bad taste, which cannot be too strongly condemned. Quite as objectionable as the fountain are pools of stagnant water, no matter whether they are natural or artificial. The filth they accumulate on the surface and the foul atmosphere surrounding them should alone be sufficient to banish them from the rock garden, where their presence cannot in any way contribute to effect or utility, but would only be an obnoxious eyesore. Moving water is, therefore, the only form admissible either on a large or small scale. This does not imply that there should be no pond. On the contrary, a well-constructed irregular pond may be made a delightful feature in the rock garden, but this pond should never be stagnant and the influx of water should be plainly visible, no matter whether it be a mere dribble, a purling brook, or a roaring waterfall. If we have to deal with a natural streamlet, very little will be needed beyond a proper arrangement of stones and suitable plants on the banks, and perhaps here and there a suppression of the coarsest weeds, such as might endanger the well-being of the choicer plants we wish to cultivate. But, unfortunately, in the construction of rock gardens this will very seldom be the case, and I will therefore here consider the

ARTIFICIAL INTRODUCTION OF WATER.

It is quite an erroneous idea that in order to be effective large quantities of water must be used, and I hope to show in the following notes how to make the most of a small supply of water so as to give the utmost effect and prevent waste, which is a serious item where water has to be paid for by the meter, and often even then can only be supplied in small pipes. Some people construct their rock gardens first, and do not conceive the idea of introducing water until after completion of the work. This is a very bad plan, and can only end in failure as far as natural effect is concerned, as neither plants nor rocks can be rearranged as satisfactorily as if the water supply at command had been ascertained in the first instance. Even where only a very limited supply can be had, say, from a lead pipe half an inch in diameter, it will be found advisable to provide a tank or cistern fitted with a self-acting ball-tap. From this reservoir (which must, of course, be entirely hidden from view) a larger pipe might be laid to the part of the rock garden where the water is required, and by means of a regulating tap the supply could be controlled at will. Very few water companies will allow a supply pipe of more than 1 inch bore, but if a good-sized reservoir is constructed on the plan here suggested, this supply will be found quite sufficient even for a large rock garden, as a 2-inch pipe, or even a 3-inch or 4-inch pipe might be used for conveying the water from the reservoir to the rock garden, where the full force need only be turned on on state occasions, so to speak. Where water is displayed among the rocks, great care should be taken to use this only in the lowest portions of the rock garden. A pond, for instance, would look absurd and unnatural if any of the surrounding parts were on a lower level than the pond itself, as in Nature the water would of course fill the

lowest portions first. A rock garden which has been sunk by excavating to a considerable depth offers many advantages to the plants used, but when water is introduced this sinking will be found of additional importance, as it will enable us to display the water so as to give the most natural and pleasing effects. Starting from the highest level, I think the arrangement for water in the rock garden should be in the following order, subject of course to such alterations as might be required in special cases:—

- (1) A SPRING apparently emerging naturally from a rock in the background and forming
- (2) A STREAMLET with grassy or mossy banks, from which rocks and suitable plants protrude here and there.
- (3) A WATERFALL surrounded by boldly projecting rocks, and forming at the bottom an additional streamlet, gradually widening into
- (4) AN IRREGULAR POND surrounded by sloping banks of grass and rocks, narrowing again into a streamlet, and vanishing apparently beneath a rock.
- (5) A BOG BED fed by the overflow from the pond, and devoted to plants requiring an extra degree of moisture.

This may, perhaps, sound like a somewhat extensive programme, but it must be remembered that all can be done on the smallest scale as well as on the most elaborate. Water arranged on this plan is as suitable in a rock garden only a few yards in extent as it is in one measuring hundreds of yards in length and width; but the arrangement should, of course, be in proportion to the size, and it does not at all follow that the largest volume of water must always be the most pleasing. I will now deal separately with the various forms of ornamental water in the rock garden as enumerated above.

(1) THE SPRING.

Whether the water supply be abundant or scanty, we can have no better means of imitating Nature than by introducing the water as flowing from a cleft in the rock. If this cleft is a deep cavernous recess, the end of which cannot be seen, so much the better; it will then appear unlimited in extent. There is something particularly soothing about the murmuring sound of falling water, and if the cause of that pleasing sound is hidden from view, it will leave room for speculation and thus enhance the charm. To produce this effect is by no means difficult. That murmuring sound so pleasant to the ear cannot be produced by water falling on a hard surface (where a splashing noise would be the result), but only by water falling on another body of water. All we have to do is to lay a water-pipe from the reservoir above referred to to a water-tight pit, say 1 foot or 18 inches in diameter and about 1½ feet to 2 feet deep. This is best lined with cement concrete and must, of course, be masked with stones in such a manner as to be completely hidden. The valve or tap regulating the supply from the reservoir to the rock garden should be somewhere between this pit and the reservoir, as may be most convenient and the least conspicuous. The rocks around the pit should be arranged in the most natural and careless style so as to form the deep cleft referred to above, making the latter appear like a miniature dark cave. If the position is such that the sun can shine into this dark recess, and perhaps light up the space sufficiently to disclose the mouth of the water-pipe, it would be best to extend the little cave around a corner, so to speak, and introduce the pipe in a direction different from that in which the water seems to emerge from

the opening. This will make it quite impossible even on a bright day to see either the water-pipe or the real extent of the dark recess, which will appear very much deeper than it really is in consequence. If possible this arrangement should be fitted with a background consisting of rocks and a bold mass of suitable plants which will impart an additional appearance of reality to the scene.

This principle of construction should be the same, no matter whether the water supply is of the most modest extent or unlimited, and requiring a pit and cave of larger or smaller dimensions than those stated.

Exeter.

F. W. MEYER.

(To be continued.)

NOTES ON HARDY PLANTS.

Lilium pardalinum.—This belongs to the rhizomatose section. The scaly root-stocks sometimes reach a length of 16 inches under cultivation, so that at a moderate calculation of the rate at which those stocks lengthen, and seeing that roots are attached to them all their length, I think we must conclude that a good piece of root-stock attached to the leading point or more bulb-like part must have something to do with the capabilities of a specimen for after success. Of the following facts I am certain, having verified them many times: If you disturb or transplant this Lily, however strong the bulbs or well furnished with roots the root-stocks, or however favourable the conditions under which you may plant, for the first year there will be comparatively little growth, perhaps but a few inches, possibly 2 feet, which is a mere nothing in a Lily which when doing well reaches 7 feet to 10 feet. The second year after removal the chances are that the growth may be anything from 4 feet to 8 feet, at any rate with the typical form, for there are some varieties that rarely reach more than 3 feet. It is therefore clear that, owing to the nature of the roots of this Lily, though otherwise naturally vigorous and impartial as to soil, it only asserts its vigour after it has had time to re-establish itself. Two useful facts in connection with the Panther Lily may be added. Granting it time as above described, it is one of the most free-growing and free-blooming Lilies that we can plant, and though better for a peaty and moist soil, it is one which will thrive in almost any kind of garden soil that is not extremely dry from its chalky or sandy character or that is not in an actually sour state.

Helianthemum Tuberaria.—It is a very common thing to experience blanks in spring where this flourished in the previous summer. Seedlings, self-sown or otherwise, invariably come through the winter better than older plants that have flowered. Such a gem, however, is indispensable wherever there is a determination to grow first-class species in the rock garden, and one should take into consideration the fact of its tenderness, and either protect the older plants by means of shelter from wet during winter, or by the propagation from seed for young stock.

Anemone blanda.—This flower of the season under favourable conditions will, in a few years, spread into broad patches; but this is not by means of its roots, for they do not so much resemble the root-stalks of the wood Anemone as a tuber. It is true, from the way in which the leaves from the tubers spread before becoming visible on the surface would rather indicate, that the roots were of a running kind, but it is not so. A root five years old may be but an inch in diameter in its broadest part, almost black and somewhat rounded. The broad patches that may form are more likely to be produced by self-sown seed, which is abundantly produced, quickly germinates and comes to maturity the second year. I think this will account for the rapid increase of this pretty winter bloomer, which, so far as I can see, is otherwise incapable

of anything like being multiplied largely within the space of three or four years.

Tree Pæonies.—The chief trouble with these is their early growth and bud development, so that our late frosts catch them. They should, and certainly may, be kept back. This I have done by propping a board or stone slab in front (south) of them, or even a bushy branch or two would do. If a slab, it should be well secured from falling on the plant. This puts it in an artificial north aspect, but it should be done before growth starts; it will not be effective if done later than January. Woodville, Kirkstall. J. WOOD.

Narcissus Stella.—Among the many kinds of the Star Narcissus, this may be selected for naturalising, being early, free and constant. In a little copse where the trees are not very thick it is charming, and it is as beautiful in the hand as in the wood. It has a soft yellow cup, but the perianth segments are of a pure cream-white, the form specially open and starry. It has the merit of great distinctness in a family where many are much alike.

Curious forms of the common Primrose.—I send specimen blooms of two varieties of the common Primrose, which, I believe, are rare; one is semi-double, and was found near here. The other has a calyx nearly as large as the flower, something in the way of the Hose-in-hose Polyanthus, but it (the calyx) is of normal colour—that is, it does not in the least partake of the tints of the petals as in those sports. It originated in Devonshire.—J. M., Charmouth, Dorset.

Lilium Henryi.—This beautiful and distinct Lily has at last made its appearance in the trade, and we shall now doubtless see it more generally distributed than has hitherto been the case, for except at Kew, where it has been for some time so successfully cultivated, it does not appear to be grown in this country. At all events the consignment offered by Messrs. Protheroe and Morris on March 22 was the first, as far as I know, for sale in this country. The bulbs sold were firm and compact and of a reddish brown or mahogany colour, bearing, in fact, a good deal of resemblance to some other Asiatic Lilies. Thus the bulbs of this Lily, of *L. nepalense*, *L. sulphureum* (also known as *L. ochroleucum* and *L. Wallichianum superbum*), and some of *L. neilgherrense* are scarcely to be distinguished from each other, though no difficulty would be entertained in separating most of the bulbs of *L. neilgherrense*. It may perhaps be thought in confessing my inability to speak positively concerning the identity of the bulbs above mentioned that my knowledge of them is very limited, but such is by no means the case, and it is only when large quantities are handled that the difficulty is particularly brought home to one, as the bulbs vary very much in shape according to the conditions under which they have grown, while the depth of colour in the bulb is often a question of more or less exposure. In returning to *L. Henryi*, it may be mentioned that the bulbs sold were in very satisfactory condition, and as it has been proved at Kew to be of good constitution, it will no doubt before long be grown to a considerable extent.—H. P.

Daffodils at Abberley Hall.—To see Daffodils at their best, they must be naturalised in the Grass. Not that these need be the choicest by any means, as these latter are reserved for border or garden culture; but such as our native Lent Lily (*Narcissus pseudo-Narcissus*), the common double Daffodil (*N. Telamonius plenus*) and *Stella*. The above kinds grow amazingly in such positions, especially the old double Daffodil. The prettiest effect is produced, I think, by those fringing the edge of a rivulet. There are few places where Daffodils could be planted to have a prettier effect than in the pleasure grounds here, there not being a level stretch about the place except those we have formed for special purposes. The old Orange Phoenix (Eggs and Bacon) is also a capital variety for naturalising. Along the fringe of trees I also

planted such good kinds as Sir Watkin, major and maximus, princeps, obvallaris, Emperor, Empress, Horsfieldi, Ard-Righ, Henry Irving, Leedsii, biflorus and a few others; but I find with such choice kinds as these, that they succeed better in the garden. To ensure success with Daffodils in the Grass, the foliage must be allowed to decay before the Grass is cut; therefore, those people who want a closely shaven lawn in all prominent positions must not expect to enjoy the Daffodils in the Grass if they have the tops cut off almost directly after blooming. In the borders I have Golden Spur, the pretty Johnstoni varieties, Queen of Spain and Mrs. Geo. Cammell, rugilobus and Barri conspicuus, incomparabilis Princess Mary, Nelsoni major and the different varieties of poeticus. In many gardens poeticus is only represented by the old Pheasant's-eye. What other flowers are so useful at this season as Daffodils? Even the Orchids and the lovely Tea and Noisette Roses have to stand on one side for the time being. These latter we can enjoy at all times, but the Daffodils are the flowers of to-day.—A. YOUNG.

FLOWER GARDEN NOTES.

ONE or two points pertaining to Daffodils may be interesting in connection with their naturalisation in woods, fields, or pleasure ground. In a previous note when recording the planting of the old double yellow, together with St. John's Wort, under Cedars and evergreen Oaks, I mentioned the Daffodils might be pronounced fairly satisfactory. The experience of the present year bears out this qualified statement, for although there are few bulbs in this position that have not given us one or perhaps two flowers, they bear no comparison with others in more favourable situations. The best results are obtained near the water where the foliage is very sturdy, and individual bulbs are throwing five and six fine large flowers. They make a grand show just at present with short turf in front of and about them, and a background of dwarf Laurels. Our three early single trumpets, Tenby, Scoticus, and Golden Plover, all derived considerable benefit from a heavy mulching of leaves; the foliage was pushing strongly when the leaves were removed, and the spell of warm weather in February brought them early into flower. The remarks made above as to the merits of *Telamonius plenus* in different positions would apply with equal force to the Star section. Many of the common and cheaper kinds of this family were planted in quantity on slopes of varied aspect and in various positions in glades, but they do not seem thoroughly at home. They keep alive, it is true, and most of them throw a flower, but there are not the healthy vigour and yearly increase in number and size of flowers obtainable from well-worked borders where they were planted at wide intervals in big clumps for cutting.

Attention should now be directed to the stock of bedding stuff to make sure the various quantities are to hand, and that good sturdy plants will be available by the middle of May. Where circumstances permit nearly all zonal Pelargoniums may be spring-struck in single pots, they make nice stocky stuff, and do not lose half their foliage at planting time, as is often the case with plants taken from boxes. Not half the Pelargoniums are grown now for bedding either in number or variety that I remember twenty years ago, and unless required for any special purpose it is hardly advisable to recommend a return to those days, so many different things of sterling merit for brightening up the summer flower garden having come prominently to the fore of late years. However, I am not one of those inclined to shoulder out Pelargoniums altogether, for if masses of bright colour in big, bold beds are required, it would be hard to beat Henri Jacoby, King of Bedders, or Amaranth, relieved by an occasional plant of variegated Ribbon Grass, *Nicotiana affinis*, or one of the Eucalypti. Again, for an arrangement of small beds where these are close together and only a narrow walk or a thin strip of Grass intervening, the dwarf compact va-

rieties are very useful. One sometimes hears the remark, "It is very difficult to plant small geometrical gardens nicely," and in a certain sense it is doubtless true. Big, bold beds standing out by themselves on turf are more easily dealt with; still, the difficulty is often aggravated by endeavouring to crowd in too many colours. It is far better to lay down the rule, one variety to each bed, relieving the surface by a few taller and lighter plants, and if one has some four or five varieties of the best of the dwarf Pelargoniums and a similar number of tufted Pansies, they can make a brave show. I can recommend West Brighton Gem, Surprise, Chelsea Gem, Golden Harry Hieover, and La France Ivy leaf to supply the varied colours in Pelargoniums, and Bluebell, Nabob, Virginalis, and Sir Joseph Terry in their respective colours as dwarf Violas. It may be well to remind the novice in tufted Pansy culture that to secure a continuous and regular supply of flower right through the season prompt removal of seed-pods is absolutely necessary. Sweet Peas that were planted out from pots before the commencement of the spell of frosty weather have made very little headway. When growth is practically at a standstill attacks from birds are specially to be dreaded, and to ward off this and also as a slight protection against frost and biting winds it is well to stake rows and rounds, and afterwards stick in a few branchlets of Spruce Fir. Any fairly open spaces in the shrubbery border will answer admirably for clumps of Sweet Peas; they want some good manure and deep tilth to ensure freedom of growth, and then, as in the case of Violas above mentioned, prompt removal of seed-pods to keep up the supply of flowers. The better class annuals, as Asters, East Lothian Stocks, annual Chrysanthemums, Phlox Drummondii, and Zinnias, that were sown on a very slight hotbed in the middle of March are now well up. Being sown thinly, most of them will stand where they are until they can be shifted to their summer quarters; others that are rather thick may be transferred to boxes, that is if a large stock is required. We have broken down a border that was deeply dug in autumn and shall sow Godetias in variety, Clarkias, and Cornflower for cutting. These together with Iceland Poppies and scarlet Flax are sown thinly in rows, and the plants sufficiently thinned to secure good flowers.

In a note on flowering shrubs lately, reference was made to the effect that can be produced by judicious combinations either on a large or small scale, and a striking instance of the same came under my notice this season. A portion of a large border (the foreground) had been filled with alternate plants of *Spiraea Thunbergi* and *Pyrus japonica*; the effect from a distance reminded one of a similar combination of colour for a large summer bed, viz., Fire King Dahlia and the white Marguerite. It is a question if we pay quite so much attention as their merits deserve to the deciduous and evergreen flowering shrubs either in the preparation of ground before planting or in the after treatment. There is often a lot of time and money devoted to beds that are to be occupied with American plants if the natural soil is not considered suitable, but for flowering shrubs as a whole, little endeavour is made to study individual tastes, although in a walk through different gardens it would be easy to note anything doing specially well, and a few inquiries would soon make one conversant with the nature of soil and subsoil, mode of treatment at and after planting, the latter to embrace mode and extent of pruning, and also if any annual forking is practised on borders. Personally, so far as the early flowering shrubs mentioned in a previous note (the *Cydonias*, *Ribes*, *Spiraea prunifolia* fl.-pl. and *Thunbergi*) are concerned, I have found the best results from a fairly holding soil, as little pruning as possible, except slightly heading back any straggling shoots, whilst so far as forking the borders is concerned, this operation is as strictly tabooed in the shrubbery as it is on the Strawberry quarter. I am sorry to chronicle once more the loss of all the *Wistaria* bloom; the buds crumble into dust at the touch. This is certainly a grand wall plant for covering a

large space, but even in the bud stage it is so liable to suffer from spring frosts as to render one rather chary in giving it a place. Roses on walls are also rather badly nipped. I have not as yet been able to make a thorough inspection, but one or two large plants of *Homère* and *Malmaison* that came under notice showed young growths browned and drooping.

E. BURRELL.

Claremont.

THE CULTIVATION OF VIOLETS.

UNAVOIDABLE circumstances have prevented my sooner replying to the courteous comments of Mr. Strugnell in your issue of March 25 (p. 231) on an article of mine on the above subject which appeared in *THE GARDEN* a month earlier. Near the commencement of my note I qualified my remarks as applying only to "some may have hitherto failed to score success through being unfavourably situated as regards soil or climate, or perhaps both," and near the close I admitted that "the procedure . . . adopted here differs considerably from the practice of other most successful growers—so, probably, do our position and climate; but to those similarly situated and desirous of growing this universally-beloved flower, I would again emphasise the following points," &c., so that I had no intention of dictating, or to dogmatise, or to lay down hard and fast general rules, but simply detailing the (tolerably successful) cultivation as carried out here under the adverse local conditions enumerated, and advocating similar treatment by those who are as unfavourably situated as myself. As to my not mentioning bottom-heat, it was because I do not now use it, and I think such was implied in various sentences, or that, at least, it was unnecessary, as for example, "removal to winter quarters—the latter end of September . . . the small single crowns will have developed into great clumps, bristling with both flowers and flower-buds." Again, the full exposure advocated on all favourable occasions after pitting I intended should imply the same thing. During over fourteen years' struggle in growing Violets in large quantities, and of fair quality, and in such unsuitable soil as even the best available here is, one naturally has tried many experiments with a view to arriving at a tolerably safe anchorage. Some have proved utter failures, and others stepping-stones to improvement, and whatever notions I might have had as to my abilities in Violet growing, from previous experiences gained in more favoured spots as regards soil, &c., I found them of little avail here, owing to altered conditions, which quickly necessitated me striking out of the ordinary rut and orthodox methods.

In those days Marie Louise was in its infancy, a comparatively new kind, but of such marked superiority, that it quickly became popular and established its reputation, which it still maintains, notwithstanding more recent claimants for honour. Of course, the first step with the new-comer was rapid and extensive propagation, and in such cases one cannot resist putting in anything that will eventually increase the stock; hence, cuttings, layers, and divisions were resorted to. At the same time careful observation soon detected which of these formed the best flowering crowns, which in my case proved to be the short runners I advocate, and which eventually became the only mode of increase. I am fully aware, as Mr. Strugnell states, "that there are growers who for various reasons prefer those methods which give so little satisfaction to 'J. R.,' but there are probably equally as many who prefer the short runners, and I notice in a contemporary to-day that Mr. Iggulden—who, by the way, Mr. Strugnell holds up as a believer and practitioner in cuttings—strongly advocates the use of these short, close-at-home runners—another convert, evidently.

Planting on ground other than what was in good heart and well tilled I have not tried, feeling certain that on our light arid soil it would end in a lamentable failure, but I have tried Violets in shady positions under north walls, between tall Pea rows, under fruit trees, and elsewhere, but found full ex-

posure far more satisfactory. Replanting in the winter pits for growing in the summer to save disturbance has also been tried, but with less success than anticipated. Although M. Louise commences to bloom here too early—if such be possible—so that forcing with even mild bottom-heat is quite unnecessary, still this again has been tried and found wanting, for the blooms lack colour and solidity, and the plants become crowded with small useless leafage. With Marie Louise retarding is far more essential than forcing in our case. As for filling up the pits to the necessary level for the plants, I have permanently filled them up with rough stones to the required height, for finding that heating materials underneath proved detrimental to the well-being of the plants, and that solid materials became clogged and sour and interfered with effective drainage, and, moreover, the pits—three in number, each 60 feet long by 6 feet wide—were constructed specially for Violets, I considered their welfare should be paramount, and I utilise them in the summer for salading, French Beans, and such like. Happily, I am not called upon to grow Violets in pots, for here a bunch of blooms is more appreciated in a room than a plant in a pot; so Neapolitan may be all Mr. Strugnell claims for it for pot work, but with me for frames it had to give place to Marie Louise years ago, as the blooms deteriorated so soon after the first few gatherings.

J. R.

Tan-y-bwlch.

GARDEN FLORA.

PLATE 903.

NEW NARCISSI.

(WITH A COLOURED PLATE OF 1, ALBATROSS; 2, SEA-GULL; 3, SEEDLING PHEASANT'S-EYE.*)

THE raisers of the host of Daffodils which we now possess in our gardens must either have been singularly fortunate or have rejected all but the best of an immense number of seedlings. The latter is probably the fact, for my own experience shows that nothing like one seedling in a hundred is even the equal in size, form, colour, or general beauty of the kinds already in commerce, and that it is very difficult to obtain a distinct break away from and in advance of these.

The flowers, however, of my own raising here figured from Mr. Moon's beautiful drawings may fairly be called such a gain. The two larger varieties in the plate, Albatross and Sea-gull, came from one and the same pod of seed, which was borne by the well-known *N. poeticus*, fertilised by pollen of *N. Empress*. I find it a common occurrence for flowers differing considerably in colour, and even in form, to be produced from the same seed-pod. The noteworthy feature of this present hybrid is that the pollen-parent, *N. Empress*, has scarcely affected the general character of the flower, beyond slightly lengthening the crown and giving a great increase of size. The plant is, in the case of both Albatross and Sea-gull, almost a *poeticus* pure and simple in shape of flower, foliage and general habit. Thus it stands apart from the class of *N. incomparabilis*, which in appearance has a place midway between its parents, Ajax and *poeticus*; but in size of flower, stature and

* Drawn for *THE GARDEN* by H. G. Moon from flowers sent by the Rev. G. H. Engleheart, April 27, 1892.

PLATE 10
1892



GROUP OF NARCISSI.
1. ALBIVITROSS. 2. CHA. GULF.
3. SEEDLING PHEASANT'S-EYE.

vigour, the hybrid has left the poeticus altogether behind, and indeed stands head and shoulders above almost every Daffodil in my garden. In a favourable season the flowers are nearly 5 inches in diameter. The orange-scarlet colouring of Albatross is striking and vivid, not being suffused or shaded gradually from the edge down into the cup, but laid on in a solid, ribbon-like band. This flower was awarded the medal for the best seedling exhibited at the meetings of the Royal Horticultural Society in 1891.

The seedling Pheasant's-eye is a sample of a strain which I have obtained by intercrossing *N. p. ornatus* with *N. p. poetarum*, which has a deep crimson eye, but a flimsy petal and an inferior constitution. My object has been to combine the richly-coloured eye of the latter with the substantial and well-shaped petal and robust habit of the former. In this my success has been very encouraging, and I am hoping to still further develop the possible improvements in the beautiful race of Pheasant's-eye or Poet's Narcissus.

G. H. ENGLEHEART.

Appleton, Author.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

SEAKALE.—It is quite time all operations connected with the planting of Seakale were finished, or the chances are the roots will not have sufficient time to be strong enough for forcing. Where seeds are relied upon for working up a stock, these should now be sown, but I do not consider seedling roots equal to root-cuttings. The seeds should be sown in drills drawn 2 inches in depth and from 18 inches to 2 feet apart. Sow the seeds thinly, afterwards thinning out to 1 foot apart. All that is necessary is to select an open position and in a fair state of fertility. Seakale which may have been blanched where growing should have all old material cleared away, so as to allow the fresh growth to come away without hindrance. Any roots that have not been forced must have the tops cut over, or the growth will form a flower-stem. To think by leaving the crowns intact that a stronger root for forcing will be formed is a fallacy. The tops might be allowed to grow 3 inches before cutting over, as these make an excellent vegetable, that is if other vegetables are likely to be scarce.

FRENCH BEANS UNDER PROTECTORS.—It is very unwise to trust such a tender subject as the French Bean to the open borders before the orthodox time considered safe for this country, or in all probability the grower may suffer for his pains in seeing the whole lot cut off by frost. I have just cleared a frame of Potatoes, and although the heating material is exhausted, all that is necessary is to level down the soil and draw drills 15 inches apart, into which drop the seeds. Sown in this manner and kept well supplied with water, the Beans always do well. Others may be raised by sowing three seeds around the sides of 4-inch pots, the plants when large enough being set out under handlights in a sunny position. Shallow frames placed on a sunny border may be likewise called into requisition. One of the best aids I have ever seen for forwarding such dwarf tender crops are long portable lights placed along short rows on a warm south border. These are formed by having two 12-inch boards placed on edge the same distance or 15 inches apart, squares of glass being fixed along the top in a groove.

PICKLING ONIONS.—These may also now be sown. What is wanted is a very open position

well exposed to the sun, the soil also being fairly fertile, but not over rich. The surface must be firm, and the seeds sown in shallow drills 6 inches or 9 inches apart. It is when the seeds are sown on loose and over-rich soil that the bulbs grow too large.

LATE CELERY.—Of early and mid-winter Celery there is generally an abundance in the majority of gardens, but of late there has been a deficiency. This should not be, as a more useful crop could not be grown, as even if not used as salad it comes in excellent as a vegetable. Standard-bearer, a variety raised in this country, is a capital late variety, that is, if procured true. To secure a stock of late plants, the best course is to prepare a frame by placing a layer of rotten manure in the bottom, surfacing this over with 3 inches of fine soil, on which sow the seeds thinly. The seedlings may be pricked out when large enough, or they may be lifted bodily and planted intact direct into the trenches. In mild parts of the country the seeds may be raised by preparing a bed in a warm corner in the open air, taking care that watering receives attention.

EARLY VEGETABLE MARROWS.—I am no advocate for raising the plants of Vegetable Marrows too early, that is unless there are special conveniences for growing the plants on. A few seeds if sown now, the plants potted off as soon as ready, and grown on in fairly warm quarters, will give plants early enough for turning out on exhausted hotbeds that may have been used for Potatoes and such like. A plant or two if set out in the centre of each light, a suitable mound of soil having been previously prepared, will, if carefully attended to, grow away freely and yield a supply of early fruit. Handlights placed over gentle hotbeds may also be used; or if the frames should be occupied with Potatoes at the time the plants are ready, remove a root or two from the centre of each light, so as to make room for the Marrow plants.

ATTENTION TO GROWING CROPS.—At the time these notes are being written the surface soil is in a very dry and parched condition. The young crops now appearing must not be allowed to suffer from the want of timely hoeing, which, in addition to keeping down weeds, also stimulates the growth of the plants. A. YOUNG.

FRUIT HOUSES.

SETTING GRAPES.—In order to have the berries of the largest size, it is necessary that they be well furnished with seed or stones. They will attain a good size when containing from one to three stones, and occasionally without any at all in them; but with the full complement or not less than four stones in each, there is a much greater certainty of the berries being large and perfect in form. Such free-setting varieties as Black Hamburgh, Madresfield Court, Alicante, Gros Maroc, Gros Colman, Lady Downe's, Foster's Seedling, and Golden Queen very frequently set regularly without any extra pains being taken with them. Not so Muscat of Alexandria, Canon Hall Muscat, Muscat Hamburgh, Mrs. Pince, Black Morocco, Alowick Seedling, and West's St. Peter's, which ought always to be artificially fertilised, and in some instances will set all the more surely if pollen from more free-setting varieties is transferred to their stigmas. In each and every case an advance of about 5° may well take place in the night and day temperatures, a chink of top air being given as early as possible without lowering the temperature, increasing this according to the state of the weather. This, with the aid of a little warmth in the hot-water pipes, will lighten the atmosphere and dry the pollen thoroughly by mid-day, if not before. Then is the time to smartly tap the rods of the free-setting varieties, this effectually distributing the pollen and ensuring a perfect set. Shy setters, more especially those with a tiny globule of viscous matter on their stigmas, ought to be lightly touched over either with a rabbit's tail or camel's-hair brush, or the bunches may be drawn gently through the palm of the hand, the latter being the surest method of

removing the globules from the Alnwick Seedling flowers and effecting a good set. During dull close days none of the flowers dry properly, and if a full complement of stones is wished for in the berries, then hand-setting should be practised on all the varieties, going to the shy setters after the hand or brush is well charged with the pollen from the free-setting varieties. Overhead syringing should wholly cease directly the Vines are coming into flower, keeping the atmosphere also drier, especially during the early part of the day. Very early closing also should be discontinued for a time, or till the flowering period is over.

THINNING GRAPES.—An early start ought always to be made with this important work. Not only is this advisable for the sake of preventing the waste of the Vine's energies, but when the commencement is deferred till the berries are about the size of Peas, the thinning cannot be done so quickly nor cleanly. It is bad enough when the Black Hamburgh is thinned late, but in the case of Gros Maroc, Alicante, and other compact bunches, thinning after the berries nearly touch each other is a very tiresome job. Known free setters may be nearly or quite completely thinned at once, at least two-thirds of the berries as well as all rubbish being cut out. It can be readily seen which promise to develop into the finest berries, these being the broadest and having the stoutest foot-stalk more often than not being in a central position. Especially ought berries crossing each other or having an inward tendency to be cut out, leaving some of the latter being a frequent cause of the early decay of a bunch. Madresfield Court, Gros Maroc and Gros Colman ought particularly to be hard thinned, the berries if given good room attaining the largest size. It pays well to thin Alicante, Lady Downe's, and any other varieties that are to be kept late, extra hard, the berries at no time pressing against each other. Shy setters should be very lightly thinned at first. In addition to the shy-setting varieties already named, Buckland Sweetwater and Gros Guillaume ought also to be very sparingly thinned; in fact if these are very freely shouldered up, comparatively few berries will have to be taken out, and these principally stoneless ones. It is a mistake to defer tying or slinging up the shoulders till the second thinning is given. It can be done much more quickly and cleanly at the first thinning. Unless the long shoulders are so drawn up to a horizontal position, they ought to be either wholly removed or considerably shortened in length, a compact conical bunch being the best form. Perfectly clean scissors should always be used, taking care not to rub the reserved berries with these even. If rusty or dirty scissors come into contact with the berries, the marks will prove eventually to be serious blemishes—the human hair or woollen caps rubbing against the berries also greatly disfiguring them.

MELONS IN PITS.—Heated pits, at present used for a variety of purposes, including forcing vegetables, will soon be at liberty for Melon, Cucumber and Tomato culture. In anticipation of this I should raise young plants rather than plant out any that have been in small pots long enough to become badly root-bound and starved. Sow either Melon or Cucumber seed singly in 4-inch pots, using nothing but loam for the former, and if the site cannot be got ready by the time they are fit for their fruiting quarters, give them a shift into larger pots and keep them growing strongly. Melons especially must be grown near the glass, but in very many instances it would be too great an undertaking to fill up deep pits with heating or other material, and the simplest way out of the difficulty is to enclose some strong loam either at the front or back of the pit, planting in this and training either up or down the lights over a temporary trellis of some kind, or even wattled hurdles. Two or three bushels of strong loam, with a sprinkling of lime and dissolved bones added, are sufficient for each plant if only water and liquid manure are freely given when the crops are swelling. About two plants to a light are ample, these being grown without stopping till they are nearly across the pit, and fruited as quickly as possible.

Should the summer prove dull and cold, being able to turn on fire-heat will be a great advantage, the crops in unheated pits and frames not doing well in such seasons. Now is also a good time to raise plants for growing in unheated pits and frames.

PRACTICAL.

PLANT HOUSES.

GREENHOUSE PLANTS—**EARLY-FLOWERING EPACRISSES AND ERICAS**.—These will now be past their best, if not completely faded; no time should therefore be lost in pruning the plants so as to start them afresh into growth as soon as possible. It will be observed if closely watched that the Epacris (and some of the soft-wooded Ericas, too) immediately push away fresh growth upon the terminals after the flowering period. To allow them to do this is simply wasted energy; in some instances I have observed it whilst the Epacris were still in full flower, then the best way is to simply pull out the points. Now, however, the pruning hard back will save that trouble. If delayed, the breaks will usually occur higher up the shoots, and then there may be a little hesitation in using the knife so freely. If about 2 inches of the old wood be left, that will be ample to secure a sufficient number of young shoots; even less will suffice. Through hesitation in pruning the plants they soon become leggy and unsightly; this being the case, it should be carefully avoided. Its omission is the cause of the plants reaching the rubbish heap years before their time. As soon as the pruning is completed the plants will enjoy a moist atmosphere for a time to encourage the fresh break. A lateinery will answer for this purpose, or a Peach house, provided in either case the plants receive all the light possible. A pit with an ash bottom and a slight amount of top-heat will, however, be better. With light syringings and a genial temperature, fresh growth will soon take place. Any plants that need a shift should have attention as soon as possible after pruning when the growth is on the move. If the plants have become unsatisfactory at the roots from sour soil, a slight reduction of the ball, so as to repot into the same size again, is a good practice and a far safer one than using larger pots. Freshly-purchased plants in small pots will invariably take a shift with advantage, but only into pots one size larger. I am no advocate for large shifts; for these plants it is a mistake, having due regard to permanency. Firm potting should be the invariable rule. It pays to take pains with this work, for if it be rushed through as if dealing with soft-wooded plants, failure may reasonably be expected, and that in quick time. The best of peat should be used, that which handles hard being the better to choose; soft spongy peat retains too much moisture. Do not pot for the sake of potting; once in two years is quite sufficient when due care at other times is taken of the plants. In a few weeks' time, as the growth progresses, the greenhouse will be the best place for them. All drawing up of the shoots in a weak manner should be carefully avoided, or they will eventually not be able to carry their own weight.

STATICES.—These useful greenhouse plants will now in most cases be pushing up their flower-spikes, but if a late crop of flowers is preferable, the first spike can with advantage be removed in an early stage. For instance, if a good show is required during the latter part of the summer, this is a better plan than retaining the old spikes so long upon the plants, and that, too, after they have really faded. Where the plants are now showing freely and are fairly advanced some weak liquid manure will greatly assist them. For this purpose that from the farmyard is very good, but I have also used with good results that made from the best Peruvian guano in a weak solution. Statice when at this stage require a goodly amount of water to sustain them; it is never advisable, therefore, to let them get too much on the dry side. Young plants in small pots may now be safely potted, their progress in growth being as important as their flowering, and more so in fact if larger plants

be required. It is never advisable to let them flower too freely in a small stage; it weakens the growth and hardens the wood, so that future progress is not nearly so satisfactory. Cuttings will strike freely at this season if fresh stock be needed, a gentle heat accelerating the progress.

PELARGONIUMS.—Those of the show and fancy sections where they are showing for flower should now be liberally treated with stimulants, particularly if the plants be in comparatively small pots. Soot water is a very good change to other liquid manures, or light dustings of an artificial compound will answer well. Do not on any account allow the plants to suffer now from want of water; they will now take as large a quantity as against as small a quantity during the winter season. Green-fly must not be allowed any hold whatever; this insect will, if it has its way, soon spoil the work of all the season. Any needful tying out of the shoots to prevent overcrowding should be attended to in good time; do not, however, use large or clumsy-looking sticks; the smaller these are the better for future appearance. If a late crop of bloom is preferable, it is not yet too late to stop the plants; if this be done now they will flower in July, when probably in many cases they would be of considerable service. In any case, however, a prolongation of the season is preferable to having such a number of plants in full flower at one and the same time. Ventilation should now be freely given in any case, no shading or over-shading by other plants being permitted, whilst overcrowding also should be carefully guarded against. Shelves will still be good places for the later plants, provided they be well attended to as regards watering.

JAMES HUDSON.

ORCHIDS.

THE cool house Orchids are now making good growth, the roots running freely amongst the rough fibrous peat and Sphagnum. It cannot be too strongly impressed upon growers that these plants seldom fail to do well if the Sphagnum Moss makes clean healthy growth upon the surface, but it ought not to be allowed to cover up entirely the pieces of broken pots, charcoal, and lumps of peat. When the Moss grows too much it may be clipped over with a pair of scissors. Nearly all the cool house *Odontoglossums* and the *Masdevallias* succeed admirably with this treatment, and anyone with a fair knowledge of plant culture can manage the watering. It is important that rain water be used, and at this season it may be used freely. None of the plants should be allowed to become over-dry at the roots. The ventilation of the cool house is certainly of more importance than the watering. In our house, a lean-to, about 12 feet wide and 60 feet in length, against a north wall, there is ample ventilation at the top; the front sashes also open, and we have what the builders call hit-and-miss cast iron ventilators in the front wall. For the last month there have been constant drying cold winds from the east, and to open even these small ventilators in the wall causes a draught of cold air through the house, than which nothing could be more injurious. I have decided to keep all the front ventilators shut as long as these cold drying winds last, and to air only by opening the top lights less or more, according to the temperature; by this means I can maintain the comparatively moist atmosphere which is most suitable for these plants. Any surface-dressing or repotting should now be seen to, so that the plants may have a steady period of growth without any further disturbance for the season. The flowers have a tendency to become spotted by damp before they decay naturally; this is caused by a very moist atmosphere and a low night temperature, and may be avoided by the top ventilators being opened a little and the hot-water pipes heated a little. Another serious cause of injury to valuable plants arises from leaving large spikes of flowers too long on even healthy plants. They take so much moisture out of the bulbs, that they show much shrinkage, from which the plants

do not recover speedily. When injury is likely to be caused by over-flowering, it is much better to cut the spikes off; they will remain long in good condition in water if placed in a cool room. In the Cattleya house or intermediate temperatures there are now scarcely any plants needing to be kept dry at the roots. Large specimens of *Cattleyas* and *Laelias* will need water about twice in ten days; small plants which have well filled their pots with roots may need water three times a week, but any pot-bound plants of *C. Trianae* which have passed out of bloom may be repotted, removing them from the flower-pots in which they have been growing as carefully as possible. If the plants were turned out in the way usually done it is possible that the best roots would be destroyed. When I see the condition in which the roots are, I chip the pots to pieces with a hammer and pick the broken pieces off carefully, in some instances leaving them attached to the roots. I use for repotting peat and Sphagnum, a good proportion being peat, but a good grower informed me the other day that he is now using a much larger proportion of Sphagnum with the peat he uses for *Cattleyas* than he used to do, and finds that the plants do better.

The *Pleiones*, if they have been repotted as advised at the right time, will now have formed a large proportion of roots and need a good supply of water; if neglected in this respect they might receive a check from which they would not soon recover. Occasional supplies of weak liquid manure may be beneficial; about once in a week will be often enough. All growing Orchids should have water freely applied, for if they have been potted as they ought to have been, it will drain freely away, and if the peat has not decayed much, water cannot possibly injure a healthy plant unless there is great neglect. The *Sobralias* require liberal supplies of water now, and they can also take a good supply of manure water if the pots are filled with roots. Healthy plants of *Sobralias* have an immense number of thick fleshy roots, and at this time of the year they are pushing freely into the soil, and they need a deal of moisture to sustain the growths, which will soon show the flower-buds developing upon them. *Cypripediums* must have a good deal of water at the roots also; they never do so well if allowed frequently to become dry at the roots. They seem to need much the same treatment as the cool Orchids as regards the supply of water required. In the warmest house the *Calanthes* are making good growth, but few roots are yet formed, and it is necessary to be careful with water until the roots have well filled the potting compost. No other plants need much care in regard to watering in the East India house. The *Cypripediums* require it freely, but those with a good deal of loam in the potting material need rather more attention, because the loam is likely to become sour and unfit for the plants if it is saturated with water and contains few roots to absorb it. On the other hand, *Angraecums*, *Phalenopsis*, *Saccolabiums* and such Orchids that are planted in a shallow depth of Sphagnum well intermixed with potsherds can scarcely be over-watered, but they may easily suffer from want of it. *Odontoglossum Roezli* is a very charming plant for producing beautiful long-lasting Orchid flowers at this season. These plants seem to do best placed near the roof glass, but on the shady side of the house. Their worst fault is their tendency to be attacked by thrips, which do much mischief if they gain a good foothold. The best plan is to dip the plants periodically, say once in six or seven weeks, in a mixture of soft soapy water, with a due allowance of tobacco liquor. If they are clean when the flowering period commences, they will remain so until it is over, when another dipping will check any attempt of the enemy to get upon the leaves. As long as the cold east winds continue, the minimum of the cool house is about 50°, rising to 60° by day; the *Cattleya* house about 60° by night, a few degrees less will not matter, 70° by day; the warmest house about 70° by night, but it may range between this and 65°, rising to 75° and 80° by day, and much higher by sun-heat.

J. DOUGLAS.

ORCHARD AND FRUIT GARDEN.

BUNCHES OF GRAPES FOR ALL PURPOSES.

As far as the earlier crops are concerned, the probability is that the selection of bunches has already been made, but by far the greatest majority of Vines are not yet relieved of their superfluous clusters. In very many instances there is not much choice in the matter of selection, the bunches throughout resembling each other nearly or quite as closely as do Peas in a pod. Especially is this the case with large old Vines that have been heavily, or it may be over-cropped annually, but when the Vines are young, full of vigour, and the wood well ripened, then there are both abundance and dissimilarity of bunches to deal with. Naturally the greatest difference is to be seen between the varieties grown, the formation and size of bunches of scarcely any two sorts being analogous. The experienced observant grower has no difficulty in determining what class of bunches best meets the requirements of the establishment he serves or the market he supplies, though not so the novice. If the latter is under the impression that there need be no judgment exercised in the matter of selecting bunches, and goes to work accordingly, he is very likely to make a mistake. Large clusters, especially if of good form and well finished, are undoubtedly the most attractive when hanging on the Vines, and the man that can point to a fairly heavy crop of these has good reason to be proud of his achievement. The question, however, is, are heavy bunches the most generally profitable as well as economical? I answer, most decidedly not. From a market grower's point of view, they are objectionable for several reasons, the most important of these being the fact that bunches weighing 2 lbs. and upwards do not sell so readily as those averaging 1 lb. or slightly more in weight. There may be exceptions to this rule, and I know of two instances where growers of high class Grapes usually get rid of their fine bunches at good prices, but there is only a limited demand for heavy bunches, and it is the medium sized to small that are most in demand. There is no room for regret that this should be the case, for the simple reason that the grower can take an equally heavy, if not heavier, weight of Grapes from his Vines, and he also finds that neat bunches are the most readily packed as well as sold. Large clusters, again, are the least economical as far as private growers are concerned. Grapes are never so tempting in appearance after they have once been dished up and done duty, and I have frequently observed that it is the great loose clusters that suffer the most from handling. There are times when a small bunch only is required at one time, and if a large dish is required, what can be easier than to form this with three or more medium-sized to small bunches. Another great point in favour of neat bunches is the certainty that these invariably travel better than their looser, heavier rivals. Then as regards late Grapes, it is indisputable that the small freely-thinned bunches of Lady Downe's, Alicante, Mrs. Pince, Gros Colman, Muscat of Alexandria, Mrs. Pearson, and Golden Queen keep better than large clusters, especially when it comes to bottling and storing in a room. All the while the larger bunches are shouldered up, they, provided the thinning was done in no half-hearted manner, keep well, but cut the ties or let the berries press against each other and

what will happen? An early decay will assuredly follow.

Exhibitions are largely responsible for the growth or rather retention of innumerable large bunches of Grapes, the exhibitor knowing full well that the class of Grapes that finds most favour in the markets is simply nowhere on the tables in a show tent. Not that great size alone is sufficient to win prizes, for unless bunches are fairly large, the berries also being of the first size and well finished, they stand but a poor chance of being noticed if the competition is at all keen. More than ordinary judgment has to be exercised in the selection of bunches most suitable for exhibition. I very frequently pass over the bunch that shows nearest to the main rod or cane in favour of the second, or what is often the middle one. The former is frequently much-branched, and if retained exactly as it is would develop into a great ugly, loose cluster. Such neither looks well on the boards when first cut nor travels at all satisfactorily. Sometimes the case can best be met by cutting away the loose or long shoulders, and, it may be, also by shortening some of the latter, but if the second bunch of the lateral is large enough, the other should be unhesitatingly cut away. Madresfield Court, Gros Colman, and Lady Downe's are very apt to form one long shoulder, this sometimes being nearly the length of the bunch proper. Supposing the latter is of good size or such as would promise to attain a weight of 2 lbs. and upwards, then I am in favour of early cutting away the shoulder. Bunches of Gros Maroc, Alicante, Alnwick Seedling, Muscat of Alexandria, and, in a lesser degree, Foster's Seedling are frequently improved in appearance and the weight not greatly affected by the timely removal of one or more straggling shoulders, and any branching points ought also to be trimmed into shape, reducing them to a single stem if possible.

The Muscat of Alexandria is nearly always wonderfully prolific, producing far more bunches than are required, some of them having framework enough to reach to a length of 12 inches. Now it is only the very strongest Vines that are capable of properly supporting extra fine bunches, and it is a grievous error made often to leave so many long "shows" on comparatively weak Vines. Better by far cut away the long straggling bunches and select the medium-sized to small ones, which are more likely to be well furnished with properly set berries. Some of the finest Muscats to be annually seen in a vinery hereabouts are treated very much as I have just advised, the scissors being freely used in reducing the breadth of the shoulders, so as to have compact serviceable bunches and extra large berries. Other shy-setting Grapes should also be denuded of any large loose bunches that show, depending more upon the medium-sized to small bunches to set freely and attain a considerable size. If sensational bunches are desired, then by all means select the largest on a Vine that show, but do not save too many of them. Those of a loose habit of bunch, notably Gros Guillaume, Buckland Sweetwater, and Trebbiano, should be very sparingly thinned, only the worst set berries being cut out as they are seen, while in order to make the most of the bunch and to give the berries room to swell, shouldering must be very closely practised.

W. IGGULDEN.

Apple Worcester Pearmain.—Surely this Apple is one of those that are not worth growing. It is showy in colour, but not at all a good flavoured kind, and not equal to the Blenheim,

Wellington, or the really old English Apples. Why should we waste space in growing an Apple of which the quality on "E's" own admission (p. 311) is not first-class? If we want high-coloured fruit, surely many of the cider Apples are as "high" as one could wish. E. L.

Mildew on Vines.—W. Iggulden, in writing on "Mildew on Vines" in THE GARDEN of April 8, says, "There must be germs at the outset, and the question is, do these lurk in the house or are they carried about by winds? There is no such thing as originating the disease either by faulty root culture or bad top culture." This is quite true, for if no spores of the mildew fungus were in a vinery nor could gain access to it, the Vines would not be attacked. But this happy state of things does not exist, and the spores of mildew and many other things seem to be constantly in the air, only waiting for a favourable opportunity to start into growth. This favourable opportunity is seldom afforded if the plants are in a thoroughly healthy condition, but if they are (as we say with persons) "below par" either from "faulty root treatment" or bad top culture, an attack of mildew may be originated. Too much cold air on Vines at a certain time might probably check their growth, and, like a human being who has taken a chill, be more liable to catch some disease than when in perfect health. Insufficient ventilation would also favour mildew. A very little difference in the condition of a thing will render it liable to mildew or otherwise. I had much difficulty in keeping the contents of my gum bottle from mildewing, even though I used chemicals to mix with the gum, until I was told not to mix the gum arabic in warm water, but let it dissolve in cold. I have never seen mould on my gum since.—G. S. S.

Apricots and the frost.—I fear the frost on the morning of the 19th of last month has played sad havoc with the blooms of the above. Fortunately, the bloom was dry, and most of the blossom near the wall escaped, thus showing the advantage of keeping these trees close to the wall and getting the fruit from close spurs. I saw some trees the other day that had been allowed to make long spurs and in rather a wild state shorn of every bloom; whereas if close training and pruning had been adopted the reverse would have been the case. I have always advocated root-pruning and lifting instead of severe pruning, and even at this season the benefit is apparent, as when the trees are lifted they do not make a rank growth, but a great quantity of fruiting spurs is made close to the wall. I do not like to coddle the bloom by protecting with heavy woollen materials, as I have found these do more harm than good, as often under such heavy covers the blooms drop wholesale. When Apricots can withstand 16° of frost, and from information I have received from various sources it was severer in other districts, it shows that a great amount of cold tender fruit—I mean those just formed—will stand. Some of the varieties are much later in blooming than others. The Kaisha, Hemskirk, and Shipley's are well studded with fruit, and the Moorpark being later in blooming is best of all. On the other hand, some of the kinds stated to be very hardy have scarcely a fruit. Since the 19th the fruits have made rapid progress; some of ours being of a large size have been thinned. Being on a west aspect they have escaped the cold east winds of late, and should dry weather continue, watering will be necessary, especially with trees in light soil. I mulch and water early.—G. WYTHES.

Strawberries in May.—In an article on Strawberry culture (p. 236) Mr. Beaven refers to the adverse criticism Laxton's Noble Strawberry has received from growers. Seeing its excellent qualities in the open ground, many have grown it largely for first early forcing, and in many cases have not been satisfied with the results. I should have hesitated sending this note if I had not been in the latter position. This may have been owing to various causes, such as soil, unsuitable temperatures, and faulty management. To the latter I cannot plead guilty, as I did not rely entirely on Noble till I saw how it behaved. I had an excel-

lent crop of Vicomtesse H. de Thury in the same houses, so the culture was not far wrong. As regards flavour, I differ from Mr. Beaven. It must be borne in mind, however, I am writing of ripe fruit in February or March, and when this is taken into consideration I do not advise Noble for early forcing. To get ripe Strawberries in May is not a difficult matter. I have for years advocated growing Noble for that purpose. The adverse criticism Noble has received is when it is grown to ripen very early in the year. So far I have never tasted a single fruit at that period that could be called good flavoured. Later, that is in May, grown as Mr. Beaven advises, that is cool, though the quality is not equal to that of a British Queen, there is nothing to object to as regards flavour. I admit for size and quantity, Noble in May will be all that can be desired, and is no doubt *par excellence* the market fruit, as size and colour are before flavour, but I know which would be preferred at table by those who grow for their own consumption. Many other varieties of Strawberries often omitted or condemned would be good if given the treatment advised by Mr. Beaven. Such kinds as Marguerite, Auguste Nicaise, Auguste Boisselot, and James Veitch would give heavy returns and be of good flavour. Strawberries forced say in March cannot be compared with those obtained fully two months later. When there is brilliant sunshine, feeding can be more systematically accomplished and the fruits given a much longer time to mature. —S. H. B.

THINNING APPLE BLOSSOM.

IN the case of newly-planted, or even trees established three or four years, it is a decided advantage to thin the bloom buds where the trees are heavily laden. It is not always those trees that have a superabundance of blossoms that carry the heaviest crop of fruit. Take for instance a three-year planted bush tree of any of the large fruiting kinds, such as Warner's King or Peasgood's Nonsuch; no one having regard to the quality of the Apples would think of allowing the trees to carry more than two dozen fruits, and this would be an exceptionally heavy crop for these large kinds. Trees of this size will most likely have at the present time ten times that number of bloom buds. My plan is to thin these, before they develop, to say three times the number still required. I find then I have many small fruit to take off in thinning the crop. The thinning of Apple blossoms may appear a trivial and a laborious waste of time, not justified by results, but it is surprising what a quantity of bloom buds can be rubbed off in an hour by simply giving each a sharp press with the forefinger in a downward direction. In thinning the buds I take off whole clusters in many cases, especially those situated under the branches, and in such a position that the fruit would obtain but little sunlight, and consequently would be of poor colour. I aim at leaving the best placed fruit, and by removing some of the central buds on many clusters, retaining some of those less forward, I get two strings to my bow in the matter of securing a crop of fruit, as seldom are all the blooms on the tree open at one time, and by making certain of having the blooms expanded at various times, the trees are more likely to escape wholesale destruction by one visitation of frost. I find that trees are not nearly so liable to drop their fruit wholesale in the initiatory stage of swelling when thinning the bloom has been practised. In the case of trees planted last autumn, I always remove all buds the first season, except in extreme cases of wishing to prove any particular variety, and then I only leave sufficient for the purpose. Newly-planted trees ought to be encouraged to make free growth the first year. Where trees are allowed to carry a full crop of fruit, as varieties like Lord Grosvenor, Lane's Prince Albert, and Stirling Castle will do, the growth is so weakened that it is visible in many instances for years after.

In the matter of standard-trained trees especially, I never allow them to fruit the first year. I remove all the flower-buds directly they are large enough to handle; the whole energy of the tree is thus concentrated into the growth of the branches and roots. The larger a tree becomes in the shortest possible space of time, the greater prospects are there of obtaining a full crop of fruit in years to come. I know there are many owners of trees who think they have made a poor bargain if the trees just planted do not give them a return the first season, but such persons do not reap the best reward after a series of years. Trees in their weakened state, occasioned by the check given to the roots in replanting, cannot be expected to reasonably give adequate returns both in wood and fruit; one must suffer, and it is much better for the future prospect of the tree that the fruit crop should suffer. E. M.

RETARDING PEACH BLOOM.

WHEN "Y. A. H." expressed the opinion that getting his trees early fastened to the walls does not in the least jeopardise his prospect of a good crop, he quite forgot to add that they were well protected with a good glazed coping and blinds. With such aids to culture I can quite agree with the line he takes, but in how many gardens can such protection be afforded? Had I not been very well satisfied that retarding the trees very frequently does prove of advantage, I should not recommend the practice, and I am certainly under no obligation to try a variety of experiments, the results of which, perhaps, would have no more effect on one at least of my critics than what I have already advanced has done. I can positively assert that had the Peach and Nectarine trees against open walls in the garden under my charge been in full flower one week earlier, or even four days earlier, the prospect of a good crop would have been completely marred by frost. As it was, all the early flowers on some of the trees—and the whole of the flowers on three forward trees growing in an extra warm spot—were destroyed by frosts. Very much has been made about the extra work entailed in retarding the trees and of the losses caused by laying in the branches when the buds are forward, but all this amounts to very little, and in one case was quite hypothetical. I know well what it is to be short of assistance. Then as to damaging the vegetable crops growing in front of the trees, I maintain that there ought to be no crops immediately in front of Peach trees, and am surprised that "A. D.," in the course of his visits to private gardens, has not also become impressed with the same opinion. There is nothing to prevent early vegetables or salading being grown on a ridge of soil and manure close up to the wall, but there ought to be a clear space, or say good ladder room, in front of the trees, and that for a variety of reasons. This season is altogether abnormal, and the lessons to be derived from any series of experiments would not be of any great value accordingly. One thing is very certain—the fruit prospects are not nearly so good as they were, severe frosts having done much mischief on and about April 13. W. IGGULDEN.

The lazy bearing of the Blenheim Orange Apple.—"E. M.'s" experience (page 274) is surely somewhat remarkable—little or no fruit for a dozen years. Neither is "E. M." alone, unfortunately, as he adds that a good many others find this Apple will not bear early. Fortunately, he does not repeat another charge also frequently brought against the Blenheim Orange, viz., that it only bears in alternate years, so we may assume that "E. M.'s" Blenheims have tried his patience sufficiently, though making him wait a dozen years for fruit has rewarded him so far with running him in two crops in succession with many more to follow. It would be interesting and most useful to learn if during those weary years of waiting "E. M." tried the sure and certain cures for barrenness, of root-

pruning or replanting, the latter, in fact, being the more radical form of the former. Of course, we are all aware that precocity in fruit-bearing is not a conspicuous merit of the Blenheim Orange; but twelve years' barrenness is rather too long a preparation for the serious business of the life of a Blenheim Orange Apple, and I marvel greatly that its possessor did not force its hard roots rather sharply along fertile lines. Surely, too, the soil as well as the stock in such sluggish examples must have been intent on timber-making rather than fruit growing. On fertile stocks and soils the Blenheim Orange is by no means so much of a laggard. I have handled not a few Blenheim maidens and baby trees during the winter now closing studded with fruit-buds only from one to two years from the scion. Soils and stocks do quicken the pace even of Blenheims amazingly. —D. T. F.

RELIABLE FORCING STRAWBERRIES.

STRAWBERRY plants in pots, unless rooted well, will not force readily, and, as is well known, some kinds make their growth more rapidly than others; some produce stronger runners, others split up badly when making their growth, while red spider and mildew attack a few kinds sooner than others; so that all these details have to be taken into account by the grower. The preparation and wintering of the plants require much care, and though some kinds exist in almost any kind of soil, the best results are obtained from well-grown plants, ample time to force and attention to details, such as temperatures, feeding, and moisture. In giving the list of those kinds I succeed best with I will omit the introductions of late years, as it is not fair to go into their merits till a trial has been made. My best early Strawberry, that is, for fruiting in quantity, is Vicomtesse H. de Thury. I am aware it is condemned by some, and at p. 52 of the present volume it is strongly abused; still, I have great faith in it for various reasons. It is not a miffy kind, it sets freely, one can use more heat (often a great advantage in mixed houses), and the flavour is first-rate; indeed, I do not know of any variety that can be fruited in a moist warm house and still retain its good flavour. I force 1000 plants of this variety annually and endeavour to get early fruits. These are just over at this date (April 6), having given us our early supply. Objection is also made as to smallness of the fruit, but I venture to assert there will be few small fruits if well thinned, say not more than nine to twelve fruits to each plant.

I have grown this variety for twelve years with greater success for a first early than other kinds, but I should state I have it in light loam; on heavy clay it may not succeed so well. This I have no knowledge of, but then one can so manipulate the soil for pot Strawberries as to be almost independent of the natural soil, as heavy soil can be made lighter and *vice versa*, so that I recommend this variety in spite of adverse comments, and feel sure it can be relied upon in most cases if given high culture. I would follow with La Grosse Sucrée—a grand variety. Many cultivators advise it as a first early. I prefer it to follow Vicomtesse, as with more sun-heat and longer days the colour is better and flavour excellent. With me it does not set nearly so free as Vicomtesse if forced to fruit early in the year. There is one drawback to fruits of this kind, that the dark red glossy fruit packs badly. The same remarks apply to Keens' Seedling and similar varieties. Keens' Seedling, of which I force 1000, needs but few words to recommend it, but there are bastard varieties bearing this name not worth pot room. I have a dwarf kind my predecessor forced with great success. This I value highly, as it fruits freely and occupies such little space, and is, I believe, the true variety which was raised in this neighbourhood many years ago. The fruits are all that can be desired as far as size, shape, colour and flavour are concerned. This I use as a midseason variety indoors, as it follows La Grosse Sucrée. That well-known Strawberry—President—comes next, and though

an old variety, it is one of the best. It is valuable on account of its flavour and firm flesh. It is one of the best for packing and a sure cropper. On the other hand, it has some faults, being one of the worst to mildew and having long foliage if not close to the glass. Another reliable variety to follow the last-named is Sir J. Paxton. This possesses many of the President's qualities and does well in most places. Sir C. Napier, a favourite market variety, is also a good solid fruit and a good forcer, with a brisk flavour. If size is required before flavour, use such varieties as Auguste Nicaise, a very large fruit of a dull red colour. I do not include this latter if only a limited quantity is grown, as it takes longer to finish than those named. Marguerite is also a large fruit. James Veitch is another large fruit and readily forced. To succeed those named, Laxton's Noble is a grand introduction and really good when forced in a cold frame. I have found it most useful, as it comes very fine and does grandly with little protection. Last year I grew fifty Laxton's Jubilee in pots for late forcing, having seen its good qualities in the open. I am growing it largely for our last fruit in heat, and from its appearance in the open ground, just showing strong spikes, it promises well. I consider it a valuable late fruit either for forcing or for the open ground. G. W. THES.

TREES AND SHRUBS.

THE JUNE BERRY.

(AMELANCHIER CANADENSIS.)

THIS, a flowering branch of which is here represented, is certainly one of the finest of early blooming trees, and is not nearly so well known as it deserves to be. Loudon concisely sums up the merits of the June Berry as follows:—

A very ornamental tree, from its profusion of blossoms early in April and from its rich autumnal foliage; and even the fruit is not altogether to be despised, either eaten by itself or in tarts, pies and puddings. The wood is white, and it exhibits no difference between the heart and the sap. It is longitudinally traversed by small bright red vessels, which intersect each other and run together—a physiological peculiarity which, Michaux observes, occurs also in the red Birch.

In a wild state it occurs from Hudson's Bay, south to Florida, and west to Nebraska and the Indian territory. The wood is exceedingly hard, heavy and strong. As might be expected from a tree spread over so wide a geographical area, the June Berry varies considerably in size and habit. Under favourable conditions it attains a height of 40 feet. The effect of a fine specimen in spring with its mantle of snowy white blossoms, and in autumn with the rich golden yellow of the decaying leaves, can easily be imagined. The fruits, which are of a purple colour, are collected in immense quantities on the Upper Peace River, and form quite an article of food and trade. The June Berry is perfectly hardy in this country. It is easily propagated either from seeds or by grafting on the Apple stock. At its northern limits the ground is frozen for the greater part of the year.

Besides the name of June Berry, *Amelanchier canadensis* is also known in the United States and Canada as "Shad Bush," "Service Tree," "Indian Pear," "Sugar Plum," in addition to its Indian appellation, "Suskatum."—G. N.

With the wealth of rosaceous trees and shrubs in bloom during April, it is saying no little in favour of this species that it holds its own among them. As lately as last December a coloured plate of it was issued in THE GARDEN, from which a perfect idea of the beauty of

a single branch may be obtained. When a tree 20 feet in height—or, as may occasionally be seen, 30 feet to 40 feet high—is loaded with flowering branches, its beauty may well be conceived. The species is an American representative of the European *A. vulgaris*, which, although not strictly British, may now be almost accounted as such, having been in the country very nearly 300 years. *A. canadensis* was introduced in 1746. Its flowers are disposed on short racemes, and so numerous are they, that the tree becomes an almost complete sheet of white in spring and early summer. The usefulness of the species is enhanced by the fact that when propagated by layers or cuttings it flowers from the commencement. We have now young plants from 1 foot to 2 feet high covered with blossom. It may, in-



Flowering shoot of the June Berry (*Amelanchier canadensis*).

deed, be used in groups or in a bed by itself. In the autumn it is again made attractive by the deep red of its decaying foliage.—B.

Styrax japonica.—Among the more uncommon hardy shrubs that will flower well in the greenhouse or conservatory, but at the same time will not bear hard forcing, may be mentioned this *Styrax*, which is, either treated in this way or grown in the open ground, wonderfully pretty when in flower; but, as with its ally, the Snowdrop Tree of North America (*Halesia tetraptera*), the plant does not long remain at its best, as the flowers quickly drop. Its usual habit is to form a tree-like shrub, whose branches are disposed in an almost horizontal manner, while the minor branchlets, which are of a thin wiry character, are clothed with deep green ovate leaves. The drooping bell-shaped blossoms are pure white, with a tuft of yellow stamens, and, being supported on long stalks, they are from this circumstance and

the horizontal arrangement of the branches seen to good effect. This *Styrax* is not at all a difficult subject to strike from cuttings of the young growing shoots taken during the summer months and kept close till rooted. It appears to be quite hardy in this country, and should be more often planted. A couple of years ago Mr. Falconer, in his notes from Glen Cove, spoke of it as, "When in full bloom it is the loveliest plant in our collection, but alas! it lasts only a few days in flower."—H. P.

Lilac Marie Legrange.—Where Lilacs are grown for flowering in pots it is often a consideration to have them as dwarf as possible, and the above can be recommended as a first-rate kind for the purpose. It is of a free, much-branched habit of growth, with more slender shoots than in most Lilacs, but it blooms very profusely. The flowers, of a pure white tint, are borne in large trusses. It was awarded a certificate by the Royal Horticultural Society eight years ago when shown by Messrs. Veitch, and since that time it has made considerable headway in popular favour. Despite the long list of Lilacs there are in cultivation, the old Charles X. still holds its own as one of the best of the dark-flowered varieties, the colour being good, the flower clusters large and bold, and borne in great profusion.—T.

Lilac Leon Simon.—There is now a large number of double-flowered Lilacs to be met with in different lists, but many of them resemble each other so closely, that three or four varieties are enough for general purposes. Looking over a collection recently, I noted the above as one of the best then in flower, and anyone seeking a good double Lilac would not do wrong in obtaining this. The flower clusters are long and more compact than in many of the others, while the individual blooms are large, quite double, with the petals somewhat incurving and of a pleasing lilac shade, not dull and washy in appearance, as some of them are. It was raised and distributed by M. Lemoine, and received an award of merit from the Royal Horticultural Society two years ago.—H. P.

The Fringe Tree (*Chionanthus virginicus*).—This is a very distinct shrub and one rarely seen, though it is an old introduction to our gardens, having been sent here from North America in 1796. In a fairly moist soil it forms a free-growing bush, clothed with ornamental oblong-shaped leaves, while about the end of May the blossoms are produced. The flowers are remarkable for the narrow ribbon-like petals, which hang down for some little distance, and from whence the popular name of the Fringe Tree is derived. Within the last few years

it has been, by some, employed for flowering under glass, and very pretty and uncommon-looking it is when treated in this way. Messrs. Veitch were, as far as I know, the first to show its value for such a purpose, and they have many times exhibited it in good condition as a flowering specimen in pots. For all this, it deserves to be more often planted as an outdoor shrub, for not only is it very attractive when studded with blossoms, but the flowering season extends over a longer period than in the case of many other shrubs. A second species, *Chionanthus retusus*, a native of China, is of far more recent introduction, and differs in many respects from the older form. It is a smaller and more slender-growing plant, which flowers rather earlier than the other, and is, as far as I have observed, the less ornamental of the two, though both are well worthy of a place in any garden.—T.

Forsythia intermedia.—This *Forsythia*, alluded to on page 286, was, I believe, raised and sent out by M. Lemoine, of Nancy, about five or

six years ago, and was then announced as a hybrid between the two common kinds—*F. suspensa* and *F. viridissima*. It is at present not much known, but the fact that it flowers earlier than *F. viridissima* will doubtless tend to make it popular. Being less spreading than *F. suspensa* will be a recommendation to many, for they look upon this latter as fit only for a wall or some such a position; whereas, it forms a really handsome object when planted in the open, as then the long flexible shoots are disposed on all sides in a very graceful manner, and when crowded with blossoms, a mass of this Forsythia is really charming. A group of half-a-dozen plants or so on a lawn shows it to many in quite a new light. When once established as a bush, and the tips of the arching shoots come in contact with the earth, they quickly root, and in time quite a colony is established around the parent plant.—J.

Tree Ivies.—The Tree Ivies are neat in growth, and the fact that they do not make very rapid progress should be borne in mind when planting them. A good specimen on the Grass is very ornamental, and at the same time if a group is formed of the Tree Ivies, and some Gladioli, *Hyaacinthus candicans*, or similar plants interspersed therewith, the deep green glossy foliage of the Ivies forms an admirable setting to the bulbous plants when in flower. As rockwork shrubs, too, a place can often be found for them. There is a tree form of the common Ivy and one with variegated leaves, while another has the major portion of the foliage flushed with gold. This last is often very bright and effective, while the tree form of *Hedera Ragneriana* is the best of the green-leaved kinds. This last-named Ivy is well known as a free-growing climber, whose large heart-shaped leaves of a very deep green tint form a perfect clothing to even a lofty wall. The tree variety retains the foliage characteristics of the type, but forms a rounded bush. As a London shrub these Tree Ivies vie with the universal *Aucuba*; the principal thing against their more general use for such a purpose is that they are a good deal dearer than that well-known shrub. Tree Ivies do not strike root from cuttings so readily as their climbing relatives, and consequently they are frequently grafted on to some of the stronger climbers, though such a method of increase is not to be commended, as the stock continually pushes out shoots from below the point of union, and they consequently need frequent removal. Cuttings of Tree Ivies should have the protection of a frame, and they often stand some considerable time before they root. Where evergreen shrubs in pots or tubs are needed for furnishing, these Ivies afford a pleasing change from the subjects generally employed.—H. P.

ILEX CRENATA.

THIS species, so favourably alluded to in the article on Japanese Hollies on p. 285 of THE GARDEN, is certainly a beautiful little shrub, and one that is quite hardy in this country. It is in appearance widely removed from the generally accepted idea of a Holly, and in other respects it also stands out from the others—that is in the readiness with which it can be struck from cuttings, for most Hollies can by no means be rapidly increased in this way. It is one of the neatest evergreen shrubs that we have, as it naturally assumes a dwarf, dense, twiggy habit, thickly clothed with deep green lanceolate leaves about an inch long. There is a form known as *Fortunei* or *major* in which the leaves are larger and very much broader, while the variegated variety is, when in good condition, a charming little shrub. In this the leaves are irregularly marbled with rich golden yellow, this tint in many instances occupying the major portion of the leaf, and its richness is still further intensified by the contrast with this deep green of the rest of the foliage. This Holly may be planted with the full assurance that it will not soon outgrow its allotted space, while the slow rate of growth is probably the reason that it is not more often grown, for nurserymen, as a rule, prefer a

subject that will make more rapid headway. To strike this Holly from cuttings they should be taken about the month of August, at which time the current season's shoots will be moderately firm. The entire shoots, which will be about 3 inches in length, make the best of cuttings, and if taken off clean at the base and a few bottom leaves removed, they are then ready for insertion. Where quantities of such things are struck, a frame or frames may be prepared for their reception, by having a few inches of fine sandy soil placed therein and trod firmly down, and into this the cuttings may be inserted. Where a varied lot of plants is taken in hand and only small quantities of each are required, the better way is to put the cuttings into pots, as some take longer to root than others, and as it is necessary to keep the frame close and shaded to a certain extent till the cuttings are rooted, those that strike root quickly are apt to become attenuated under the treatment necessary for those which are not so far advanced.

T.

PINES HARDY NEAR CHICAGO.

On page 201 of THE GARDEN for March 11, 1893, speaking of "Evergreen Trees in North America," you wrote, "It would be rather interesting to us to know the Evergreens that are quite hardy in that region (Chicago) where the winters are so severe." I can, from over thirty years' experience, advise you as to the facts.

The following are grown here in the greatest abundance and to perfection, viz. :—

<i>Picea alba</i>	white Spruce
„ <i>balsamea</i>	Balsam Fir
„ <i>canadensis</i>	Hemlock Spruce
„ <i>Douglasi</i>	Douglas Spruce
„ <i>excelsa</i>	Norway Spruce
„ <i>hudsonica</i>	Hudson's Bay Fir
„ <i>nigra</i>	black Spruce
„ <i>pungens</i>	Colorado blue Spruce

Picea cephalonica, *P. Nordmanniana*, *P. picta*, *P. Veitchi*, *P. polita*, and a few others are also hardy here, but are not much grown.

<i>Biota orientalis</i>	Oriental Arbor-vitæ
„ <i>aurea</i>	golden „
„ <i>nana</i>	dwarf „

and several other *Biota*s are also hardy here.

<i>Juniperus communis</i>	spreading Juniper
„ <i>procumbens</i> or <i>pro-</i>	prostrate Juniper
„ <i>sabina</i>	common Savin
„ <i>virginiana</i>	red Cedar
„ <i>Waukegan</i>	Waukegan Cedar

<i>Pinus austriaca</i>	Austrian Pine
„ <i>montana</i>	dwarf „
„ <i>resinosa</i>	red „
„ <i>Strobus</i>	white „
„ <i>sylvestris</i>	Scotch „
„ <i>rigida</i>	Pitch „
<i>Taxus canadensis</i>	Canadian Yew
<i>Thuja occidentalis</i>	American Arbor-vitæ
„ <i>aurea</i>	golden „
„ <i>Hoveyi</i>	Hovey's „
„ <i>plicata</i>	Nootka Sand Arbor-vitæ
„ <i>lobbi</i>	Lobb's Arbor-vitæ
„ <i>sibirica</i>	Siberian „
„ <i>Meehanii</i>	Meehan's golden Arbor-vitæ

Chicago, Illinois.

JOHN JONES.

SHORT NOTES—TREES AND SHRUBS.

Cytisus Andreanus grafted.—I note in THE GARDEN (page 241) "W. O." alludes to the disadvantage of this being grafted. Recently when looking over some plants of this that were growing in pots, a gardener drew my attention to several of them that were dying off below where they were grafted. It is a pity this fine plant was grown in this way, and it is to be hoped the trade will soon raise a stock of it on its own roots. DORSET.

Zenobia pulverulenta.—Some years ago there used to be a very fine bush of this growing in a

sheltered place at Bagshot Park, and I have seen it covered with bloom. The difficulty I have found is to obtain a nice free-growing plant to start with. Whenever I have done this and placed it favourably, then it grew away satisfactorily. "N. s." remarks about the abundance of common shrubs and scarcity of good flowering kinds in many gardens are only too true. J. C. F.

KITCHEN GARDEN.

LATE SUMMER PEAS.

HOWEVER much early Peas may be appreciated, good Peas during the later summer months are quite as much so. At this time, however, in the generality of gardens they are anything but satisfactory. Certainly the seeds may germinate freely, but after the first few inches of growth have been made, very often the haulm commences to turn yellow and the plants come to a standstill. Mildew, again, very often attacks them before the pods commence to fill. Some soils certainly are more adapted to the free growth of Peas than others, but even the best of soils will not support the Pea crop unless both fertility and moisture, coupled with a well-worked soil, are present. Drought is one of the greatest evils to contend against, for although the haulm is apt to grow too tall or strongly during a wet and dull time, yet with a fair amount of sunshine, Peas can hardly have too much moisture. Occasionally we hear of a disease which attacks the haulm. I had a very bad attack to contend against some years ago, and although I found out the cause, I was unable to apply a remedy until the season was past. The soil being heavy, a quantity of old leaves, which had done duty in pits in the forcing houses, was dug in, and it was only through afterwards applying a liberal dressing of lime, with a free addition of burnt garden refuse and farmyard manure, that the soil could be again made suitable for Peas. As previously hinted, there are soils not favourably adapted to the growth of Peas, but this is through one or more of the main elements needed for their growth being absent or deficient. Happily, these are within easy reach, as they may be purchased comparatively cheaply in one form or another. We all know that farmyard manure is good for all crops, containing, as it does, the most of the elements needed for plant growth; but it is only in comparatively few gardens that it can be had, the majority of gardeners having to put up with very poor stuff indeed. It is in such cases as these that those elements above mentioned should be relied upon to assist the crops. It is not advisable to use them by themselves, but in conjunction with the manure which is available, as in a dry time this attracts moisture and holds it in suspension, besides adding humus.

A well-worked soil is of the greatest importance. Many people are particular that water should be applied upon the first spell of dry weather, but appear to treat with utter contempt the proper working of the soil. On light or gravelly soils it will be found beneficial to prepare trenches. Although the Pea is a voracious feeder, yet the roots do not travel far in search of support. On our heavy, cold soil I do not find trenches so necessary, but the whole site is well worked over and manured, the soil at the time of earthing being well moulded up on each side of the row, and so forming what I may term a surface trench. Trenches are also of benefit where the rows are isolated. Although these late summer Peas are advised to be sown in trenches where needed, yet it must not be inferred by this that these must be deep down,

with the base of the haulm 5 inches or 6 inches below the level. The trenches should be taken out 15 inches wide and about the same in depth. The manure and burned refuse should be placed at the bottom, and over this quite 3 inches of the best of the soil that has been taken out. Over the seeds when sown another 2 inches of soil may be placed, thus bringing up the trench to within about an inch of the surface. It is also essential that the seed be sown thinly. Slugs are sometimes very destructive, but a dusting of soot will ward them off. The worst depredators to contend against in wooded districts are birds. Small birds, as sparrows, may be kept off by stretching two or three strands of black thread directly over the rows, that is, if Pea guards are not available. Our greatest enemy is the common wood pigeon. After being carefully and early staked, it will depend upon the weather whether the Peas will keep healthy and produce a crop without having recourse to watering or mulching. In a dull and wet season mulching would tend to keep warmth from the roots. A. YOUNG.

Abberley Hall.

HARDINESS OF BROCCOLI.

THE question of hardiness in this important winter and spring crop has been dealt with by both Mr. Wythes and Mr. Molyneux recently, but the subject is of sufficient interest for further remarks, and at the same time one still open for discussion by other correspondents with benefit to readers and cultivators in general. Mr. Molyneux certainly has an enviable privilege in the site at his command for growing Broccoli, namely, in a field, where, it is commonly admitted, it grows or attains greater hardiness by reason of its being exposed instead of tenderly protected by lofty walls and other means usually found in kitchen gardens. In my case Broccoli has suffered considerably from the effects of the severe frosts. On several occasions our thermometer indicated 20° of frost, and on a few mornings lower readings than this were noted. Some varieties were killed outright, notably Snow's, Sutton's Vanguard, and Standwell. A few of Sutton's Bouquet are left, and still fewer of Winter Mammoth. These were all growing in the open quarters, and appear to have been planted early in their permanent positions. Late Queen, looked upon as one of the hardest, and which it undoubtedly is, has suffered badly, quite 75 per cent. being dead. One border filled with Veitch's Model, another good hardy sort, has fared similarly, although the plants had the appearance, judging from their stocky growth and hard stems, of being quite frost-proof. In the course of some alterations being made, a portion of this plantation was taken up and laid in on an east border with their heads to the north, and of the few dozens so treated, not more than half a dozen succumbed to the frost, which, in the case of garden-grown plants proves the value of lifting or layering as a means of protection.

Absence of snow contributed very much no doubt to the heavy losses experienced, there being nothing at the time of the severest frosts to shelter the plants in the slightest, and it is my intention in the future, time and convenience permitting, to lay Broccoli plants with their heads inclining to the north before very severe weather sets in. Broccoli makes such a valuable change to other winter vegetables, that its culture cannot be given up even though it proves so unreliable and uncertain, but there would be some gain by planting fewer and devoting some time and labour to protecting them by lifting or layering. Midwinter sorts like Snow's or Mammoth are a most uncertain crop if left in the open ground to mature, but lifted and placed under cover they would prove invaluable at that season as a change to Seakale, Brussels Sprouts, Savoy, and winter greens.

Mr. Molyneux has no doubt excellent reasons for supposing that many losses are attributable to late sowing, but his willingness to choose the alternative of a later date rather than to spoil the plants by allowing them to stand in the seed bed for an indefinite period will be fully recognised. It would be impracticable for everyone to get his plants put out in their permanent quarters without being spoilt by standing thickly together in the seed bed, especially in gardens restricted in size where the most of the space has to be made good use of, Broccoli invariably having to await the clearance of some previous crop. Sown on March 20 I am sure would result in weakly specimens for planting at dates convenient to many growers.

I would like to inquire of Mr. Molyneux, if he would allow me to do so, whether from sowings made not later than March 20 he can command an early, intermediate, and late supply. My experience of Snow's Broccoli is that when sown early it proves entirely useless in winter for cutting, and Veitch's Autumn Protecting for late autumn and early winter use is obtained by most growers by later sowing than that advised. Perhaps Mr. Molyneux has no demand for very late Broccoli, relying perhaps on early Cauliflowers in preference for dates when Late Queen may be had, namely, the end of May and beginning of June.

The pricking out of seedlings into nursery beds involves much time and labour, but there are circumstances that sometimes demand even this exertion without choice. Where a large supply of vegetables, including Potatoes, has to be furnished from a small garden, Broccoli often has to be planted on ground previously cropped with midseason Potatoes, and if the plants are put out between these, they are liable to be spoilt almost completely by the strong-growing haulm. In such cases, better results could be achieved by pricking out the Broccoli plants on a piece of spare ground and awaiting the lifting and clearance of the Potato crop, when by the aid of a spade large plants could be put out, that with the temporary check given by removal would render them in a great measure frost-resisting. This is the plan I was compelled to adopt in my first charge, and although very severe weather had to be reckoned with, I had a better succession and a larger supply than I can furnish at the present time from a much larger garden. I fully agree with Mr. Molyneux as to the excellence of Leamington Broccoli. It is a good hardy sort and the heads are extremely white, a point of much value in this vegetable.—W. STRUGNELL, *Road Ashton Gardens, Wilts.*

— In my note on the above, "E. M." supplements my remarks as to varieties and does not advise heeling over or late sowing, as practised by me. With regard to heeling or laying the stems, I am aware it is an old-fashioned plan; but, so far, I have had no reason to deviate therefrom, as from experience I have found it the safest, and when not followed, I have suffered total loss. Field culture, as practised by "E. M.," cannot be compared with garden culture. For this reason, the crop grows more hardily and is not in such rich soil as in the case of garden ground continually cropped, so that lifting to check soft growth is not so necessary; indeed, I consider any gardener fortunate who can utilise a field for the culture of such vegetables. As to early sowing, "E. M." states this year he sowed on March 20, and mentions this date would be two months too early for me. I advised in certain cases the first or second week in May; of course, my note referred to the crop grown in a garden. In "E. M.'s" heavy land the date he names may be more suitable, but even then I should have thought a month later quite time enough if the seed is sown thinly and kept moist; but, as explained by him, he does not require to prick out the seedlings. Here again he is more fortunate than many of us, as we are often at our wits' end to find suitable ground, the latter being occupied at the time the plants are ready to transplant into their permanent quarters. I have often seen serious loss by early sowing; whereas, by sowing at two or three dates there is better material to plant and less check, therefore a quicker growth and better matured. Much depends upon

the soil and resources of the cultivator. I do not want large heads; the plants are, therefore, grown for a special purpose and with limited space are more suitable. I find the medium-sized plants with a short leg resist frost better than large plants not protected by foliage. I like those kinds which give small or medium-sized heads and occupy little space. Our land being very light, early sowing is not required, as the plants make a rapid growth. I should add I do not dig the ground, but plant on as hard land as possible after the previous crop is cleared. With regard to varieties, I fight shy of many. For twelve years I have grown Cattell's Eclipse and find it one of the best. Of late years I have added Model, a splendid acquisition to our list of hardy late kinds. I am now cutting Cattell's; this will be followed by Model. I have grown Leamington, as advised by "E. M.," but it was not so hardy as I should like. I have also tried most of the varieties sent out, but prefer to keep to a few that succeed with me.—G. WYTHES.

— The three past winters must have thoroughly tested the hardiness of Broccoli, particularly in wet, low-lying districts, and much has been written in this and other journals from most parts of the country as to the best kinds for resisting the frost, time of sowing the seed, and the different modes of protecting the plants, &c. I grew a large batch last year, including most of the best known kinds, the whole of which I had layered the second week in November, and I am glad to say that about half of Leamington, Sutton's Late Queen, and Model escaped the severe frost; all the other kinds fared much worse, very few of them being alive. I may mention the whole of our land is very wet and cold, resting on a bed of London clay, and all kinds of winter vegetables are difficult to keep. The year previous I neglected layering the Broccoli and not a single plant escaped. I am fully convinced that the above plan, though an old one, is the best. I have long since come to the conclusion that placing litter round the stems is worse than useless. I sow the seed about the middle of the present month, and plant from the seed bed a good distance apart as soon as ready. I am also certain the more the plants are matured the better chance they stand of coming safely through the winter. In many cases gardeners have not the ground at their disposal, and either have to wait till some of the earlier crops are off or put in their plants among Potatoes or Peas, &c., when they have not a fair chance of being prepared to withstand a severe winter. In all cases I would strongly advise layering the whole early in November, and the extra trouble taken then will be amply repaid in the spring.—EDWIN BECKETT, *Aldenham House, Elstree.*

Cucumbers.—When at a meeting of the fruit committee of the Royal Horticultural Society held on March 28, Mr. Lockie, of Windsor, exhibited a beautiful brace of his Perfection Cucumber raised from seed sown January 18, it was thought that this was, for the time of year, very much like growing Cucumbers by express. A few days since, when at Mr. Mortimer's nursery, Farnham, I was shown some Cucumber plants the seed of which had been sown on a Friday, germinated and produced rough leaves and were planted out on a bed in a house the following Friday—very quick work indeed, and showing that under newer methods of culture Cucumbers are expected to do their work very quickly. Thus at the same place, from seed sown at Christmas, were scores of fine plants some 4 feet in height that were carrying large numbers of long fruits, all more or less in seed, so that Mr. Mortimer is in no way behind Mr. Lockie in express cultivation. Here it is the rule to obtain two crops of seed Cucumbers in the year. Those first planted out in February carry crops and ripen them in May. The second lot is ready to go out directly the houses have been cleaned and the beds renovated with fresh soil, and the crop of fruit is secured in the autumn. The latter is the heavier, because the flowers are more readily fertilised. The beds do not exceed 20 inches across and range from 6 inches to 8 inches in depth.

They are made on soil banks, for the alleys, which are low, have a 6-inch concrete wall on either side sustaining the soil. This, on the surface, is hollowed out in the form of a rounded trough, and a 4-inch pipe is laid along the centre for the securing of bottom-heat. As the soil is placed in these troughs, the rougher portions are laid round the pipe, and nowhere does the depth exceed 8 inches. It is only very moderately rounded on the surface. The plants are put out at 18 inches apart in a row and strictly limited to two branches only; all others are hard pinched. The product is found in splendid fruits; none can be finer, handsomer or deeper coloured, none can have larger foliage. Those who favour large foliage for Vines would be pleased to see the splendid leaves the Cucumber plants at Farnham carry, almost rivalling Rhubarb leaves in dimensions. Naturally, it would be thought that pipes so near to the soil would be harmful to the roots; but, curiously enough, the roots do not get within a couple of inches of the pipes, preferring to avoid them, whilst evidently revelling in the warm soil they create. Gumming is here unknown, because the roots are always warm and under control. They can be both easily watered and fed, which latter is done by using liquid manure.—A. D.

FORCED VEGETABLE MARROWS.

SOME three or four tiny fruits of Vegetable Marrows, presented as evidence of the value of any one variety for forcing, are hardly satisfactory; still less is it so when of the fruits there are two distinct varieties, one of which, and not the worse, is the old Long White. To have Marrows fit for table in April is undoubtedly very early, and can only be obtained by forcing. Even when obtained, however, it is doubtful whether the product is worth the trouble taken, except when these fruits are urgently desired and can be grown under very simple and favourable conditions. So far very few persons, and especially gardeners, seem to have taken any trouble to force Marrows or to have thought it worth while to do so. Any attempt in that direction if it is to have any effect or influence must of necessity be not only a successful one, showing very tangible and profitable results, but there must also be some evidence afforded that there are varieties specially fitted for forcing that are under such conditions prolific and precocious. Obviously in houses Marrows should be treated very much as Cucumbers are, the root area being considerably limited either in pots or beds, the growths must be hard pinched, and artificial fertilisation must be adopted. For such purposes, failing any other known varieties, it would seem as if such short, free-fruited sorts as Pen-y-byd, Hibberd's Prolific, or the bushy growing Custard Marrow were the best. The chief effort so far made in forcing Marrows is seen in some of our market establishments, though not in many, and where an ample supply of stable manure is at hand. In such case seed is sown in January in heat and stout plants raised. In March, hotbeds are made up and covered with broad frames. Span frames are best for the purpose. Into these is put a sufficient body of soil in mounds, and the plants are then turned out into the frames; indeed the process of cultivation is on very much the same lines as is given to hot-bed Cucumbers. The flowers have to be fertilised, as unless this be done under glass the fruit will not set. In this way very early fruits are obtained, and fair prices are also secured. Later the frames are blocked up above the beds on bricks, and the stronger shoots run out below, and when all danger from frost is past then the frames are bodily removed, and the plants continue to fruit for some time. It would hardly pay any private gardener to grow Marrows in that way, unless he had plenty of frames, manure, and room; and indeed where a house or portion of one could not be specially devoted to Marrows, it might be possible to have a few plants growing singly in large pots and trained along the front of a Peach house or vinery, up spaces not otherwise occupied, or up columns or

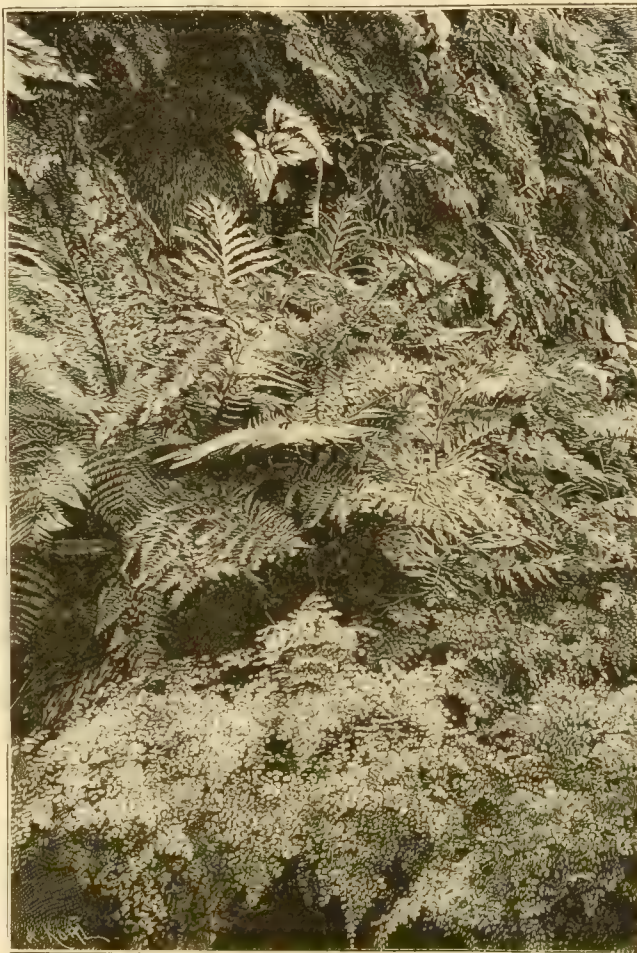
supports, and in that way utilising what was hitherto hardly other than waste space, securing some fruits that might through April and May prove to be very acceptable, especially as they would come at a time of the year when other vegetables are scarce. With the Marrows exhibited as samples of forced fruits the other day at the Drill Hall, no information was afforded as to how grown, what temperature given, and whether the plants were prolific under such conditions or not. Should anyone desire to present a variety that is believed to be of special fitness for forcing, at least a dozen fruits all of good size and specially of one sort should be shown. The presentation of fruits of the old market long white in this case leads to the inference that, as being by no means one of the most prolific,

crop of Marrows. After the crop has been produced, the soil is in good condition for mixing with other ingredients for the cultivation of Violets.—E. M.

FERNS.

FERN-CLAD WALLS.

To no better purpose can Ferns and Mosses be put than clothing the naked back walls of ferneries, plant stoves, intermediate houses, and conservatories. Not only is a well-furnished back wall very ornamental, but it is also very profitable, a never-ending supply of well-matured Fern fronds being obtained from such sources in several gardens that I could name. A better example of what can be done in this direction could not, however, be found than at Canford Manor, Wimborne, Dorset. This wall, a view of a small portion of which is given in the accompanying illustration, is 40 feet long, 18 feet high, and supports a lean-to house devoted to Ferns. Three years ago the Ferns were fixed against this wall by means, if I remember rightly, of sections of diamond mesh wire netting and staples, and when I saw the wall last summer not a blank space was to be seen. Only a thin layer of soil, principally or wholly composed of fibrous loam, was enclosed, and in this small pieces of *Adiantum cuneatum* were planted 3 feet apart each way, with plants of *Nephrolepis exaltata* and *Begonia Rex* interspersed among them. The *Adiantum* would appear to be quite at home in this position, the plants increasing rapidly in size, the fronds being very numerous, large and better seasoned than is the case with those cut from less exposed pot plants growing in the same house. One of the greatest difficulties to be contended with in the wall culture of Ferns lies



Ferns-clad wall at Canford Manor, Wimborne. Engraved for THE GARDEN from a photograph by Mr. Hazel, Bournemouth.

something more meritorious than that or one like it is needed. The award made to the capital collection of hardy and forced vegetables from Syon at the same meeting shows that the fruit committee will always recognise merit.

A. D.

Vegetable Marrows on leaf heaps.—I grow the Vegetable Marrows on the top of a heap of freshly-gathered leaves, which are stacked in a corner having a southern aspect and bounded on the north and east by a wall a few feet higher than the leaves. On the top of the leaves I make up a bed with the trimmings from the road-side. A moderate warmth is generated by the leaves, rendering the soil genial for the roots of the Marrows. The plants are now in 4½-inch pots. They will shortly be planted out under handlights and have protection nightly, thus giving us an early

in the fact that they must be kept well supplied with water, and this in many instances cannot be readily accomplished without washing the soil away from the roots. Mr. T. H. Crasp, the gardener at Canford Manor, has no such difficulty, for the simple reason that he has had a freely perforated lead pipe taken along the top of the wall, and this being connected with a high-pressure water supply, all that is necessary is to turn a tap and let the water trickle down through the soil by the hour if need be.

Whether or not this plan of moistening Fern-clad walls originated with Mr. Crasp I am unable to say, but there is no mistaking the fact of its being a good one, and well worthy of being imitated by all who have already clothed a wall with Ferns or contemplate doing so. I.

SOCIETIES AND EXHIBITIONS.

GHENT EXHIBITION.

APRIL 16.

THE show of the Royal Botanic Society of Ghent was opened on Sunday last, and it is as fine as that held five years ago. We get many beautiful effects in these quinquennial displays, as a great number of classes are for specimens and several plants of one flower. The Anthuriums are of fine colour, but the Azaleas are richer, though the formal way of training them is objectionable. Orchids, though shown well, are not so fine as at the Temple show of the Royal Horticultural Society.

The new plants commence the catalogue, and the first class is for six examples, Messrs. Sander and Co., St. Albans, being before M. Linden, of Brussels, who is second. Many good things were shown, and those of the English firm were *Dracæna Sanderiana*, rich green leaves, margined with a light yellowish colour; *D. Godseffiana*, green, blotched with a creamy yellow colour, the leaves ovate in shape; *Ludovia crenifolia*, the leaves long, deep green, ribbed, and very robust; *Alocasia Watsoni*, deep green, under side chocolate colour; and others. They were nicely set up, and plenty of space allowed for each plant. In the collection from Brussels the best plant was *Eulophia Elizabethæ*, the flowers being waxy white and the lip of a yellow colour. Each exhibitor also had a collection of new plants not for competition. M. van Tubergen, of Haarlem, is first for a new hardy plant. He presents *Iris Lorteti*, a very delicately coloured flower, described recently in *THE GARDEN*. Another plant that looks as if it would be grown in the future is *Nicotiana collosa variegata*, from M. Sallier, Neuilly, France. We do not care for variegated things as a rule, but this is distinct, the leaves broad, not long, and pleasingly variegated with creamy yellow and green. *Richardia aurata*, shown as a new plant by M. Krelage, is not finer than the yellow-spined *Callas*, of which C. Pentlandi is a good example. Its spathes are not rich enough, but the leaves are of good colour, and distinguished by a silvery variegation. The new plants, except those in the first class, are not of great consequence.

Taking the various subjects in the order of the schedule, the Orchids next claim attention, and *Cattleya Mendeli* and *C. Lawrenceana* are exhibited in variety. The largest class is for one hundred plants, and many fine things were exhibited by M. Jules Hye, who is awarded the gold medal offered by His Majesty the King of the Belgians. There was not a great competition in the classes for Orchids, and the chief exhibitors were M. Warocque, M. Fl. Pauwels, Antwerp, M. le Dr. Capart, Brussels, M. L. de Smet Duvivier, MM. Vervaeke and Co., and M. van Imschoot, all of Mont St. Amand, M. Pynaert van Geert and M. G. Vincke-Dujardin, Bruges. A few of the best species and varieties shown included *Odontoglossums* of all the leading kinds. It is impossible to individualise without making a mere list of names. *Dendrobiums* are also good, and the distinct classes for them are of more than passing interest to orchidists. *C. Lawrenceana* is excellent, and one variety very rich in colour. The classes for single specimen plants are not well filled, but good plants are not scarce. The finest example of a *Cattleya* is that shown by M. Warocque, and upwards of twelve classes are allotted to single examples. An exhibit of much merit is the collection of hardy Orchids from M. van Tubergen, and the best are *Cypripedium Calceolus*, well flowered, *Orchis Robertiana*, and *Ophrys aranifera* (the Spider Orchis).

Bromeliads, which are shown largely, are always seen to better advantage in Continental gardens than in England. The chief exhibitors are M. Poe'man-Maerhaut, Mont St. Amand, M. R. Grenier, also of this place, M. Jacob Makoy and Co., Liege, and M. Duval, Versailles. It is to hybrid *Vriesias* that the Veitch Memorial medal and £5 are bestowed, the exhibitor being M. E. Eeckhaute, St. Denis-Westrem. *Pandanus Veitchii* is

exhibited well by M. Spae-Vandermeulen, and it is this grouping of the plants, setting separate classes apart for each species or variety, that gives beauty and rich colouring to the show. Pandanads are not of great interest to English horticulturists, but many very beautiful kinds are amongst them, well deserving of more attention than they get here in England.

The Ferns make a very grateful relief to the large collections of flowering plants, and successful exhibitors are MM. de Smet frères, who come first in the big class for eight tree specimens, the first prize being given by the Council of the Ghent Society. The kinds shown by this firm are *Cyathea medullaris*, *C. dealbata*, *Cibotium princeps*, *C. Schiedei*, *C. Baptisti*, *Balanium antarcticum*, *Alsophila Williamsi*, and *A. Cooperi*. MM. de Smet frères are first for four kinds, and show a good example of *Todea africana*. M. de Ghellinck de Walle, Ghent, shows Ferns satisfactorily, and amongst the thirty prize plants from MM. Duriez frères, Wondelghen, *Pteris tremula Smithiana* is well shown. It is a Fern that when it was first sent out promised to become, as it is now, a well-known kind. A very good collection of *Todeas* and such plants is exhibited by M. Louis de Smet, *Trichomanes Leuschnatianum*, *Hymenophyllum cruentum*, *Todea plumosa*, and *Trichomanes radicans* being the best; and in the collection of *Adiantums* (twenty specimens) from MM. Duriez frères, *A. Farleyense*, *A. Pacotti*, and *A. Birkenheadi* are well grown. Very fine are the specimens of *A. Farleyense* from MM. Vermeersch and De Buerdemaecher Evergen. The above do not by any means exhaust the Fern classes.

Azaleas, Rhododendrons and Camellias are exhibited for the most part in the annexe, and are very fine, but, as mentioned before, formal, except the Camellias. The largest classes are for the ordinary Indian Azaleas, and the plants of M. d'Haene, Gentbrugge, are splendid. It is very creditable to have such a large collection in such fine condition. Mlle. Marie Rosseel, *Rosea picta*, Heron, Model, Versicolor, Charles Pynaert, Duc de Nassau, *La Flambeau*, a variety of very rich crimson colour; *Rosa Bonheur*, Mammoth, the now well-known *Deutsche Perle*, Jean Vervaeke, *Souvenir d'Arthur Veitch*, *A. Borsig*, Jules Verne, *François Devoy*, *Roi d'Hollande* (shown by several exhibitors), well grown and trained, *Sigismund Rucker*, *Comtesse de Flandre*, Bernhard Andreas, and Raphael are noteworthy. M. B. Maertens, Liethem St. Martin, exhibits the finest sixty specimens, similar kinds occurring as in other classes, amongst them also the foregoing varieties. It was gratifying to see that *A. mollis* was well shown by the several exhibitors, the principal being M. Pynaert van Geert, M. Vuylsteke, Ghent, M. Van der Cruyssen, Gentbrugge, and M. A. Koster, Bokoop. One may get in this fine Azalea and its hybrids a wealth of colouring, and M. Pynaert van Geert grows the plants well. The hybrids of M. Koster are very beautiful, the flowers so bright in colour and large. A group of such kinds is unrivalled for brilliancy and beauty. The Rhododendrons are less interesting. We do not greatly care for these in pots, as they are to a certain extent dull in colour, not showing the same brilliancy as the Azaleas. The forty specimens from M. Cocquyt Fortie, Ghent, are good examples of pot culture, and the varieties are well known to Rhododendron lovers. The Azaleas shown by M. Vervaeke-Vervaeke, Ledeborg, are throughout very satisfactory, and also the Camellias from M. L. Eeckhaute, St. Denis-Westrem, who is first for thirty plants. They are not so formally grown as we have seen them on previous occasions at Ghent, and the varieties include all the best in cultivation, yet two of the most beautiful are the old *Alba plena* and the characteristic *Donckelaari*. Camellias grown well are very ornamental, the deep green of the foliage setting off the flowers of other plants.

Palms are always well done at Ghent, and the present occasion is no exception to the rule. The specimens are very large, and, arranged round the sides of the annexe and great hall, form an imposing background. The first prize for twenty-five plants

offered by the Comte de Kerchove is awarded to the Ghent Botanic Society. *Phœnicophorium seychellarum*, *Areca Baueri*, *Kentia Belmoreana* and *Licuala grandis* are very grand, and the same kinds are repeated practically in other classes. M. de Ghellinck de Walle, M. Coppenolle, M. Em. de Cock, who is awarded premier honours in the class for twenty Palms, M. Pynaert van Geert and M. Vervaeke-Vervaeke are the principal exhibitors. F. J. Spae, Ghent, showed the best specimen of *Areca Baueri*, and is given the first prize, and all the more important decorative Palms have separate classes. The effect of the giant specimens towering up behind the groups of other things is striking in the extreme.

The Ghent quinquennial exhibition is to be remembered for the very fine Anthuriums to be seen there, and the leading group from M. Warocque could be scarcely surpassed, we should think, for size of plants and the large display of the glowing crimson spathes. *A. Scherzerianum* is the principal kind and is more effective than *A. Andreanum*, which is also exhibited in large numbers. M. Warocque is first in both classes for *A. Scherzerianum*, and the Ghent Horticultural Society is first for twenty examples of *A. Andreanum*. *Dracenas*, *Crotons*, *Marantas*, &c., are good, but not so fine as one would expect to find here. M. Dallière, Ledeborg, M. L. de Smet Duvivier, and Mr. J. E. Story are the most successful exhibitors; nor must we omit to mention the specimens of *Dracæna Lindenii* from M. F. Buysse, Meirelbeke.

In other classes the *Clivias* are very fine, the specimens being well grown and the colours of the flowers bright. The group of twenty plants from M. J. Moentjens shows how well this grower understands the culture of this now favourite plant. M. L. van den Bos and M. B. Fortie, both of Ghent, also exhibit this plant well. The eye is arrested in the show by patches of colour. *Genista Andreana* from M. S. Bracke is bright in effect, and gay colour is got from the yellows flowered *Cytisus racemosus*. Continental growers are highly successful with *Choisya ternata*, and M. van Driessche-Leys, Ghent, is first for twelve specimens of this fragrant flower. *Boronia heterophylla* from M. Louis de Smet, Ledeborg, is excellent, the plants, twenty in number, being in full bloom. They get the highest award.

A few classes are for Roses, and the best collection, comprising forty plants, is from M. Ch. Vander-Haeghen, the variety *Maréchal Niel* being very good. But they are too crowded together to please, and this remark applies to many other things.

Lilacs, *Kalmias*, and Lilies of the Valley are all exhibited to advantage. The *Amaryllis* is also fairly well exhibited, but the group of this flower from Messrs. J. Veitch and Sons, Chelsea, is by far the best. The qualities of the *Amaryllis* at Chelsea are too well known to render further allusion to the plants necessary. Messrs. Cutbush and Sons show hard-wooded plants in great variety. *Primulas*, *Spiræa palmata*, *Cinerarias*, and hardy bulbs are also shown in large numbers. The *Hyacinths* from MM. Byvoet frères, of Overveen, in the class for 100 pots, fifty varieties, are the best, but the bulbs are far poorer than at the last Ghent show. M. Krelage, Haarlem, has fine groups of Tulips, 300 double kinds making a great display. The Darwin Tulips were also exhibited well by this firm. The conifers and also other specimen shrubs are displayed in the open air, but it is not worth while growing such things in pots. They are not very handsome, except the variegated *Euonymuses*, which are fairly well grown in specimen size. The hardy bulbs of M. van Tubergen are very attractive. This exhibitor is first for 100 pots, and also for *Fritillaries*.

Flowering and fine-foliaged plants are the exhibits that deserve the most attention, but a large collection of garden implements is shown by M. Dutry-Colson, and several classes are allotted to boilers, plant houses, and hot-water apparatus. Messrs. Foster and Pearson, Notts, are first for a temperate house, and deserve well the award.

NATIONAL CHRYSANTHEMUM SOCIETY.

A MEETING of the general committee was held on Wednesday week at Anderton's Hotel, when Mr. E. C. Jukes presided. After the confirmation of the minutes of the previous meeting, the secretary read a letter from Mr. C. E. Shea declining the position both of member and chairman of the floral committee to which he was recently elected, as he objected to the canvass which had been made on his behalf. The secretary explained the circumstances in connection with the proceedings in question, upon which a very lengthy discussion ensued. He denied he was a paid official, as had been stated, and referred to several other matters which had recently been the subject of discussion. Mr. Gordon thereupon moved that the opinion of the committee be taken expressing disapproval of the secretary's action, and his motion was seconded by Mr. Long.

Most of the speakers that followed supported the motion, Mr. Rundell, Mr. Boyce, Mr. Addison, Mr. W. H. Fowler being the principal persons who took that view. Mr. Berridge and the chairman hoped the motion would be withdrawn, as the action complained of was, in their opinion, simply an error of judgment. Mr. Gordon in the interest of the society elected to abide by the decision of the committee, for he felt he would be wanting in his duty to do as the two last speakers wished. The motion was thereupon put from the chair, when fourteen members voted for it and seventeen against. Mr. Dean at once said he had no hesitation in saying he regretted the course taken, but that the motive he had was a good one.

Several nominations were made for the vacant place on the floral committee, the result being that Mr. Rowbotham was elected. The election for chairman was then proceeded with, and Mr. Gordon having declined to stand, Mr. W. H. Fowler was elected without opposition. Two vacancies on the general committee having been caused by death and retirement, Mr. H. Cannell and Mr. E. Molyneux were elected. The ballot was resorted to in both cases, Mr. Crane and Mr. Harman-Payne being appointed scrutineers. An interesting letter was read from the Victorian Horticultural Society respecting a conference on Chrysanthemums shortly about to be held in that colony. The Tonbridge Gardeners' Society was received into affiliation, and several new members elected. It was stated by the secretary that the reserve fund now amounted to the sum of £38 15s.

Royal Horticultural Society.—The next meeting on April 25, at the Drill Hall, James Street, Victoria Street, Westminster, promises to be of exceptional interest in every way. The National Auricula and Primula Society (southern section) will also hold their annual show. At 3 p.m. the visitors will have an opportunity of hearing a lecture on "Alpine Plants" by Mons. Henry Correvon, of the Jardin d'Acclimatation, Geneva. The lecture on "Chemical Questions Concerning the Soil," by Professor Cheshire, has been postponed until May 9.

The Gardeners' Orphan Fund.—A meeting of the committee took place at the Horticultural Club on the 7th inst., Mr. William Marshall presiding. The following special donations were announced: H.R.H. the Duke of York, £5 (donation); the Countess of Shrewsbury, £1 (annual subscription); Lady Gordon-Lennox, £1 1s. (annual subscription); Mr. J. Kipling, Knebworth, receipts from skating upon the lake, £7; J. T. Leadbetter, The Gardens, Tranby Croft, Hull, collecting card, 12s.; Mr. J. Willard, The Gardens, Holly Lodge, Highgate, box, £1 7s. 6d.; Messrs. H. Cannell and Sons, nurserymen, Swanley, box, £1; Mr. T. Turton, The Gardens, Maiden Erlegh, Reading, box, 16s.; and the Liverpool Horticultural Association, box, 10s. 6d. The honorary secretary reported that the date of the annual dinner had, at the request of the chairman, Baron F. de Rothschild, M.P., been postponed until April 26. It was resolved that arrangements be made for taking the national annual collection on behalf of the fund. A cheque was drawn for the sum of £186 6s., the amount of the quarterly allowances to children upon the fund.

The chairman drew attention to the coming annual dinner, and expressed a hope that the friends of the fund would be present to support the chairman on that occasion.

PUBLIC GARDENS.

Superintendent of Epping Forest.—The editor of the *City Press* informs us that Mr. Frank McKenzie, the third son of the late Major McKenzie, has been appointed to succeed his father as the superintendent of Epping Forest. The new superintendent had assisted his father for the past thirteen years, and for the last two years has held the office of assistant-superintendent.

A recreation ground for Westminster.—A movement is on foot in Westminster—with which the public generally will sympathise—to secure the setting apart of over ten acres of the Millbank prison site as a recreation ground. Part of the area is to be occupied by the Tate Art Gallery, another portion by working class dwellings, and possibly barracks; but in the interest of the thirty associated cricket and football grounds in Westminster, and of the thousands of young people in this densely-crowded part of London who are at present without a playground, it is devoutly to be desired that these ten acres may be preserved as an open space. The value of the ground is assessed at £50,000, and if need be the County Council would, it is believed, contribute one half this amount, but this should hardly be demanded. A deputation of the inhabitants of Westminster is about to lay the matter before Mr. Shaw-Lefevre, First Commissioner of Works—with success let us hope.

The weather in West Herts.—The present drought has now (Wednesday) lasted forty-six days, during which period rain has fallen on only two days, and to the total depth of less than a quarter of an inch. In an average season during the same six weeks, rain would have fallen on twenty days, and the total record would have exceeded 3 inches. In all porous and shallow soils the ground must soon become dangerously dry, more especially as plants generally are now so far advanced and full of leaf. No rain water whatever has passed through my percolation gauges since the beginning of the month. The days have been lately, as a rule, unusually warm, but during most of the nights the exposed thermometer has fallen below the freezing point, and on one night showed 17° of frost. Wednesday in the present week was the hottest day up to that time experienced this year, the temperature in shade rising to 74°. On seven days this month over ten hours of clear sunshine have been recorded. A Blenheim Orange Apple tree growing in my garden came first into blossom on Saturday last. This is exactly four weeks earlier than its average date of first flowering in the previous seven years, and more than three weeks earlier than in any of them. —E. M., *Berkhamsted*.

Grubs attacking Violets.—Herewith I send some grubs which this year have attacked a part of the stock of Violet plants. I should like to know the name, but more particularly how to exterminate the pests, for it strikes me they will ruin the whole unless checked. I have not previously noticed their ravages. —J. ROBERTS.

* * The insects attacking your plants are the grubs of the St. Mark's fly (*Bibis marci*), a very common insect, which derives its name from its usually making its appearance about April 25 (St. Mark's Day). The grubs had turned into chrysalides before they reached me, and I waited till the flies emerged before I would be quite sure what they were. They will not trouble you any more this season. They are generally supposed to live in damp earth or manure, and have not been noticed in this country as injurious to plants, but some members of this genus in America have done much damage to Grass. Another year see that any manure you may place near your Violets is

not infested with these grubs. The flies are black with darkish wings and fly badly. —G. S. S.

Basal rot in Daffodils.—May I be allowed to correct an erratum due no doubt to my indistinct writing on page 297, column 3. I appear to say that a careful examination beneath the bulb discloses new roots, and in the next sentence that if the bulb is carefully dug up no root is found. The word I wrote was not carefully, but casually. —C. W. Don.

I think that I can give some evidence confirmatory of Mr. Wolley Dod's opinion as to frost being the primary cause of this. My experience is with Emperor and Empress Daffodils, which I find have not the immunity from basal rot which he claims for them. In two out of the last three years I have lost from basal rot the greater part of those grown on the window-sills of my London house in a very exposed situation facing east; whereas I have never lost one on the western and sheltered side, the average difference of temperature between the two situations in times of prevalence of east and north-east winds and frost being about 3°. —G. R. R., *London, S.W.*

Names of plants.—*South Yorks.*—1 and 2, next week; 3, *Amelanchier canadensis*; 4, *Berberis stenophylla*; 5, *Berberis Darwinii*; 6, *Mahonia* (*Berberis*) *Aquifolium*. —*G. H. B.*—*Odontoglossum Rossi majus*, ordinary form. —*T. G. H.*—1, *Odontoglossum crispum*; 2, *Oncidium sarcodes*; 3, *Dendrobium Pierardi*, large form; 4, *Broughtonia sanguinea*. —*L. W. G.*—1, *Cattleya Schroederae*; 2, *Cypripedium leucorrhodum*; 3, *Cattleya intermedia*. —*J. Hants.*—It appears to be a very good form of *Clivia miniata*, but we do not recognise it; send it to some specialist. —*J. Burne.*—Your flower is a very poor variety of *Cattleya Mendelii*, unusually forward; the leaf is that of *Anthium Warcepeanum*. —*J. A. B.*—1, *Polygala oppositifolia*; 2, send again; 3, *Rhynchospermum jasmynoides*; 4, a *Lomaria*, part of fertile frond; 5, *Lomaria gibba*. —*W. A.*—One of the natural hybrid forms of *Odontoglossum Ruckermannii*. —*E. Castle.*—1, *Vanda tricolor*; 2, *Oncidium flexuosum*; 3, a form of *Maxillaria variabilis*; 4, *Odontoglossum Pescatorei*. —*Culver.*—Cannot name from leaves only. —*W. Stater.*—1, *Odontoglossum Cervantesi*; 2, *Dendrobium crataecum*; 3, too much shrivelled. —*James Davidson.*—*Dendrobium nobile*, good ordinary form; *Cypripedium venustum*, the old bad form.

BOOKS RECEIVED.

"Practical Gardening." A series of essays delivered by friends and members of the Devon and Exeter Gardeners' Mutual Improvement Association during 1891-92. H. Bisley and Son, Exeter.

"Manures: How to Make them and Use them; Celery for Profit; Onions for Profit." W. Atlee Burpee and Co., Philadelphia.

"Plant Atlas: Illustrating Seb. Kneipp's Water Cure." Coloured plates. London: H. Grevel and Co.

"The Effects of Urban Fog upon Cultivated Plants." Second report presented to the Scientific Committee of the Royal Horticultural Society. By Prof. F. W. Oliver. Reprinted from the "Journal of the R.H.S.," Vol. xvi., Part 1.

"The Garden" Monthly Parts.—This journal is published in neatly bound Monthly Parts. In this form the coloured plates are best preserved, and it is most suitable for reference previous to the issue of the half-yearly volumes. Price 1s. 6d.; post free, 1s. 9d. Complete set of volumes of THE GARDEN from its commencement to end of 1892, forty two vols., price, cloth, £30 12s.

"Gardening Illustrated" Monthly Parts.—This journal is published in neatly bound Monthly Parts, in which form it is most suitable for reference previous to the issue of the yearly volumes. Price 5d.; post free, 8d.

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"Hardy Flowers."—Giving descriptions of upwards of thirteen hundred of the most ornamental species, with directions for their arrangement, culture, &c. Fifth and Popular Edition, 1s.; post free, 1s. 3d.

"The Garden Annual" for 1893.—Contains Alphabetical Lists of all Branches of the Horticultural Trade. The Lists of Gardens and Country Seats (containing over 9000) have been very carefully and extensively revised, and are admitted to be the most complete ever published. Price 1s.; by post, 1s. 3d.

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"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—Shakespeare.

STOVE AND GREENHOUSE.

THE SHRUBBY CLERODENDRONS.

THE coloured plate in THE GARDEN of December 24, 1892, should go a long way towards reviving an interest in these truly handsome and noble-looking plants. The variety forming the subject of that plate is named *C. Kämpferi*; this, I take it, is its right name, but to all appearance it is the same as I have grown for nearly thirty years as *C. fallax*. I note, however, that the former differs only from the latter in the following respect: it has the under surface of the leaves scaly; whereas those of *C. fallax* are hairy, so that it is easy for anyone to make a mistake who does not investigate the matter closely. *Clerodendron Kämpferi* as I used to grow it is quite a distinct variety from either of the foregoing, but after an observation of the small engraving of *C. squamatum* I am inclined to think it is the same as I grew for *C. Kämpferi*. The plant which I had, always produced panicles of a more pyramidal outline, twice as wide at the base as those of *C. fallax*, and in all respects larger, the leaves being also considerably larger with longer petioles or leaf-stalks. This plant, as a rule, would only produce one very fine panicle, or at the most two smaller ones; whereas the variety I grew as *C. fallax* would have as many as fourteen panicles upon it at one time without any great trouble being taken with it to produce them. I consider that the true *C. Kämpferi* and its near relative, *C. fallax*, are much the best kinds to grow for the average run of stoves. *C. squamatum* is better suited for a large and lofty house. There must be a reason for the absence of these fine flowering subjects from our collections of stove plants now-a-days. I think this is largely to be attributed to their susceptibility to the attacks of the mealy bug. If this be so, more is the pity, for they are truly grand plants when well grown, taking up a little more room than the average run of plants when cultivated as specimens, but not so when confined to small pots. Within the fog radius there is always the risk of injury after about the middle of September, but not so in the country, where I have had them good to the end of October. The fogs cause the flowers and buds, too, to drop in large numbers, so much so as to spoil the look of the panicles. During the summer months I have grown them most successfully for conservatory decoration. From the time of the plants opening their first flowers onwards to the end of August (and even into September in the country) I have found them to stand well, making a splendid as well as a continuous display.

CULTURE.

In this there is no difficulty with the command of an ordinary stove temperature. Cuttings strike freely taken off with a heel, if possible, just about this season of the year, each one being inserted separately in a 2½-inch pot in nearly all sand. In a close, but not too moist atmosphere these will soon strike root, when another shift can be given them, with still another if needful, during the sum-

mer if it is desirable to push forward the plants for size chiefly rather than flower. If stopped, the last shift will be most decidedly advisable to encourage growth. The young plants that are not stopped will each throw up a central panicle of flowers towards the end of the summer, provided they receive no check. Flowered in this way they are very pretty objects amongst dwarf plants, being most effective and out of the usual run of plants so grown for groups arranged for effect in flower shows. As growth in the autumn ceases these young plants should be kept dry, but not excessively so through the winter, to be started afresh in February and March after repotting. As soon as the top growth and the fresh root-action are in accord, the process of stopping should be followed. Neglect of this causes the young shoots to run away spindly, one generally taking the lead, to the disparagement of the rest, causing the plants to have the character of a bad habit bestowed upon them when it is only the management that is at fault. These young plants should be stopped at the second or third joint. After this has been done twice or thrice, there will be the groundwork of a good plant with several heads of flower. Older plants should be treated in a similar manner; these never need extend beyond the second joint before they are stopped. During the process of growth the young shoots should be drawn outwards to prevent them growing up long-jointed. The older plants every spring should be reduced at the root in the same way as Fuchsias, starting them in comparatively small pots and giving at least two shifts as growth progresses, the last shift being prior to the last stopping, when in about six weeks they will be in flower. When reaching this stage manure water (not over-strong) will greatly help them. Up to the time of flowering no shading should be allowed, but when in bloom a slight shading is advisable. When the plants have made a vigorous growth they will develop branching spikes, making an even finer display. As soon as the plants are well advanced in flower, they may if needful be stood in a conservatory, where they are not exposed to too much draught or to any excess of night air. Whilst in flower, the panicles want looking over frequently to remove decaying blossoms; otherwise these will impart decay to others. By means of stopping it is readily seen that the time of flowering can be easily regulated from June to September. I have often wondered why these grand flowering plants are not more frequently grown as specimen exhibition plants. I would prefer a well-grown plant of *C. fallax* any day to a similar one of *C. Balfouri*, unless the latter be exceptionally fine and fresh. Then there is the essential advantage in any case, and that an all-important one, that the plants when dried off only require pot room to keep them through the winter. The older plants, it should be remarked, require to be kept even drier at the roots than the smaller ones whilst at rest by reason of the amount of soil. Another mode of increase, and one by which vigorous young plants can be raised, is by means of the seeds, which when ripe may be sown at once or quite early in the spring. In respect to soil, I have always found these *Clerodendrons* thrive remarkably well in good turfy loam and leaf-mould, using the latter freely. Of course, failing the leaf soil, peat can be used, but it should be light, soft-handling peat as contrasted with that chosen for Heaths, &c. These *Clerodendrons* do not require the soil to be rammed around their roots excessively hard. In using leaf-mould freely it can

be readily seen that this cannot be so easily accomplished. Sand, of course, should enter freely into the compost, whilst if needful some spent Mushroom manure can be used.

The varieties need not be further entered upon now, these having been fully and concisely given in December last. *C. fragrans*, however, should be noted, particularly the double variety, for flowering in the winter months.

GROWER.

ZONAL PELARGONIUMS IN WINTER AND FOGS.

THE article on *Pelargoniums* (p. 275) I read with interest because I hoped to gain some information concerning the culture of these plants in what may be termed the London district. I am this season giving up their culture for winter work, as I find them the most unprofitable of all winter bloomers, as far as cut flowers are concerned. I think them useless for winter bloom in such localities as ours, but it must be taken into consideration that the situation is low, hemmed in by water on all sides, with little daylight at the time the bloom is opening, and fog more or less for two months during the autumn and winter. Last year I had sufficient plants to fill a fair-sized house, having grown them as advised in 7-inch pots. The wood was as hard as possible, having been thoroughly exposed and grown specially for winter work. I had been sadly disappointed with the results obtained in previous winters, and thought with more care bestowed on the plants I might do better. The plants soon gave up blooming after November came in; no matter what variety, all fared alike, owing no doubt to the atmosphere being too damp and want of light. In country districts, with more light and less damp, the *Pelargonium* is most servicable and easily grown; but in districts much affected by fog and damp, it seems to me a waste of time to attempt its culture. Some may say that the use of more warmth to dispel damp would have been beneficial. Such is not the case, as if too much heat is employed, it causes too much leaf growth and little bloom. The plants show abundance of flower trusses, but the blooms never open thoroughly. The question arises whether it is worth the trouble and expense to grow these plants under such circumstances when we have such a wealth of other flowers, such as *Chrysanthemums*, *Carnations* (of which *Winter Cheer* is a grand winter bloomer) and *Bouvardias*. I certainly shall omit the *Pelargoniums* for the sole purpose of providing cut bloom. I do not wish to despise this plant for winter work where it can be grown successfully, but I would strongly advise the young beginner not to put all his eggs into one basket, but to grow a variety of plants for winter bloom. When grown as advised (p. 275), "Grower" mentions the importance of single cuttings in small pots, thus keeping the plants from running up. I would also use less leaf-mould, as by this means a sturdier growth is obtained. I prefer good yellow loam, rather stiff than otherwise, mixing with it dry cow manure, or, what is better, stacking the loam six months before use and placing layers of fresh cow manure between the sods. This forms an excellent compost, with some quarter-inch bones or meal at the time of potting. I merely add this addition to "Grower's" clearly explained note, as so many plants fail to bloom if grown in too porous soil; indeed, the difficulty after housing the plants is to prevent the foliage getting in advance of the flower-spikes, as if at all vigorous, there will be a wealth of leafage and few flowers.

Syon House.

G. WYTHES.

Ataccia cristata.—I send you a flower of this remarkable plant, which is now in fine condition at Norton Manor, Taunton. It is remarkable because of the quaint colouring and singular form of the blossoms, as well as for the large size of the specimen from which the flowers I send with this

note were taken. It is a stove plant and delights in rather a high temperature, and as it is evergreen, the foliage is always more or less attractive. The specimen under notice is a noble one, as it occupies a pot 15 inches in diameter, the circumference of the leaves being 15 feet. At the present time it is showing close upon fifty flowers. An illustration of the plant in question will be found in THE GARDEN, July 17, 1886.—J. C. CLARKE.

Greenhouse shading.—In your issue of the 15th inst. I notice a letter referring to greenhouse shading, &c., signed "Plantsman," from which I quote the following: "As to the arrangement of roller blinds, I do not think even now that those with a wooden wheel on the outside end of each can be surpassed when they hang truly, so as to work regularly. In a range this cannot, of course, be done for any but an outside house, unless the adjoining one is not shaded at all." I claim to have improved on the system mentioned. From the photo sent you will notice my improvement consists in the adoption of two grooved pulleys at each end of the roller, one being fast to the roller and the other running loose on an iron guide or track at each side of the blind, thus keeping it in its proper position. The fast pulleys are, of course, for the cords to pass round, and which, when pulled, revolve the roller, thus winding up the blind. The main object of my idea is to keep the blind in its proper position, so that it can be worked with ease and not be the cause of so much trouble and annoyance as the systems at present in use entail. My improvement does away with the objection mentioned in extract before given, as the blinds are always worked from the centre, and it makes no difference whatever whether they only cover a length of 10 feet or are extended to a distance of 40 feet.—B. G. R.

CURCUMAS.

THESE are members of the Ginger family, the fleshy tubers of *C. rotunda* and *C. longa* being largely cultivated in the East for the sake of the turmeric which they yield. It is not on this account, I suppose, that Mr. Geo. Clarke asks me to give him some account of their culture and of the kinds worth growing. He says he saw last season (in a friend's stove) one that was really beautiful, and he wishes to grow some. These plants are very accommodating, because they die down in the autumn and remain dormant until the present time. They should be potted at once into the pots it is intended they should flower in. The pots should be of a good size, as it is well to have several tubers in one pot. The soil should be good yellow loam, leaf-mould and peat, with a little well-rotted manure added, the whole made fairly sandy. Drain well, as these plants like a bountiful supply of water both to their roots and overhead; but when their flowers come up, the syringing should be discontinued. After flowering the leaves will die away, when the tubers may be kept much cooler and nearly dry. Do not keep them in a warm house and quite dry, or you may find when you come to turn them out for potting up that the dry rot has attacked them and that they all crumble away to dust; indeed, I think it is to this system of keeping them through the winter that their scarcity can be attributed. Many species or varieties have from time to time been introduced, but I do not think many can now be found in the country. The following kinds I have grown:—

C. AUSTRALASICA is a free-growing plant, which makes a spike from 6 inches to 9 inches high. The bracts in the upper part are of a bright rose colour, in the lower part green; whilst the flowers are clear yellow. This plant was discovered by Mr. John Gould Veitch in Australia.

C. PETIOLATA.—This is even a prettier kind than *C. australasica*. The spike is similar in size, but

it has larger pouched bracts, which are rosy pink towards the base, becoming of a rosy purple towards the top, and the flowers soft yellow. It comes from Burmah.

C. ROSCOEANA.—This has bright yellow bracts, which are set off by the scarlet flowers.

Besides the above, there used to be many kinds grown, such as *C. rubricaulis*, *C. xanthorrhiza*, *C. longa*, *C. angustifolia*, *C. Zedoaria*, &c., but the above will be the kinds most likely to be obtained. WM. HUGH GOWER.

PELARGONIUM MME. CHARLES KÖNIG.

WHEN visiting a well-known nursery in the south of England where florists' flowers are largely grown for home consumption, I recently noted some fine plants of this, one of the most profuse flowering of all Pelargoniums. I could see by the style of the plants that they had not been subjected to the usual annual pruning after flowering. At the time of my visit these plants were being regularly drawn upon as a source of supply, quantities of flower-trusses being open with more coming on. Seeing that the treatment these plants had had was evidently congenial to the production of an abundance of flower, I inquired as to the treatment, which differs singularly in more than one instance from that usually accorded these decorative plants. The cuttings are propagated as a rule in March, being taken from the young growths, which are found to strike much more freely than if taken from ripened or partially ripened wood. The flowering points are first taken out and each cutting is then placed in a 2½-inch pot, the propagation taking place in a warm house. The soil used is three parts loam and one of peat and sand. When struck the flowers must be kept pinched out, otherwise no satisfactory growth can be secured, this variety being so predisposed to flower—in fact it is almost always in bloom. Pruning is objected to, the experience of this plant's requirements being that the less it is cut the better, whilst for the special supply of cut bloom it is far better to leave this entirely alone. The plants in question have been in flower all through the past winter, with hundreds of trusses upon them at the present time. About the end of August the plants are kept dry for about a fortnight, after which the balls are slightly reduced and repotted, the soil then used being three parts loam, the rest being stable manure (well decayed). Treated thus they are found to grow well. The temperature all through the winter months is maintained at an average of 50° at night, with an increase of 10° by day, air being kept on when the weather permits. It is not found to do so well with other Pelargoniums, being more tender and under that mode of culture a bad grower. The more generously it is treated the more flower is obtained. Plenty of weak liquid manure is given when the pots are full of roots. As regards size of pots, it is found an important item in its treatment to keep to small pots, the growth never being robust. Several of the white varieties have been tried, but none have been found to flower so freely as this kind, the only drawback being the rather short stems. SOUTHRON.

Seedling Anthurium Rothschildianum.—When seedlings are raised from the different spotted and freckled forms of *Anthurium Scherzerianum*, of which the above-mentioned was one of the first, they can by no means be depended upon to reproduce exactly the prominent characteristics of their parent, for, as a rule, some will revert to the ordinary scarlet-flowered form, while in the case of those that are mottled there is often a great deal of difference in the marking of the flower. Little reliance can, however, be placed in the blossoms of the first season, for not only are they puny and the size they will attain undetermined, but some which at that age produce scarlet flowers will after a season or two have their blooms speckled, that is, of course, if they are raised from spotted varieties. These spotted flowers have now been

grown for some years, the first of the class being raised by M. Bergman, gardener to Baron Rothschild at Ferrières, hence the name of *Rothschildianum*. Though these spotted flowers are not admired by everyone, they are certainly very distinct, and the best marked forms realise good prices.—H. P.

GARDEN DESIGN.

TO THE EDITOR OF THE GARDEN.

SIR,—As no one, after so long, has expressed an opinion in print on the above subject, I venture to state my own ideas, having had over forty years of garden work under the auspices of the chief landscape gardeners of the period. I agree with some of Mr. Thomas's arguments and remarks, but beg to differ from him when he compares a landscape garden to a wilderness, which, as the word implies, contains only natural plants and flowers simply indigenous to our native land and uncultivated, while the picturesque garden and pleasure grounds, when tastefully designed, properly laid out and planted, should display, as far as space and means allow, the greatest variety of coniferous and other choice trees of the most varied hue, form, and colour, all beautiful in their natural growth, no clipping, rounding, topping or lopping being allowed. I also agree with him in repudiating the idea of a garden being made a museum of exotic trees, but beg to remind him that experienced artistic gardeners would avoid such plants as have little or no beauty in form or colour.

I agree with him in not admiring the general effect of nursery grounds, where the plants are chiefly in rows and generally more or less crowded, while the same kinds of shrubs and trees, tastefully arranged in irregular groups, shrubberies, or plantations, become most attractive, and when the forms and varied tones of colour are studied are most beautiful, especially if a variety of herbaceous, perennial, and other flowering plants are displaying their loveliness along the border, in nooks or recesses in front of the evergreens and a few deciduous flowering shrubs, it being the best position they can occupy, for, with the green background, they thus become as gems of a diadem, always pleasing to behold, some even till Christmas in mild autumns.

Mr. Thomas and Mr. Shuffrey urge that the garden should be designed by the architect, but in my opinion the architect's sphere of design should not extend beyond the terrace. This, of course, should be formal or symmetrical and architectural in accordance with the style of building, the plants being arranged in parterres and various geometrical borders; also in vases, tazze, &c., plunging or planting them out, thus having no ugly flower-boxes or tubs visible. The planting, of course, devolves on the gardener after proper provision has been made by the architect. The aforesaid borders, &c., are, or generally have been, furnished chiefly with tender bedding plants in season, except in some places where choice dwarf-growing hardy conifers, evergreen beautiful foliage and variegated shrubs are planted behind, as of late years the more expensive bedding-out system has gone out of favour, while if planted with the perennial and herbaceous and other hardy, especially late, flowering plants, which have come more in vogue of late years, some will be blooming half the year, and the aforesaid borders will, or can be, made interesting with the aid of dwarf-growing evergreens and flowering shrubs, while some more may be planted later on, thus avoiding such bare spaces for the remainder of the year so objectionable with the summer carpet or bedding-out system.

When the necessity for a terrace has been arranged between the owner, landscape gardener, and architect, the last is the most proper to design and see it carried out; but anything beyond this, or the immediate surroundings of the house, should come within the sphere of the experienced landscape gardener, who should be well up in plants, and able to advise as to the most suitable class of plants according to the aspect and sites.

Architects have quite enough, if not too much, to study, in their own profession, in the various styles of architecture from the Saxon down to the Victorian era, including the classic, Renaissance, and others adopted in this country in the interim of over 1000 years. Then comes the theory and practice of construction, a knowledge of the materials used in building, the progress, and especially the nature of the foundations, and the other multifarious duties connected with his profession, including the supervision with some practical experience of the many trades necessary to the completion of the buildings.

He need also have a knowledge of the numerous inventions so often forced on his notice, good, bad, or indifferent, so that altogether he cannot give much study to landscape gardening, *i.e.*, to make the garden and pleasure grounds picturesque with the chief elements of beautiful scenery, wood, rock, water, ancient ruins, &c., which combined make the view so delightful, I may even say sublime, such as has been done by noteworthy landscape gardeners like Messrs. Marnock, Brodrick Thomas, E. and H. E. Milner, Gibson, Kemp, and others, none of whom have I known to encourage the shearing or clipping of trees or shrubs with the idea of improving their natural shape, except to form hedges.

I mention these gentlemen, having had the pleasure of doing garden work under their able auspices, all of them having shown their good taste by combining a modicum of the symmetrical or formal system with the more natural and picturesque, including rocks, or what is said to be one of the grandest objects of Nature. Allison, writing of the beauty and sublimity of the material world, says, "A great rock or mountain-side topped with wood, &c., is sublime," to which I venture to add, that if a sparkling cascade descends through a ravine in an escarpment of rock, it becomes even a more beautiful object and charming in its magnificence; but this, to be successful, requires some knowledge of geology on the part of the architect or gardener.

Within the terrace there is generally a good place for a fountain, which should be arranged with the assistance of the gardener, as from this the overflow water (where it is sufficiently available) may be utilised in the pleasure grounds, as by means of an irregularly shaped silvery lake or pond, having a rocky stream flowing into or from it, and if there is fall enough in the ground, the strata of rock may be made to stretch across the stream, thus forming sparkling cascades, so that there is rock cropping out, into, and over the water; and where the banks are high enough, a boat house or cave may be formed in the rock, and partly shrouded and topped with plant life characteristic of rocks, such as Yews, Gorse, Heath, Broom, Bramble, &c.

Reverting to Mr. Thomas's charge against landscape gardens, such a feature is purposely made or improvised where there is a suitable site with a few of the Pine and Fir tribe, some Yews, Hollies, &c., which may perhaps be already on it, and with some of the best of the numerous wildings, such as Narcissi, Hypericum, Honeysuckle, Foxgloves, Primula, Ferns, Gorse, Heath, Broom, &c., some thriving in the sun, some in shade, and all indigenous to our native land, which of course the gardener will know. It is not to be expected that all can be artists, or understand the many thousand varieties of native hardy, exotic, and tropical plants, with fruit and vegetables, of which there is always something new to become acquainted with, but most experienced gardeners will do better than any architect outside of the terrace.

Examples of the formal style of garden may be seen effectively in Mr. Elgood's pretty water-colour pictures termed "The Garden, Grave and Gay." It is certainly made very gay with hardy flowering plants, and grave, I suppose, is meant by the sombre hue of the hedges, cones, &c., of Yew, some more curious than beautiful, but only consistent with an old house or garden, or at least with an old style of house.

Of course to attain the curious effects shown must be the work of many years and much ex-

pense, while the effect with ordinary planting may be more beautiful in a few months as these fanciful Yews take years, they having to be grown and clipped to the shape required so many times before they attain to the quaint or grotesque forms shown in Mr. Elgood's drawings and in THE GARDEN.

The late Mr. Robert Marnock adopted terraces where they appeared to be proper, as, for instance, where the house was sufficiently elevated for the scenery around to be seen from it, as at Park Place, Henley; Dunorlan, Tunbridge Wells; Hunsdon House, &c.

Some are right in condemning the excessive system of growing and bedding out tender plants, which are pleasing only during three or four months of the year, but which should be, and generally are now, planted within the terrace or contiguous to the house more with perennial and herbaceous plants and flowers, which will be pleasing for nine or ten months of the year, with a few choice trees and shrubs where there is space enough, and be the more interesting all the year.

Other important features in good pleasure grounds are comprised in what some term a rock garden, in which there should be some provision for the growth and display of an endless variety of dwarf growing coniferous plants, shrubs, and bushes, alpine and other rock plants, as Sedums, Saxifrages, Sempervivums, numerous varieties of Ferns, climbers, and trailing plants, especially the variegated, all hardy and characteristic of rock scenery, and which should be arranged for sun and shade in order to grow and thrive. Thus we get scenes of great beauty and interesting all the year round.

Of course, all that is here set forth should be done in a tasteful and scientific way, avoiding cockneyism and consistently with geology, and not as if stones had been piled up by the workman's hand, but strikingly natural and effective.

J. PULHAM, SENR.

* * We have allowed Mr. Pulham a free voice, saving taking the liberty of changing the word "landscapist" to the good old English one of landscape gardener, the best of all words used in that sense. Mr. Pulham's paper is useful in reminding us of some of the many duties which have fallen on the architect of late years in addition to his original work. We are surprised, however, that Mr. Pulham should consider the architect necessary as a terrace builder, considering the number of terraces Mr. Pulham must have seen built, and well built, by Mr. Marnock, Mr. Nesfield and other landscape gardeners, not to mention the work of M. André in France and Mr. Olmstead in America. No doubt a good architect would be an excellent judge of what ground required terracing round the house, but that subject should be more familiar to men such as we mention who have to consider it more than any architect; but all the parts of a garden should be designed by a man who has made a life-study of the subject. In no other way can we get the best result, although gardening is itself so interesting, that any designer will give us things that will pass as pretty. But there is a woeful difference often between the best we can get out of a given site and what the ordinary designer will give us. We think also Mr. Pulham's faith in conifers is too great; they have done more than anything else, barring the iron fence, to spoil the foreground of the home landscape. Happily, disease and other misfortunes are thinning their numbers rapidly, and people who can see the difference between their ugly toy forms and those of our native trees, should let sharp axes fly among them. Trees of the Pine tribe are often noble and beautiful in character, but they should be grouped and massed in picturesque and bold ways, not as they generally are, stuck inartistically in our pleasure gardens.—ED.

NOTES OF THE WEEK.

The Star Narcissi on the Grass at Kew are very pretty. The flowers wave gently in the wind and have a charmingly natural aspect. Large breaks of Daffodils occur on the Grass, odorless in particular being much used, creating sheets of rich yellow. Unfortunately the Daffodils this year go quickly over, owing to the bright sunshine.

A bed of *Narcissus Muzart orientalis* at Kew is attractive, and it is not often one sees this somewhat uncommon variety thus massed together. The effect, however, of the colony of white flowers is very pleasing. Each bloom is of good size and the cup is orange. We should like to see the Daffodils more freely used in this way, as one gets the full beauty of their flowers.

Muscari Heldreichi is one of the finest of the Grape Hyacinths. It makes a brave mass of colour when planted in quantity, and has very large deep blue flowers, the upper portion of a paler shade. It is not unlike *M. botryoides*, but in every way larger and more robust. If only one kind of Grape Hyacinth is grown, *M. Heldreichi* should have preference over the long list of other kinds.

A charming arrangement we noticed the other day is worth recording. It was a quaint, bright, and pretty association of spring flowers. The two back rows were composed of variously coloured Tulips, amongst which the dwarf *Phlox amœna* was flowering freely. Then came the bright yellow *Erysimum ochroleucum*, *Primulas* and *Auriculas* forming the margin. We have seldom seen a more pleasing and old-fashioned arrangement of spring flowers, all easy to grow, not rare, and making a bright contrast.

A white Carnation.—Enclosed I am sending you a flower of the white Carnation *Florence Emily Thoday*, which I think you will agree with me is the very best white Carnation ever seen. These flowers are forced ones, and consequently will not be quite so large as if grown in the open.—THOMAS S. WARE.

* * A distinct white, very smooth, and yet the flower nicely tossed up without any signs of bursting. We should like to see it tried in the open air with such kinds as *Alice*. In any case it is a valuable kind for the house.—ED.

Japanese Crab Apple (*Pyrus malus floribunda*) is very beautiful just now in the Royal Gardens, Kew, where it is well used, particularly in a bed of late spring-blooming trees and shrubs. The slender shoots are weighed down with the burden of flowers, which are white, set off by the deep crimson buds. It is a dwarf, spreading tree, the head dense, and presenting a surface of delicate bloom. Although not so uncommon as many varieties of *Pyrus*, it is yet insufficiently planted, and in every garden should be found one or more specimens. Few trees bloom so profusely, and the masses of white against deep crimson create a charming contrast. The type is indeed pretty enough, but there are varieties of it with flowers deeper in colour and also of bolder form.

Phyllostachys (Bambusa) nigra.—As a hardy Bamboo this species can scarcely be said to be known in England. Yet in the Bamboo garden at Kew none has suffered less from the frosts of the past winter than it has. The largest plant is about 8 feet high, and its slender-growing canes clothed with plumes of rather small deep green leaves give it a very graceful appearance. Equally elegant, too, are several smaller plants 3 feet to 4 feet high, which have passed through the winter with less damage to the foliage than even *Bambusa Metake*. The most remarkable character of this species is the black-green colour of the stems, but out of doors in England this is not so striking as it is under more favourable conditions. About three years ago I saw a magnificent thicket of it in a private garden at Nice. It was 20 yards through, and the perfectly straight smooth stems shot up to a height of 30 feet. Their colour was

an intense bronzy green, so dark indeed as to appear quite black at a short distance. It makes a very attractive Evergreen in the conservatory, growing much more freely than outside. It is very fine in the large house at Chatsworth, and some good specimens of it may also be seen in the temperate house at Kew. It is a native of China and Japan.—B.

The Siberian Crab (*Pyrus malus baccata*) is a handsome lawn tree in flower now, and it is curious, in spite of its delightful beauty, that such a tree is not in all good gardens. At this season every twig is smothered with white flowers, which will in due course be followed by highly ornamental fruits that have a gay aspect in the autumn months. The Siberian Crab is remarkably graceful in growth, and even when out of bloom is a pleasure to look at, but its beauty is increased when the flowers are fully expanded, and there is a good show as a rule of the small, but showy fruits. On the outskirts of the lawn it might be planted with success, as the tree does not occupy a large area and is graceful in growth. The Pyruses are strangely neglected, but they seem to be getting better known.

Genista præcox is one of the more important shrubs in bloom now, and when massed together makes a glorious display of its soft yellow flowers. It is planted thus in the Royal Gardens, Kew, where there is a large bed on either side of the walk leading from the Palm house to the river Thames. *G. præcox* is a fine hardy shrub, and is hidden with its flowers when in full perfection, every shoot being covered. It is this great freedom of flowering, soft colouring, and delightful airy aspect that make it of such value in late spring when the garden is in its best dress. A good specimen on the rockery is attractive, and there are many positions where it can be planted with effect. In many gardens such bright and beautiful things are permitted to go their own way; they look neglected and ragged; but when in full health, several plants together, the effect of the wealth of pale yellow bloom is delightful.

Azalea rhombica.—Whilst the forwardest of our hardy hybrid (so-called Ghent) Azaleas are only showing colour in their buds, and quite soon enough, too, considering that some time has yet to pass before we can feel secure from frost, *Azalea rhombica* is in full flower. It is a Japanese species, and easily recognised by the rhomboid leaves. For early flowering, it is, I think, worthy of wider cultivation than it has at present; for, although liable to damage by frost, we can, as a rule, count on at least a week or two of its brightly coloured flowers. These individually measure about 2 inches across and are of a bright purplish rose. The new *A. Vaseyi*, first figured in the *Garden and Forest* for 1888, promises to be a useful companion to *A. rhombica*. It is a native of Carolina, and is also now in bloom. The flowers are about the same size as those of the previous species, the colour being a pale clear rose and very pretty.—W. B.

Earliness of Roses, &c.—Outdoor Roses, of any section but the Chinas, come as a surprise in April. During the past few days we have cut fairly open buds from the walls of such kinds as *Jaune Desprez*, *Gloire de Dijon*, *Reine Marie Henriette*, and several sprays of Banksians, white and yellow, while many other kinds are showing colour, and Hybrid Perpetuals in beds have their buds quite forward. The Roses, however, are not alone in this earliness, for the common forms of Tulips and all but the very latest Daffodils are nearly over, while Crown Imperials are long past their best and turning yellow. Solomon's Seal is in flower, and, look where one may, the general earliness of the season is strongly in evidence. Strawberries Noble and John Ruskin are already larger than Peas, and very few of the blooms have been cut by frost. A sharp frost after this time would be quite disastrous.—J. C. TALLACK, *Livermere Park*.

Earliness of the season.—Here in the south of London, 320 feet above the sea, the Hawthorn was in flower in sheltered places on April 22. One

Gloire de Dijon Rose on the south wall of the house was fully out on April 21, the Lilac is out, and the Laburnums are showing colour. Peas, Plums, and Cherries are nearly out of flower. Apples are in full bloom, and Strawberries are showing their blossoms. Oaks are partly in leaf, so that there will be no difficulty this year at any rate in sporting Oak apples on Restoration Day, May 29, where that country custom is still kept up. When Charles hid himself in the Oak, the 29th was, of course, twelve days later, or otherwise his sacred majesty would have been hard put to it to hide his royal form. Last year the Hawthorn opened on June 12 in the same spot, a difference in the blooming time of fifty-one days. The bulbs and spring flowers fade terribly quickly in this drought.—J. I. R., *London, April 24, 1893*.

Cytisus biflorus.—A group of plants belonging to this species is now very beautifully in flower on one of the slopes of the Bamboo garden at Kew. Flowering as early as the middle of April, when the only other Cytisuses of any note in bloom outside are *C. albus* and *C. præcox*, it becomes especially useful for spring effects. It is a deciduous plant, growing to a height of about 4 feet, and making in one season gracefully arching shoots 2 feet long. The flowers are bright yellow and produced from almost every axil on the shoots. The specific name has no particular meaning, as the flowers occur as frequently in threes as in pairs. The leaves are ternate and covered with a silky pubescence underneath. The species varies considerably in minor points, and in consequence is known by a large number of synonyms, especially in the smaller Continental gardens. Among other names less frequently used, *elongatus*, *ruthenicus*, and *supinus* may be mentioned. *C. uralensis* also comes under this species, but it designates a form recognisable by its larger flowers and leaves; at the same time every gradation exists between it and the type, and where a large number of plants is grown some might be selected that could as reasonably be called *biflorus* as *uralensis*. The species was first introduced in 1760 from Hungary, but it is widely spread over other parts of Eastern Europe.—B.

Three rare Daffodils.—When looking through the Daffodils in the Royal Gardens, Kew, a few days ago, we noticed clumps of three of the more useful new kinds of recent years. One was *Glory of Leyden*, a remarkably large flower, and likely to prove, judging by the clump of it, a valuable variety for grouping. The flowers are larger than those of *Emperor*, the perianth soft yellow, and the bold trumpet of a rich, decided shade, in fine contrast. The whole aspect of the bulb betokens great vigour, not only in the breadth and massiveness of the flower, but also in its freedom and robust leafage. Against *Glory of Leyden* was flowering *Mme. de Graaff*, which may be described as a white trumpet kind; the flowers are practically white, but the trumpet is of a pale sulphur colour, very delicate in contrast. They are large and pleasing, and the bulb, as far as one could judge, extremely vigorous. This is of course the great point, as unless a Daffodil possesses great vigour, it is of little value for the garden. Associated with this was another comparatively rare variety, named *Gloria Mundi*, which is, however, getting more popular. The flowers are bright and showy, the colour yellow, the cup very widely expanded, and flushed or stained with orange-scarlet. These three fine Daffodils promise to become favourites for the garden, as they are all strong in growth and present a bold aspect. *Emperor* is largely used at Kew in the arrangements, but it is possible that in time *Glory of Leyden* will supersede it.

Berberis stenophylla.—This Barberry is said to be a hybrid raised between *B. Darwini* and *B. empetrifolia*. I have not yet met with any precise and authentic account of its origin, but by the differences it shows from either of its reputed parents, I should be disposed to doubt that, if a hybrid at all, such was its parentage. *B. empetrifolia* is a dwarf species, rarely more than 1½ feet high, and *B. Darwini* is, as a rule, not more than 6

feet. A hybrid between the two one would expect to be of intermediate height, but *B. stenophylla* is not only taller, but much more vigorous than *B. Darwini*. It is, I consider, the most valuable of all the evergreen Barberries, being hardier, freer-flowering and of more graceful habit than *B. Darwini*. There is near where I write a large bush of it 9 feet high and 12 feet or more through, which is now a complete mass of bright yellow blossom. The narrow, intensely dark green leaves occur in clusters of three or four, and are backed by short spines at the base. The flowers are on racemes an inch long. This plant is well adapted for standing as an isolated specimen on a lawn, where its extremely graceful habit renders it ornamental even when out of flower. It may also be used in beds or groups, and is said to make an excellent covert plant.—W. B.

The different varieties of *Berberis* are flowering this season with unwonted freedom, especially the kind above noted, the long and slender growths being literally wreathed with bloom. It is whilst the plants are in bloom that anyone can see the positions in which they are most effective. The pleasure grounds here are very undulating, with numbers of banks or slopes—positions in which the *Berberis* shows itself off well. The plants are not put in singly, or in twos or threes, but in large groups of upwards of a hundred plants in each. For clothing steep rocky slopes, the Barberries are admirably adapted, as when not in bloom they are always evergreen. Not only *B. stenophylla*, but *B. Darwini*, *B. Jamesoni*, and also *B. Mahonia* have been planted freely. The *Berberis* does not appear to be very fastidious as regards soil, as it grows freely enough in clay intermixed with stones. Unfortunately, in our wooded district the birds will not leave the berries alone.—A. YOUNG, *Abberley Hall, Stourport*.

Notes from Almondsbury.—Till this year I have found it hard to believe in the glories of an English spring as the old poets have declared them to us; now, however, the fierce heat of the present is found to be a little more than we would desire. One very disconcerting result is the separation of flowers from their proper relation to certain occasions. Old Cuddesden students will well remember the masses of *Clematis montana* on the palace and village walls of Cuddesden at the festival on Trinity Sunday. As I saw *C. m.* in full beauty last week (April 19), I can hardly expect to find it at Cuddesden on Trinity Sunday. As for *Pæonies*, I have some *Moutan*, large, semi-double, purple (I use the word in fear), in bloom, and in a few days many large double pink ones will be open. I have about forty bushes of *Tree Pæonies*, all planted three years ago, and I see seventeen blooms on a plant obtained from Japan in 1888. If this weather continues, what flowers will fill the hardy borders in June and July, for most of mine will have finished blooming before then? I intend to sow many annuals broadcast, and trust that some day it will rain. *Camassia Leichtlini* is in full beauty; it is planted in a line in front of choice shrubs. *Waterer's Cherry* and a double pink *Peach*—behind them an *Almond*—gave me last week some lovely bits of colour. This will be a good year to test *Begonias* and *Dahlias*; their value in giving colour to bare beds and standing drought will, I hope, be fully shown. Never to my knowledge did shrubs and flowering trees give such bloom as this year; all trees are alike, a bush *Blenheim Orange* three years old being remarkable, and a *Ribston Pippin* in my garden is loaded with blossom after giving me good crops three years running. I saw *Wistaria* in bloom on April 6, and the *Banksian* Roses here will be over before their natural season usually begins. The common pink wild Rose is also out on a bed looking north in the garden. Honestly, at the present rate there can hardly be any Roses in bloom after June 15. One moral of the present season is surely to try varied aspects for the purpose of retarding flowering. It is annoying to have all one's Daffodils over by about the same date.—C. O. MILES.

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FLOWER GARDEN.

A COMBE IN SOMERSET.

THIS charming pen and-ink drawing by Mr. Alfred Parsons, which we once reproduced by process and now publish a good engraving of, shows one of those charming combes in Somersetshire where the most charming little valley is sheltered and guarded by high banks with the prettiest little stream and many wild flowers by the waterside. All such things are instructive to those who care about beautiful gardens and landscape. A study of such far from uncommon examples would save the young landscape gardener from many an awkward line in his banks and water margins. The Kingcups and Daffodils in the foreground are very prettily grouped.

THE AURICULA.

THIS has been an exceptionally early season for the blooming of all classes of Auriculas. As I write these lines (April 15) even the alpine out of doors in a shaded position are in flower. Those who in the south are growing their plants for the southern and northern exhibitions will find extreme difficulty in getting a decent collection together. The seasons for some years have been so bad, cold east winds with rain, sleet, and snow having been the rule rather than the exception in March and April for the last ten years, that we cannot quite realise the present remarkably dry weather. The frosts have been severe, but their effects cannot have been disastrous in any case. The bloom of the edged Auriculas has been remarkable; even such late-flowering varieties as Richard Headley and George Lightbody were in flower in the first week in April, and owing to the favourable season the trusses of bloom have been very fine. A new variety, James Hannaford, sent out recently by Mr. Simonite, of Sheffield, has this year proved itself to be a superb green edge. Mr. Henwood, who has also bloomed it at Reading, as I have done here, writes to say that it has been greatly admired and described by the growers as a green-edged George Lightbody. This good old variety is usually named as the standard of excellence, and to describe a green-edged Auricula a counter-part in its class as a George Lightbody is to give it the highest measure of praise possible. Mr. Simonite raised the best green-edged Auricula at present in commerce, that is, the Rev. F. D. Horner, and it will be a

great honour to that good old florist if it turns out that he has placed the two best green-edged varieties into the hands of the florists. I have another excellent green edge of Mr. Simonite's which he has named after his late old friend the Tulip fancier, Dr. Hardy, and I fancy it will be worthy of the name. Venus, a really good white edge of Mr. Simonite's, I have grown for two seasons, and

be done to improve the yellow and primrose-coloured Auriculas. They are extremely beautiful. I had Mr. Horner's pretty seedling Buttercup, with thirteen pips open on it at one time, and it is certainly far in advance of any yellow yet raised. I have obtained some good yellow seedlings at various times, and there is a beautiful primrose-coloured variety named Sunshine, which Mr. Horner raised in his garden at The Vicarage, Kirkby Malzeard. Mr. Simonite produced a fine yellow self some ten years ago in his garden at Sheffield. I have flowered it annually since that time. It is a vigorous plant and has a better-formed pip than Sunshine, but does not produce such a good truss. The yellow selfs are not greatly favoured by the florists, but as pretty spring flowers for the garden they are of much excellence. The dark selfs are the most esteemed, also those of a deep violet colour. Horner's Heroine and Woodhead's Black Bess are the two best dark-coloured varieties. Horner's Sapphire and Barlow's Mrs. Potts are the best violet-coloured varieties, but they so soon pass out of bloom in such weather as we have had this year, that it will not be possible to present them in good condition with the green, grey and white-edged varieties, as these last so much longer in good condition.

As the flowers fade, it is well to put the plants into garden frames, which ought to be in a shady place, so that the sun does not shine upon them during the hottest part of the day. In most gardens it is easy to select a place on the north side of a wall or building, or even a high fence. If they are placed in the full sunshine, some shading material ought to be placed over them when the sun shines, but air freely at all times, and in settled dry weather the lights ought to be taken off all night, pushing them on again and tilting them up well in the morning. We have already repotted a three-light frameful of plants that had passed out of bloom before April 10—very nearly half of our stock of full-sized plants. The offsets have to be taken care of, and must be repotted as they require it. Small plants in 2½-inch pots in the spring will, with care, grow into flowering specimens by the end of the season.

J. DOUGLAS.

Basal rot in Daffodils.

—It may perhaps assist the Rev. C. Wolley Dod in his investigations as to the cause of basal rot in Daffodils if I mention what occurred here this season. Last autumn I potted up amongst others a number of Ard-Righ for forcing, plunging these in fibre in the ordinary way. I did not give any additional protection from frost, which set in on Christmas Eve. The soil of the pots in the centre, on account of the extra protection, was not frozen, but that of those at the outer edge was frozen through. The bulbs in the latter case without



A combe in Somerset. From a drawing by Alfred Parsons.

think it very correct in its markings and the edge very pure white; the plant is small. Ariel is a true crimson self, for which a certificate was awarded by the Auricula Society. I have several plants of it now in flower, and it far surpasses such a variety as Marquis of Lorne both in colour and quality; the truss is compact and neat, the plant of medium size. Something more ought to

exception were affected by basal rot, whilst those not frozen, or if so very slightly, were not affected in the least, these producing healthy foliage and good flowers. The leaves of the others only grew a few inches in length, turned yellow at the ends, and there were no flowers. If one or two did show, the scape only rose just above the bulb and was an abortion. Ard-Righ planted in the open is not affected. —A. YOUNG, *Abberley Hall*.

FLOWER GARDEN NOTES.

THE various members of the Polyanthus and Primrose families have suffered considerably this year from the attacks of small birds; indeed, in some cases where prompt and effectual measures were not taken, flowers are likely to be scarce. Failing a supply of small-mesh fish netting, which, being required for the fruit trees at this season, is hardly likely to be available, black thread crossed here and there over the beds at about 6-inch intervals is decidedly the best preventive just as flower-buds are showing. Although fully alive to the value of these beautiful flowers for spring gardening, it is, I think, hardly advisable to employ them on too extensive a scale; not, that is, to the exclusion of other things, for it is an undoubted fact that in seasons like the present they are hardly likely to be seen at their best. Given a deep, rather holding soil, atmospheric conditions may make little difference to them; but if they have a shallow, rather poor soil, a continuation of hot days with bright, almost scorching sun and drying winds seems to arrest the growth, the foliage begins to look yellow, and flowers are few in number and second-rate in quality. Beds may be mulched and watered, but it hardly has the desired effect. Where there is a batch of late seedlings on a nursery border from which some good things are expected, it is well to have a few sticks ready to hand and to make a point of running along the border occasionally to select the best things in their respective colours. If there is not much time for label-writing, a notch on the stick cut in a peculiar manner may serve to indicate the several colours.

PHLOX SUBULATA.—Writing of spring flowers calls to mind this charming section of the Phlox family, not seen, I think, nearly so often as its merits warrant. Either in small beds, in large clumps as a foreground for other things on the herbaceous border, or on rockwork they are very beautiful and are perfect sheets of bloom. Besides the type, *atro-purpurea*, *grandiflora* and *Nelsoni* are three good varieties. They are seen to the best advantage in a light porous soil and in an exposed sunny position. It is a good plan to put in a small batch of cuttings annually to replace any old stock that may go off. They strike readily enough any time during July in a cold frame or on a west border where they are partially shaded. Daffodils are still plentiful on north-west slopes in the pleasure ground. We shall have a long Daffodil season, for, as noted in a recent number, *obvallaris* and *scoticus* were very early in bloom, and there are still (April 14) several late varieties to come out. I should think even with our small collection they will extend over a period of two and a half months. *Poeticus ornatus* is very fine this year. Some three seasons back when a goodly supply of this variety was to hand, I picked out a few of the best of the bulbs and planted them on a border devoted to bush Apples. The foliage this year is very strong and vigorous, and we shall get an average of five fine large flowers per bulb right through the piece. It will be well to get a supply of short manure, not over strong, for any flower beds at present tenanted with Wallflowers. Being gross feeders, these take such a lot out of the ground, that although the practice is not generally to be recommended, it is absolutely necessary to manure slightly after them, so that the succeeding plants can get a fair start. A well pulverised border will be necessary where Wallflowers are to be sown for another season, and it is always advisable to have a good batch, especially now that one can generally make sure of

securing such a sturdy compact strain in the different shades of dark brown and yellow. For cutting, too, they are in great request. Nearly every one likes Wallflowers; indeed, I suppose they would rank together with the other two flowers named earlier in these notes, Polyanthus and Daffodils, as general favourites. It is very seldom that we are favoured with such a thoroughly weed-killing spring, and on the herbaceous borders as well as in the kitchen garden an occasional application of the Dutch hoe keeps everything clean. A slight mulching has been given this week to some plants that were moved rather late and which seem to feel the continued spell of drought. All well-established stuff on these borders is coming away with great vigour, and there is the promise of a brave show both as to quantity and quality. A few specialties that were broken up rather hard in the autumn seem a trifle weakly, but a mulching and a little water will doubtless start them off rapidly. *Spiræa palmata alba* and *aurea picta* in whites, and *Helianthus multiflorus* Bouquet d'Or and *Soleil d'Or* in yellows are four plants that have been so treated, and they are well worthy of being grown in quantity. *Aproros* of white flowers, one generally gets a very fair percentage of these on any given length of herbaceous border from white Pyrethrums and Pæonies, on to similar shades in Campanulas, Antirrhinums, and *Spiræas*, but as plenty of white is always acceptable, a few annuals of that colour that may be used for filling gaps, and which will be found useful for cutting, are Princess Alice Stock, Constance and A. W. Tait Cactus, Guiding Star and George Brinckman dwarf bouquet Dahlias, with a few clumps of Mrs. Sankey Sweet Pea. Where the stock of Dahlias was touched with the frost, and old roots are comparatively scarce (not an uncommon complaint this season, I fancy), sound tubers will want starting in a little warmth to secure a plentiful supply of cuttings. Tufted Pansies are best autumn planted; under such circumstances there is no check either to growth or flower-bud, but if any new arrangements were made necessitating further planting, it should be done at once, reserving occasional spaces for a few taller plants. Experience of several years has shown there is nothing so suitable as dot plants for the tufted Pansy carpet as Fuchsias, and a very telling contrast can be made if the sorts are well chosen. For all the dark-flowered section of tufted Pansies, of which Mrs. Bellamy, Archie Grant, or Sir J. Terry may be cited as examples, nice little plants of the variegated form of *Fuchsia gracilis*, any free growing sort with a white corolla or Rose of Castile may be used, whilst, on the other hand, anything like Abundance *Fuchsia* will associate admirably with all such light-flowering tufted Pansies as White Swan, Lady Dundonald, and Blue Cloud. An arrangement for a large bed for the current season will consist of rings of Sir J. Terry (a fine dark flower, growth compact) round plants of *Centaurea ragusina*, all intervening space being filled in with *Echeveria secunda glauca*. The *Echeveria* will be allowed to flower, and an occasional plant of *Fuchsia gracilis* variegata dotted among it. Those who like to try the experiment of panelling large beds, shading them down, as one remembers working zonal Pelargoniums, will find *Violas* admirably adapted for the purpose; plenty of sorts will intervene between the rich dark violet of Sir J. Terry and the pale mauve Ariel. E. BURRELL.

Claremont.

The blue Primroses at Wisley, in the interesting garden of Mr. G. F. Wilson, are very charming, not alone for the depth of violet-blue colouring, but for the way in which they are planted against Moss-covered stones to bring out the full richness of the finely shaped flowers. We were, when at Wisley, much struck with this happy contrast, the clump being of good size, and the flowers produced as freely as in the common wilding of English woods and lanes. The yellow or orange centres, varying in size in different kinds, bring out the full body colour, which, if not a true blue, is not of a dead, ashy shade, but essentially pleasing

and effective, as one may see from the coloured plate of Oakwood Blue, given in THE GARDEN of June 27, 1891. We hope that Mr. Wilson will continue to raise such good kinds and keep the colours free from the magenta shades that spoil many otherwise pleasing varieties. A blue Polyanthus is a novelty, but Mr. Wilson recently exhibited flowers of this new departure amongst Polyanthus, and again one sees the strong, rich, distinct and telling shade of violet-blue. The Primroses at Wisley are very beautiful. The flowers are as conspicuous for size and fulness as for the clear colours, varying from the richest yellow to vivid rose; whilst the pure whites make a fine display. Such good varieties should be planted freely in all gardens.

The Tulips are the flowers of the week, and they are this year much finer than the Hyacinths. Soon the later types will be in bloom, and these are more interesting and beautiful than the Dutch kinds, that are too dwarf and regular to please those who dislike formal arrangements. The Parrot Tulips are very interesting, and make a great show of colour, as may be seen in such nurseries as that of Mr. Walker at Ham, where many long beds are devoted to them—a blaze of colour, rich, and quixotic, various shades of intense hue, yellow, crimson, and greenish, with other shades laid upon the curiously gashed petals, distinctly attractive from their very curious character. There is some mystery as to the origin of this type, it having been suggested that *T. cornuta* played a part in its history, but perhaps someone who knows Tulips well can suggest the probable parentage. Another curious class of Tulips is that called Darwin. The flowers are very handsome in shape, and the lighter colours are attractive, but we see no beauty in the dark shades that have a dead aspect, not pleasing in the garden, where colours should be clear and as far as possible decided, at least as regards such things as Tulips.

Iris pumila and its varieties we noticed a few days ago in bloom in the Royal Horticultural Society's gardens at Chiswick. These dwarf bearded Irises are very charming at this season of the year in beds or the front part of borders, and they bloom with freedom long before the majority of the family. A very deep-coloured kind is *I. atro-cerulea*, the plants bearing flowers of a dark purple colour, in contrast to the pretty variety named *cerulea*, which is of a very delicate sky-blue colour. *Lutescens* has yellow flowers. To get much effect from the plants, they should be massed together and in a light warm soil. A pleasing kind also is *I. Chamæiris*, which has deep violet-purple flowers, and worth planting in a bold mass for its richness when in full bloom.

Exhibiting alpine plants is not usually attended with much success, but we noticed at the meeting of the Royal Horticultural Society on April 11 the group from the Guildford Hardy Plant Company, set out with much taste, to imitate as far as possible the natural conditions of the plants. Pieces of stone were inserted amongst the alpinists in a very natural way, the creeping kinds spreading themselves over the surface. This is far better than showing delicate little alpinists in bald pots or pans. We remember the charming group at the last Temple show of the R.H.S. from Messrs. Backhouse, of York, and if one could see more of this pretty way of exhibiting, our shows would be more interesting and useful and less formal.

Cactus and decorative Dahlias: a suggestion.—Having some years back seen at Heckfield how Mr. Wildsmith had trained his single Dahlias in a flat manner in front of a hedge, the thought has occurred to me that the Cactus and decorative kinds might with advantage be treated in the same fashion. In my own case I intend to give these kinds a trial this season upon a long stretch of wire fencing which hitherto has not been occupied. Whilst thinking out this matter it has occurred to me that many others besides myself might be able to grow them upon the same system. We know full well, those of us who have

to contend against strong gales of wind, that these Dahlias are frequently whipped against each other and thereby spoilt. The training in a flat style against a fence that is secure may take a little more time, but I am under the impression that it is worthy of a trial. At any rate I mean to try it, and will report in due time.—DAHLIA.

Bulbous plants in Hyde Park.—Each recurring spring there is a good display of flowering bulbous plants, especially Hyacinths and Tulips, in the beds that run parallel with Park Lane, and though the sharp frosts and dry hard winds that were experienced about the time the bulbs were at their best injured some of the flowers, there has been a good display. On April 15 the Hyacinths were rapidly fading, but many of the Tulips were then in full flower, and a few notes as to the best of them may be of interest. Those especially worthy of mention would include Thomas Moore, deep orange, very distinct; White Pottebakker, dwarf white; Yellow Prince, bright yellow; Proserpine, deep carmine-rose; Keizer Kroon, bright red, deeply edged with gold; Joost van Vondel, cherry-rose, irregularly feathered white; Chrysolara, deep yellow; Wouverman, purple, one of the most distinct and of a dwarf sturdy habit; Van der Neer, not so deep in colour nor so effective a flower as the last. Of double flowers may be noticed Imperator Rubrorum, scarlet; Tournesol, red and yellow; Murillo, bluish white; Gloria Solis, red, edged with yellow; and La Candeur, white. This last is later than any of the preceding, while the taller Gesneriana and Golden Eagle are even more backward. The best Hyacinths were Robert Steiger, red; Baron Von Tuyl, rich deep blue, the finest of that tint; Grandeur à Merveille, bluish white; Lord Macaulay, pale red; Madame Van der Hoop, pure white; Gertrude, deep pink; Mont Blanc, white; Gigantea, rose; Lord Derby, pale blue; Charles Dickens, bright blue; Baroness Von Tuyl, white; Regulus, porcelain blue; Norma, pretty pink; Lord Wellington, bluish; and Orondates, pale blue. The above constitute a good and varied selection, while another important consideration, especially where quantities are required, is that they are all very moderate in price. The whole of the Hyacinths above mentioned are single.—H. P.

EREMURI.

In raising these from seed it is doubtless a good plan up to a certain point to cultivate the seedlings in pots. It is obvious that were they grown otherwise there would be considerable danger of their fleshy roots being broken when transplanted. Then in the case of the seedlings that might be planted in the open ground, whose later removal might not be required, there would still be another objection, viz., that the young plants for a long time, four to six years, might occupy a place without decorating it by the production of their flowers, and all the while, perhaps, making their enormous roots, radiating for a long distance round the crowns and rather close to the surface, so preventing any other plants of a deep rooting character being planted near them. By growing the plants in pots until near flowering age the advantage would be that you might turn them out of their pots into the open ground, when you could almost be certain that they would flower the first year after being placed *in situ*. Now for the drawbacks. Unless you had grown these pot plants during the four or five years in very cool quarters, you might have forwarded their sprouting period a little before the normal time, which, with many of the kinds, is already known to be in the open ground rather earlier than convenient with our late frosts. Certainly, plants grown for several years under glass would be in danger of pushing too early the first spring after being turned out. However, this can be overcome with care. The next drawback would be that however regularly shifted on into larger pots, the specimens would not be so strong or vigorous at the age say of five years as they might have been in good soil in the open ground. Then there is another and the last disadvantage which I would point out. Even after

you might suppose you had given a good shift to a three or four-year-old specimen, so rapidly and so stout do the fleshy roots grow, that some day you might hear the pot go off with a loud report in the same way as big strong pots sometimes do containing the powerful roots of such plants as *Strelitzia Regina* and *Agapanthus umbellatus*. This would be very inconvenient if the plants chanced to be in full leaf. It will therefore be seen that both ways of dealing with seedlings during their long probation before bloom have their drawbacks, so much so, that the respective ways and means of given gardens should largely decide the matter, always bearing in mind that it is practically impossible to move without injury open ground plants that have been so growing for two or three years. It is not so much the bruising of the skins of the fleshy parts or the breaking off of the long whip-like points as the danger of some or all of the heavy roots being wrenched off at their junction with the crown.

J. WOOD.

THE ANTIRRHINUM.

A FRIEND who loves flowers, writing to me a few days ago, said, "My own particular pet is the Antirrhinum, which, though out of the pale of circular forms, is not without considerable pretensions to beauty, whether shown for exhibition in spikes or for grouping in masses for decorating the flower garden." That the improved forms of the Antirrhinum in cultivation at the present day are most attractive and singularly beautiful, there can be no doubt. Last year a few of the newer Scotch varieties raised and sent out by Mr. John Forbes, of Hawick, came southwards, and to one of these—George Findlay, a remarkably fine striped variety, the yellow ground handsomely marked with crimson—the Royal Horticultural Society gave an award of merit. But this was but one of the many fine named varieties raised by the Scotch florists, for though named varieties are not sought for in the south as they formerly were, they are in demand in the north, and find a ready sale; and if more of the fine named varieties raised in Scotland came southwards, and received the appreciation they so richly merit, some of the old popularity would be restored to the Antirrhinum.

I am compelled to admit that it is quite possible to obtain strains of seed of very fine quality in the south, but the finest seedlings I have yet seen, beautiful as they are, lack the superb quality of the Scotch named varieties. They are raised from seeds of the finest types, and only the very best are selected for naming, and these being of massive proportions and rare beauty, find great favour.

Of late years the Antirrhinum has greatly suffered through the severity of the winter in many parts of the country. For two winters past I have lost whole plantations of fine young plants, to all appearance capable of being brought through a severe winter in safety, but they go down before the persistence and intensity of the frost. Thus it is it has become necessary to take cuttings of the very finest types in August, or as soon as the young growths can be obtained, strike them and give them some protection, such as a cold frame or house during the winter. If the cuttings be placed round the sides of well-drained pots of light sandy soil and placed under a handlight, or have the shelter of a cold frame, they soon strike root; but it is necessary to keep them close for a time. The cuttings may be allowed to remain in the pots all the winter, or be potted singly into small pots; but if left in the stores, they so grow into large size when put out in the open early in April and flower profusely. Some growers adopt the practice of taking off the tops of the leading shoots in March, striking them in a gentle warmth. Such as these make capital plants to bloom at the end of the summer. It is marvellous how well the Antirrhinum does on old walls and such places, but when it is given good soil and careful attention, the value of the plant is very much enhanced and the magnificence of the spikes is something astonishing. Let anyone make the experiment with a half-dozen

of the finest Scotch named varieties, and, given successful culture, the results will be eminently satisfactory.

R. D.

Planting border Carnations.—"Autumn versus Spring Planting." Noticing the remarks of "E. M." (p. 231) and Mr. Young (p. 281) on this subject, I think if Mr. Molyneux layers early and plants in the autumn in good time he will have the best results, and hope he will let us hear in the autumn if his flowers are as good in substance and as abundant as those from autumn-planted. In 1891 I planted about 600 for cutting, and took the precaution to top-dress them with leaf soil to keep the frost out of the soil, but did not notice the exact number that died. Last autumn I planted 582, did not mulch them at all, and out of this number I counted but nine dead, and yet we had 26° of frost on several nights. They have grown well and look more promising than last season. I also put up a few of each sort and plunge them in ashes out of doors to fill up blanks, should any occur. Ours also is a heavy soil and the winters very wet and trying. Late layering, I fear, is the cause of many failures.—J. LAMBERT, *Powis Castle Gardens*.

Everlasting Peas.—Whilst Sweet Peas, with their perfume, easy growth and varied colours do very largely compete for favour with the Everlasting Peas, yet the latter have some special features that render them popular favourites. We have but to get roots planted and established, and there is very little trouble needed after. We can grow them also where other annual Peas will hardly thrive—on either side of doors or of garden arches, or on arbours, or against the stems of trees; indeed, almost anywhere these Everlasting Peas will usually do well. Whilst ordinarily increased by division of roots and also by the aid of seed, it is not at all difficult to further propagate them by taking off stout shoots early and inserting them into pots as cuttings. One of the most beautiful, especially because of the rich colour of the fine flowers, is *grandiflorus*, and it is perhaps the earliest. The flowers being borne in couples on long stems do admirably for cutting. It does not seem as if it had any congener, unlike to the better-known *latifolius*, of which there are several forms—white, pink, bluish, red, crimson, &c. On the whole, this is, perhaps, the strongest grower of all the *Lathyrus* family, although *rotundifolius* or *Drummondii* runs it very hard, as sometimes where it does well, this form will produce bunches or bushes of great size. I have had them measuring 6 feet through and literally a mass of reddish carmine flowers. The three forms named are, perhaps, the best for ordinary culture, although there are a few others that are worthy of cultivation as curiosities, especially *Lord Anson's* or the blue Pea. Large clumps, supported by Pea sticks, standing about in broad borders are very effective. Of *grandiflorus* I have seen long hedges in profuse bloom at Windsor about the middle of June. Cutting off the tops of the shoots and inducing new breaks help to later flowering.—A. D.

Gladioli.—In reference to "Delta's" remarks on page 300 on the *Gladiolus* in 1892, I desire to make a few remarks. I have grown *Lemoine's Gladioli* since 1882, and they never flowered with me better than in 1892, nor did I ever take up finer bulbs nor a larger quantity of fine spawn, yet I hear from Mr. Gumbleton that in the south of Ireland it was a very bad season. Our rainfall in East Anglia is considerably less than in many parts of England, much less than in the south of Ireland, and partly to that I attribute the favourable result after a somewhat cold, wet, and prolonged spring. But I should add that my corms were all planted in fresh ground, newly double dug, and in a cooler, more loamy soil than that in which I had previously grown them. Of the three causes quoted by "Delta" as possibly contributing to his failure, I, like him, disbelieve them all. I believe strongly in a change of soil as beneficial, and am not disposed to allow that what will suit the *Gladiolus* in a French soil and climate must be imitated

closely in England. Regard must be had to climatic conditions. The *Gladiolus* requires a certain amount of moisture, but that may be overdone in a rainy season, so that the soil which in East Anglia might be sufficiently cool and retentive, would in the west of England be injurious, as being too cold and wet. I had last summer individual flowers measuring 4 inches and 5 inches across. As to disease, I do not remember ever having had any experience of it among Lemoine's *Gladioli*.—ALEXANDER WALLACE, *Colchester*.

Perennial Wallflowers.—The tufted Wallflowers, as found in *Cheiranthus alpinus* or *ochroleucus*, Marshalli, Dilleni, and mutabilis, if the two last be distinct, are all charming hardy border plants to be blooming now and a little later. Yet we very seldom see them, perhaps because to perpetuate them it seems needful to keep up a stock through the aid of cuttings, growing them on through the winter in pots or else under handlights. Marshalli, with its orange-yellow clusters of flowers, is the most attractive, and is regarded as a hybrid, though that does not seem to have been satisfactorily proved. Messrs. Barr and Sons recently showed at the Drill Hall a large clump of the dark-flowered one, under the name of mutabilis, but it was apparently identical with what has been grown as Dilleni, although that may be open to doubt. Without doubt this dark form, so near the colour of the market Wallflower, and Marshalli, a fairly robust grower, are the best.—D.

SOMETHING MORE OR LESS ABOUT DAFFODILS.*

Most English people, of whatever rank of life they may be, who have a few inches of idle space at their disposal love to cultivate some kind of plant or flower. The cottage window, the town leads, the grave in the old churchyard, as well as the garden, all are made to contribute to the production of some kind of beauty. I well remember one hot May day, after a tramp along the hard high road, coming on a little bit of garden in the shade with a bunch of very fine *Narcissus poeticus recurvus* looking as fresh as paint. I stopped and had a chat with the old one-legged cobbler who was the proprietor of the garden, and bought the flowers at 1d. each. I never had seen better—I do not think now I ever see any as good—but wish, as I grow them by the thousand, that others valued them at the same rate. I have been persuaded to read a paper about the genus, and, as I am not a botanist and do not know the meaning of half the technical words those gentlemen employ, I hope the learned part of my audience will treat my paper as a Lenten penance, and will not be severe upon my ignorance.

First, then, I would speak of

THE CULTIVATION OF NARCISSI.

People who see them in perfection in florists' windows, and in a somewhat less excellent state in the streets, do not always think where they come from or whether it pays to grow them. They buy them at all prices from 2d. to 2s. a dozen, and then are astonished when they grow them at home to find that their price is increased tenfold. Now, I cannot make my paper suit all parties, as I must hurt the feelings of the bulb-sellers by some of my advice and the feelings of the buyers by another part. I would begin by saying to those with small gardens, do not plant any *Narcissi* unless you can leave them alone for three years; do not mix herbaceous with bedding-out plants; do not put spring-flowering bulbs amongst autumn-

flowering herbaceous. Plant your Daffodils as a rule among your spring-flowering shrubs and the late-flowering varieties in any place where there are no bedding-out plants, and which is in shade from eleven o'clock to four, but which has either the morning or the evening sun. To those who have more ground at their disposal I would say, remember that *Narcissi* come from all manner of altitudes and situations, and do try and give them some of the conditions under which they naturally grow. Nothing is more ridiculous than to see—what I have been doing for years—*Narcissi* from all parts growing on a flat piece of ground with water within 3 feet or 4 feet of the surface in the winter and with no protection from sun or wind when they are in flower. The beautiful small varieties are best grown in rockeries made in imitation of Nature, with a good solid bottom, plenty of drainage and plenty of soil, and not a contract abomination, which is nothing but a rubbish heap and a breeding place for snails. On the west coast of England and Scotland, and south of the Thames, a well-made rockwork, with good soil composed of loam, leaf-mould, and sharp sand, covered with *Narcissus nanus*, minor, minimus, triandrus, and *Bulbocodium* varieties, *rupicola*, *juncifolius*, *moschatus*, and *cyclamineus*, would be a thing of beauty. But, as far as my experience goes, on the east coast, in a colder climate, and wet in the autumn and winter, such an experiment is only a loss of money, labour, time, and temper. With the larger varieties, learn which like heavy soils and which light ones; and even more than this, learn which varieties resent being taken liberties with and those which do not so much mind rough treatment. Two years ago I was taking up my bulbs for planting in a new place to get the varieties for comparison more together, and it came on to rain for a fortnight. Instead of waiting till another year for a favourable opportunity I went on; the new roots had grown some inches, and four or five valuable varieties so resented this treatment that practically I have lost them. The period during which bulbs are at rest in a wet summer is very short, if indeed there is any such period at all. I would now say a word to those who force *Narcissi*, that is, who grow them in pots under protection for decoration. With the commoner sorts do not be at the trouble of saving the bulbs, but with the more valuable varieties keep them growing on under protection after they have flowered, and do not put them out of doors till the end of May or the beginning of June. Almost invariably they will rot if you do. Knowing very little what to say on this subject, I wrote to a friend asking for suggestions, and he said that competition in flower-growing was so keen now-a-days, that all practical knowledge gained by experience must be reserved to earn one's own living. My advice to the general public who do not want their flowers on roots is, buy more liberally, and if a few join together to buy wholesale in Covent Garden Market, they will help the growers to get a better price. I pass on to

THE CHOICE OF SORTS,

and I would remind you here that you do not want to pick out the flowers you like best at a show, or to order them out of a catalogue with your Tulips and Hyacinths, and then grumble at your gardener if they are not everything you expected. Many of the old and cheapest varieties are among the most beautiful and useful; some of the new and very expensive varieties are quite hardy and worth all they cost to an appreciative purchaser. But think of soil and situation and gardener before you

purchase. Plant the cheaper sorts of the different classes to find out if the situation is suitable, and then acquire the rarer varieties of those which grow the best. If possible, find a nurseryman with a soil similar to your own and see the plants in flower there before you order them, and even then do not pass your judgment on what you see unless they have been grown for more than one year on that particular ground. Soil has much to do with the variation of colour, and sand, especially if there is any iron in it, alters the colour of the cups, especially in the incomparabilis and Leedsii sections. For early use the *spurius* are the best of the trumpet varieties, together with Queen Bess of the incomparabilis type. Then follow Emperor and Empress with thirty or forty varieties, between which there is little to choose in point of earliness and which suit some one soil and some another. The early *poeticus* and their progeny come in at the same time, and the whippers-in are the late *poeticus* and *gracilis*. I am not going to crack up any new varieties or to advise you to get any particular variety by name. Some bulb-grower or retailer would be down on me with the accusation of making someone else the most favoured nation, or perhaps accusing me of undue preference on account of some unknown bribe. I have often wished that in collections of hardy flowers—especially of Daffodils—shown here, the position where grown, north or south of London, east or west of Greenwich, height as regards sea-level, drainage, with any special atmospheric or climatic characteristics, should be given, as they have a great deal to do with the growth of plants, size of flowers, &c.; and I do abominate the superfluous multiplication of so-called varieties and the consequent squeezing of the purse of a non-discriminating public. Climate and soil alter the character of *Narcissi* to a great extent, but a couple of years will suffice for them to return to what they originally were. How far a sport may become fixed as regards its offsets, I am not in a position to say. After some ten years' experience I can say that I have never known a sport from a bulb, and I am inclined to think that so-called sports have been seedlings which have been mixed unconsciously with the bulbs, or have been in the ground where the offsets were planted. And this brings me to another point,

THE HYBRIDISATION OF NARCISSI.

If anyone for amusement takes up this work, he should do it well, or he will not be helping science, and will get very little recompense for his labour. The necessary implements are as follows: a note-book, a pair of fine scissors, a camel's-hair brush with a glass tube to hold the same, and some labels. The method of working is to go out into the garden at seven or eight o'clock in the morning and select flowers which are just opening; cut off the ends of the perianth and all the anthers. When you have done as many as you want for that day, go in to breakfast; come out again at ten or half-past, collect the pollen for your cross in your camel's-hair brush, put it in the glass tube to prevent the wind blowing it off, fertilise your chosen flower, put a label to it numbered, and in your book record the number and the cross. Before using the pollen from another variety clean your brush by knocking and blowing the pollen off, and wipe the tube out with a bit of cotton wool. The most successful days for hybridisation are dry, sunny ones with no wind. Natural hybridisation must be among varieties which open at the same time, but artificial may be done between plants raised under protection and those out of doors; or if carefully done the pollen may be placed in dry tubes,

* Paper read before the Royal Horticultural Society by the Rev. G. P. Haydon, April 12, 1892.

corked up and kept for a week or ten days. I have obtained seed supposed to be from such fertilisation, but as the seedlings have not yet flowered, the fertilisation may have been by the wind after the attempted trial. If you wish to be successful, make the same cross with at least a dozen flowers, as seeding is not always brought to perfection. Then the question comes in, What kind of crosses should one attempt? I believe for beginners it is the best to take natural species and to make the cross both ways, keeping a record of each, so as to see which produces the best results. But I find that out of doors, unless under very favourable circumstances, it is very hard to get seed. I advise people to abstain from using muticus for a cross either way, as well as all species which have secondary flowers of an imperfect or varying character. The difficulty of obtaining seed from many of the beautiful hybrids is very great. During nine years' observations with from 50 to 150 varieties, and from 5000 to 50,000 bulbs, I have only in two summers saved seed from anything besides pseudo-Narcissus, muticus, spurius, princeps, and poeticus. In other seasons the seed-pods withered and came to nothing in June. When seed has been produced my advice is to sow it at once in deep pans and cover it with a quarter of an inch of soil; keep it in a frame in the shade, protected from rain, till the end of October or the beginning of November; then sink the pans in the ground and protect sufficiently to prevent the pans being split by the frost. Do not shift the bulbs till they have had two seasons' growth, and, if you live in a cold climate, three. You will find that the bulbs will have sunk quite half-way down a 5-inch deep pan. The average number of years before flowering with me is five, so that a considerable amount of patience is required. I hope that more people will try the raising of new varieties, as the oft-repeated failures of the many will cause the success of the few to be better appreciated. Nothing increases the value of anything so much as realising the difficulty of getting it. Another point about the Narcissus, from a grower's point of view, is, by what general characteristics are we to classify the newly raised varieties? In judging the merits of those exhibited before this society, I believe size, colour, shape, and constitution are all taken into consideration. Now I think size ought to be relative to some original form, colour to some class, shape to some ideal, and constitution to some special hardness or adaptability to climatic circumstances. Flowers for exhibition should be grown naturally, not forced open by immersion in steam, nor highly coloured by being watered with dyes. We can scarcely tell the proper effect of Narcissi when got up for show. We see the flowers shown staged in a bundle, all faces turned to a certain focus, and the foliage obscured. Many a beautiful outdoor flower is unsuitable for house decoration, and many Narcissi that are useful for decoration are ungainly when seen growing. Again, we must remember that many varieties suitable for the private garden are unsuitable for market. As, for instance, the Burbidgei type—the most beautifully coloured of its race, but so fragile and tender that the flower is often crushed by its own weight in the bed, and if sent to market it is reduced to a shapeless pulp. I do wish that more people came to the Royal Horticultural Society exhibitions, and that they would learn to discriminate between the sorts of Narcissus shown. They would not then go to a florist's shop and pay the same price for the commonest varieties and the more valuable.

The labourer is supposed to be worthy of his hire, but the Daffodil grower has often to live at a loss. Something ought to be said about the

ENEMIES AND DISEASES OF THE NARCISSUS, as well as the diseases the bulb is liable to, and the remedies to be applied. The only special enemy I know is the *Merodon equestris*, which is in appearance like a small bumble-bee. How it lays its eggs I cannot tell you, for if I see one, or any fly like one, I promptly kill it. I also destroy every chrysalis or larva I come across. When you take up your bulbs you cannot always tell which are infested with the larvæ, but if they are allowed to get somewhat dry, the infested bulbs are much softer when pinched. If it is a common sort I destroy the bulb and insect by first cutting it in half and then burning it, but if it is a valuable bulb I cut open one side of the bulb, pick out the insect, wash the bulb out with a small syringe, using a solution of Fir-tree oil or Condyl's fluid, and then shake in some dry slaked lime. Even if the insect has eaten out the centre of the bulb, new bulblets will often form between the layers of the bulb and the top of the crown of the root. I have killed as many as fourteen or fifteen larvæ in a consignment of a thousand bulbs, and have found two chrysalids in a bag with only two or three bulbs in, though the bulbs themselves were sound. This shows how careful we should be to burn the packing which plants, &c., come in. The Narcissus mite I believe to be not a cause, but the result of a disease. As to diseases, rust is the greatest enemy to fear, and what brings rust is a disputed point. I can only speak of my own experience, and I believe that rust is sometimes caused by a superfluous amount of moisture in the bulb, which may come in different ways. In a cold, damp soil, where the bulb has laid up a great amount of uncarbonised sap and has evaporated none while at rest, if prevented from starting into growth, or checked in its growth, or taken up after it has begun to make new roots, it often develops this fungus, and how to cure it I cannot say. I have peeled the diseased layers of the bulb off and scraped the fungus out of the root-crown, then put the bulb into dry slaked lime, let it get dry for a day, and then replanted it. In many cases this has been quite successful, e.g., with maximus and with Leedsi amabilis, but, alas! it was of no use in the case of cernuus, double cernuus, and Colleen Bawn, and I mourn their loss to the present day.

COLLECTION OF WILD SPECIES.

Ought there not to be some law or regulation as to this? Those who know many beautiful spots in the British Isles which are thrown open to the public realise year by year what a destructive animal the tourist is. Ferns, Orchids, and bulbs are dug up and carried off from the desire of acquisition, annexation, or theft, whichever word you like to use. Some of them are thrown away by the robber because they look dead or are too much trouble to carry home, while others are planted where they have not the slightest chance of living. Few survive their ill-treatment. In other places nearer large centres of population, sturdy beggars dig up Fern and flower roots to fill cheap wire baskets, which they sell at an enormous profit, earning an easy livelihood without work. And if this happens at home, people may guess what happens in other countries. I suppose that landlords in Spain, France, Switzerland, and Italy love their wild flowers as much as we do in England, and yet I believe many a person who reviles the tourist who steals the Parsley Fern

from Snowdon, and who would imprison the tramp who steals the Primrose roots from his hedgerow or his coppice, would poach with an easy conscience the rare Narcissus from the hill-side of a foreign proprietor. I think that plant collectors at home and abroad should be compelled to have a licence like a game licence, and, like that, it should not protect them when trespassing. If the propagation of rare species were the work of the market gardener instead of the collection of a beefeater plunderer, it would be better for the world in general. I should like to see the old rule as to English feasting applied to many other things. Enjoy as much as you can, but do not pocket anything. There is a vast difference between the collection of plants in a tropical jungle, which belongs to no one in particular, and the removal of them in a civilised country from ground which is the recognised property of someone.

Sand for cuttings.—Although it is very well known that cuttings of all descriptions of soft-wooded plants that root quickly will do so freely in sand alone, yet I have seldom seen the method more fully tested than is the case at the Swiss Nursery, Farnham, where Mr. Mortimer roots thousands of Fuchsia cuttings yearly in the spring in boxes filled with common sand, and that alone. It is not, however, pit sand so used, but surface sand from the common, fairly clean, sharp, and sweet, but which, all the same, appears to have incorporated with it considerable fertility, for not only do cuttings root in it most freely, but they also make good growth; indeed, quite as robust as would be found were soil added to the extent of one-half. I observed that these boxes, which stand along the margins of the side beds in a Cucumber house, each contained eighty cuttings, not too thickly placed, but having so much room, that within a month from the time of insertion they are rooted, have made some 2 inches or 3 inches of growth, and from the sand are, when somewhat hardened, carefully lifted with every root attached, and in that condition sent out in Moss to customers. The system is simple enough, and may be easily followed in private gardens. What is so remarkable also is that because of the extreme facility with which roots become attached to the sand, any plants that have been lifted and replaced seem none the worse for the disturbance. That sand which has been fully exposed to the influence of the air and rain, as this is, is so much better fitted for mixing with plant soils or for use to root cuttings there can be no doubt, and howsoever untidy may be the appearance of a heap of pit sand shot down out in a yard, and allowed to lie about and be frequently moved, there can be no doubt but that it at once loses much sourness and crudeness, whilst also it gains much in fertility through exposure to the air.—A. D.

FLORAL DECORATIONS FOR FIREPLACES.

WITH the return of summer we may soon hope to do without fires in our drawing-rooms, and then comes the important question of how to make our fireplaces beautiful. The methods by which this may be accomplished are many and various, but no more pleasing effects can be obtained than by the use of natural flowers, foliage, and grasses. To anyone with even a small amount of artistic taste there will be no difficulty in making an arrangement of this kind one of the most attractive features of the room. The first requisite is a suitable vessel to hold the water. A large preserved ginger jar answers admirably, though almost any kind of china flower-pot, provided it has a flat base, would do equally well. If the pot is of any decided colour it must, of course, be hidden by overhanging foliage, &c., so that it may not clash with the flowers. The water must be changed at least every other day during the summer months, and the pot or jar should be frequently washed

out with hot soda and water. This will prevent any unpleasant odour arising from decaying stalks or leaves. It will also be found an advantage to cut off a small portion of the ends of the stalks both before the flowers, &c., are first put into the water and whenever they show signs of decay. Attention to these two simple matters (changing the water and cutting the stalks) is most important if we want flowers to keep for any length of time. Both flowers and foliage should be cut with as long stems as possible in the first place; they can easily be shortened to the right length afterwards. One of the first and best of flowers for fireplaces is the Laburnum. Three or four well-flowered branches of this beautiful tree will be found sufficient for an ordinary sized fireplace. For foliage nothing is better than Copper Beech, with a few fronds of common hardy Fern. This combination is one of the loveliest possible; it is effective, and both flowers and foliage last well. The popular striped Grass (*Eulalia japonica*) or Bamboo branches could be added according to the taste of the decorator. The Red and White Hawthorns also make a showy arrangement, and either of them might be used in conjunction with Laburnum. The variegated Acer looks well with red May, and indeed with any coloured flowers. For hiding pots or hanging loosely, the small-leaved Ivies are always useful. Another effective flower is the German Iris. The darker colours should, as a rule, be avoided. The pale and golden yellows, primrose, lilac, pale lavender, and white varieties will give results in every way satisfactory. With these use Iris foliage and Glyceria or pond Grass; Bulrushes, too, would look well. With Foxgloves nothing is better than plenty of wild Grass and hardy Ferns, and a very charming effect can be obtained with these wild flowers. Syringa and Weigela rosea form a light and pretty combination, but the former has a drawback in that it drops rather quickly. The Guelder Rose is open to the same objection, except when the flowers are very young. Hardy Azaleas and Rhododendrons are showy, but the latter require rather careful managing.

L. H.

FERNS.

FERNS IN AND FOR THE HOUSE.

SOME Ferns are much better adapted to this purpose than others. If the tenderer ones are so used, it is not because those which are hardier are not plentiful enough, for in most cases the latter are more easily grown, and can also be bought more cheaply. Nor can it be said that the hardier ones are any the less beautiful on the whole than their more delicate relations. Oftentimes it is not, however, the plants themselves that are at fault, but rather the treatment which has been accorded them. For instance, if they have been grown on rapidly in too much heat and moisture, it must not cause any surprise if they do not fail to give that amount of satisfaction which might otherwise be expected from them. If looked at from a natural point of view, it is only rational that they should fail. Take note as a case in point in private gardens. The Ferns are frequently deemed of secondary or lesser importance, even being allotted positions where even Geraniums would not be stood. These positions may be where too much shade is imparted or where too far removed from the glass, both evils working out the same result, viz., a weakly and attenuated growth with less substance in the fronds. These plants cannot, of course, be expected to do good service in a dry atmosphere or where the circulation of air is at times sharp and keenly perceptible, nor do they individually recommend their particular genera and species to favourable notice. As a contrast, I have just lately been taking note of the growth of some plants of the decorative

forms of *Pteris*; the greater portion of these has stood in a single line along the front of a Peach house, the front lights of which open and are about 2½ feet in depth. Here these plants are fully exposed to the sun every day in an upright direction, the growth being both robust and dense, giving just the impression of durable material for the purposes now under consideration, with, of course, a little hardening off, which of itself is not nearly enough considered, more particularly at this season of the year with the growth none too hard. The other plants are in another house and further removed from the glass; consequently more in the shade, because the roof is covered with climbers. Here the same kinds of Ferns do not thrive so well, yet some might prefer the position as the better of the two for Ferns through fear of too much sunshine in the former instance. It may answer all very well as far as appearance goes for the time being to grow Ferns in a humid atmosphere and shady house, so long as they are not required to rough it, in a manner of speaking, in other positions not so congenial to them. Thus eventually it is the plants that have to bear the blame, or else the place in which they are placed.

Another detriment to Ferns in and for the house is that of overpotting, which is for such purposes a great mistake. A good head of fronds upon a plant with plenty of roots working through all the soil has much the better chance of resisting effectually any change of or an unfavourable position. Instead of overpotting, let the work be done thoroughly well when it is done, potting firmly, at the same time using the soil of as good a quality as it can be obtained. If the work of potting is done loosely, the roots rarely take kindly to the surface soil, the result being that this becomes sour or is washed out of the pot in watering.

By good soil I do not mean that which is rich or incentive to a rank growth; too much peat or leaf soil or artificial or other manures would each have this tendency, whilst loam has not. In most cases I would use a proportion of peat, one-third to two-thirds of loam with sand in addition being a good ratio. But some may say, why not employ manurial stimulants, using as an argument in their favour that trade growers do so? To such my reply is that the two objects in view are widely divergent. Those who grow for sale wish naturally to push along their plants as quickly as possible, and that in as presentable a condition as can be attained, but this does not represent durability afterwards. The proper place for and use of such incentives to growth are when the plants have become pot-bound. Their use then is commendable, and is a means of saving the overpotting previously discouraged. Of course plants that have filled their pots with roots take more water, but this is the very thing we like to see them do in subjects of this description. If a plant will not take water so frequently as it should do, it is a sure indication of something being wrong, the results of which will quickly follow. It surely should not be any trouble to give a little closer attention to watering in such cases. When Ferns that are more pot-bound than usual are used in the house, it is a good plan to safeguard any contingency of injury from drought by placing a saucer under the pot; whilst if the pot stands in a vase or jardinière, some Moss around it and upon the surface is another good protection to the roots. Another assistance to Ferns at such times is that of watering them with rain water as contrasted with that which is hard. If standing in the front of or close to a window, it is not the sunshine which will do the plants

so much harm as sharp currents of air. For instance, if the window be thrown widely open, it is better to remove the plants to another part, or drop them down upon the floor for the time being. Where gas is the lighting medium, there is rather more risk of injury; but the plants, if removed to a good distance from the lights, will scarcely feel the effects of it.

The following may be taken as a good selection of Ferns for the purposes under discussion. Of the Maiden-hairs, *A. cuneatum* is still the most reliable. Of other forms of *Adiantum*, *A. pubescens*, although a very old variety, is yet one of the best. The *Aspleniums* supply several useful varieties, *A. bulbiferum*, *A. dimorphum*, *A. laxum pumilum* and *A. lucidum* being all good kinds. *Cyrtomium falcatum* is one of the hardiest. Of the *Davallias*, *D. canariensis* and *D. Mariesi* are two of the best. *Lastrea patens* and *Phlebodium aureum* are both hardy Ferns. *Nephrolepis pectinata* and *N. tuberosa* are the best of this genus. *Nipholobus lingua* is a very hardy and enduring Fern. The *Pteris* family provides us with several of the best for the purpose; these embrace the forms of *P. cretica* (c. nobilis and c. Mayi being two of the finest) and of *P. serulata* (s. cristata and s. cristata compacta being chosen); whilst *P. tremula*, with its increasing forms, deserves especial notice. Of Ferns not so reliable are the many forms of *Adiantum*, more especially those with the larger pinnae, comprising chiefly the stove kinds. The *Aspleniums*, which require heat, are not reliable, nor are the same, on the whole, of the *Davallias*. The *Cheilanthes*, the *Lomarias*, the *Gymnogrammas*, most of the *Nephrolepis* and the hothouse forms of the *Pteris* family will not in either case withstand adverse treatment so well as many other kinds.

FILICES.

Maiden-hair Fern planted out.—Calling on the Messrs. Drover at their Fareham Nursery the other day, I saw a very fine batch of Maiden-hair Fern growing in a shallow border on both sides of a span-roofed plant house, from which an enormous number of fronds had been gathered since it had occupied its present position—a year. The sides of the house were of the usual brick pit character employed for Cucumber growing. These had been filled up to within a couple of inches of the top of the retaining wall and cemented over. The plants were turned out of their pots, the base reduced and stood on the cement base, with but 2 inches of loamy soil filled in about the roots, a little more being employed about the ball of each; between the plants there is but a depth of 2 inches of soil. The plants are standing rather thickly together; the fronds being kept hard picked, much space is not required. Abundance of water is supplied to the roots, the plants also being liberally fed, a warm and moist atmosphere being kept up. The plants are within 18 inches of the glass and appear to enjoy their somewhat peculiar position. —E.

Hardy Ferns for rooms.—Many of the hardy Ferns are quite as well adapted for room decoration as the greenhouse kinds commonly grown for that purpose. Such beautiful varieties as the Welsh Hard Fern (*Polypodium vulgare cambricum*) and the Crested Male Fern (*Lastrea Filix-mas cristata*) are quite equal in beauty to most of the Ferns that require to be cultivated under glass throughout the year. The *Scolopendriums*, *Polypodiums*, some of the *Lastreas*, and *Polystichums* are evergreen if merely protected from the vicissitudes of our winter climate. For corridors, entrance halls, and similar places where cold draughts of air are apt to come and where the temperature will sometimes fall to freezing point, these hardy Ferns are much more suitable than greenhouse kinds. For rooms where a fire is seldom used through the winter months I know of few things

better. They bear without injury the cold draughts of air that window plants are frequently exposed to, and which are fatal to anything that has an element of tenderness in it. Many a window now bare in the winter season might with but little trouble and expense be made pleasant in this way. During the summer months the plants can be stood in the open air in a cool, shady place, and be brought in again at the close of the autumn. For window decoration in towns I consider these evergreen hardy Ferns to be of the greatest value, and much more satisfactory than many things grown for the purpose.—J. C., *Byfleet*.

SHORT NOTES.—FERNS.

Adiantum velutinum ("A Traveller in South America").—This is the name of your stouter and more robust Fern marked B. It was introduced to our gardens some twenty-five years ago by M. Linden, of Brussels. It is a bold growing handsome Fern.—W. H. G.

Adiantum hirtum.—I am in receipt of specimens, which I take to be those of this species, from "A Traveller in South America." To the best of my belief it is quite new as a garden plant. It is very pretty, closely branched, the pinnae very long, the pinnules closely set, very even, and the stem quite hairy. W.

Crested Pteris (W. N. Shurman). These are remarkable and very beautiful seedlings, Nos. 1 and 2 being worth particular attention. No. 3 is of larger growth. I have seen similar, but they are, nevertheless, well deserving attention. The two *Aspleniums* I should like to see again, and the *Adiantum* also, either pressed out flat or in a fresh state.—G.

Lindsæa guianensis ("A Traveller in South America"). This, your specimen marked C, is widely distributed in the region you seem to have travelled in. It belongs to a family which is difficult to cultivate. I have had the species growing several times, but I do not think it at the present time could be found in the country, and I do not think you are likely to succeed with spores.—W. H. G.

Pellaea bella.—A. Johnson sends me a frond from California for a name, which I give above. This seems to me such a rare plant, that I must make a note of it. It is a very neat and pretty species, having bipinnate fronds, somewhat hard in texture, and about a foot in height. It is not a new Fern, for some few years ago this species was imported by the Messrs. Veitch, of Chelsea, but I do not know if they still possess it.—G.

Cheilanthes farinosa.—Fine fronds of this plant come from the Messrs. Birkenhead, of Sale, who tell me the spores were sent them from India for C. Dalhousiae, but, as far as I know the latter species, it only differs from *farinosa* in being destitute of farina. *C. farinosa* is a beautiful plant, growing 2 feet and upwards in height with broadly deltoid fronds, which are several times divided, the upper side rich bright green, below thickly covered with a white farinaceous powder.—W.

Pyrus cardinalis is a form of *P. japonica* but quite one of the best things that we have seen of late amongst shrubs. It was shown at the meeting of the Royal Horticultural Society on April 11 by Mr. Anthony Waterer, and in the garden makes a splendid feature. The flowers are not only of large size and full rounded form, but the colour is striking, deep cardinal-rose, which glows like fire in the sunlight. A large bush is a brilliant picture of vivid colour, set off by the tender green leafage, the flowers crowding the shoots. It is a shrub that we should say would become popular in English gardens.

Chinese Snowball Tree (*Viburnum plicatum*) under glass makes an attractive feature at this season of the year, and in a not too warm house the shrub will bloom quite early. If in a pot it may be made good use of for decoration, but will succeed well also planted out in the conservatory border. The flowers may not be so large as those in the open, but they are produced just as freely, every branch carrying a bunch of the white flower-heads on the stiff shoots. The leafage is distinct,

deep green, wrinkled, and in rich contrast to the masses of bloom. In the open few things are finer in the season than this shrub, which is quite hardy except perhaps in the coldest spots. It likes a warm soil, but it is not fastidious, and should be planted also in distinct beds on the turf, as in the Royal Gardens, Kew, where large beds on either side of the walk leading from the Palm house to the river give colour to the place in the summer.

ORCHIDS.

DENDROBIUM JENKINSI.

A NICE specimen of this upon a block of wood comes to me from Manchester from Mr. Crawford, and which I have returned as directed. I had not seen this Orchid for some years, although at one time I used to grow it in quantity. It was first made known to us nearly sixty years ago by a Capt. Jenkins, who found it growing in large masses upon the trees in the forests about Gualpara, in Assam. Since that time it has been found in other parts of India, and although it appears to be common in India, it does not gain much favour with our Orchid growers. Another plant, *Vanda Jenkinsi*, was found by this same Capt. Jenkins. This, which I have not seen for years, I have never seen flower. If any of my readers should happen to have the species in bloom, a flower would be most acceptable. *Dendrobium Jenkinsi* is a dense creeping species, clothing the stems on which it grows as thickly as Ivy. The small pseudo-bulbs grow only about an inch long, and they bear a small solitary leathery leaf, so that the whole plant does not rise more than 2 inches from the rhizome. The flowers, either singly or in pairs and freely produced, are each nearly 2 inches across, the colour being rich golden yellow with a deep orange-coloured lip, which contrasts well with the deep metallic green of the pseudo-bulbs and leaves. This plant does best upon a good-sized block of wood of an enduring kind. A bare block appears to suit it best, although when first put upon it a little Sphagnum Moss should be fastened with it; this assists in retaining moisture until the plant gets established. It should be hung up near the roof glass, freely exposed to the sun and light, in the East Indian house, shading lightly only during the hottest part of the day and maintaining a nice moist atmosphere. After growth is finished the block or blocks should be removed to the Cattleya house and but very little water given, and during the winter I would hang the plants in a light position at the warmest end of the Odontoglossum house, from whence they may be taken when the flowers begin to show. From this time the plants will require more attention in the matter of watering. Do not wet the flowers, and be sure and let them remain in the same temperature and the same atmosphere in which they open, when they will last quite a fortnight in perfection. I like to grow this plant rapidly in the East Indian house in preference to the Cattleya house, because if properly rested it seems to flower more regularly and more freely.

WILLIAM HUGH GOWER.

Dendrobium cheltenhamense.—Two flowers under this name come from Mr. Cypher, of Cheltenham. He says it is a hybrid between *D. luteolum* and *D. aureum*, but he does not tell me who was the raiser, and I had not heard of it before. It certainly is a very beautiful flower, with an agreeable perfume. Each flower measures $2\frac{1}{2}$ inches

across, the sepals and petals nearly equal, half an inch wide, thick and fleshy in texture and primrose-yellow in colour. The lip, nearly as long as the petals, is primrose-yellow, but the greater portion of its surface is bright orange-yellow, having a few radiating streaks of deep crimson, the edges prettily frilled. To the best of my knowledge I think this is the first hybrid that has been obtained from *D. luteolum*, and I shall be glad to know something more about it.—G.

Vanda tricolor Seegeræ.—The firm of Seeger and Tropp, in Lordship Lane, Dulwich, have a fine lot of imported Vandas from quite a new district. The fact of their flowering as small plants will probably do more to induce growers to again take up the cultivation of Vandas than anything else, especially as now they have been found to thrive well in a low temperature through the winter months. The variety here mentioned is a charming flower, having broad round sepals and petals, the latter only reflexing in a small degree. They are thick and waxy in texture, with a ground colour of creamy white, profusely spotted and streaked with cinnamon-brown, and a faint tinge of rose round the margin, lip broad and flat, front lobe deep rosy purple at the base, the tip lilac. It is one of the prettiest of the many varieties of this plant that I have seen.—G.

Odontoglossums from Sydenham.—From Mr. Dorman, of Laurie Park, comes a fine consignment of this genus, mostly consisting of natural hybrids. These flowers, although mostly narrower in the sepals and petals than those of the kinds which we look upon as original species, are yet beautifully spotted, and the plants bloom more freely, I think, than their supposed parents. The flowers now before me are mostly forms of *O. Andersonianum* and *O. Ruckerianum*, and some of them are exquisite. No. 1 is a variety called *ornatum*, having a white ground very much and regularly spotted with medium-sized blotches of bright chestnut. No. 2 is very pretty and nicely marked. Nos. 3 and 5 are two very handsome varieties both well deserving names. No. 4 is called *O. crispum Scottianum*, and it shows distinctly that *O. luteo-purpureum* was one of its parents. The sepals and petals are nearly equal, the latter toothed on the edges. They have a yellowish ground, boldly spotted and blotched with dark chestnut. One pure white flower, profusely spotted with chestnut, was remarkably handsome. Mr. Dorman grows these plants remarkably well, and many fine and new varieties have originated from his collection.—W. H.

Vanda tricolor Rohaniana.—This is a strong growing variety, which was named by Reichenbach. It is a very fine form, the petals of which turn quite round with age, thus bringing the china-white of the outside distinctly to view. The whole flower of the plant in question is very massive, ground colour of the sepals and petals buff-yellow, thickly spotted and blotched with reddish brown, which, however, terminates within the margin and leaves a broad border of buff-yellow; lip broad, slightly recurved, deep rosy crimson at the base, becoming paler in front. The flowers of this variety sent me by Mr. Seeger, of Lordship Lane, Dulwich, remind one very much of those of *V. tricolor planilabris*, but they are much richer and brighter in colour.—W. H. G.

Dendrobium thyrsiflorum Walkerianum (*C. Henshaw*).—Although it has been said that this species blooms later in the season, I think this month and the next may be looked upon as its normal flowering season. I saw it blooming last month in Mr. Williams' collection, and now I have a fine raceme of the variety come to hand from "C. H." splendidly packed, so that it came out of the box quite perfect, scarcely a flower being injured. I only know this variety from the typical plant by the greater length of the spike and the somewhat larger flowers. The raceme before me is about 16 inches long and many-flowered, the flowers each measuring from 2 inches to $2\frac{1}{2}$ inches across, the sepals and petals being of the purest white, the downy lip deep orange-yellow. I

am told this plant has nine of its pendent trusses still upon it, proving that it is one of the most beautiful plants introduced from Burmah by the Messrs. Low, of Clapton. A figure of the type appeared in *THE GARDEN*, Vol. XXX., tab. 574.—W.

SHORT NOTES.—ORCHIDS.

Dendrobium thyrsiflorum.—I send you a photograph of the above plant which I now have in flower with twenty-five blooms upon it, many of which are exactly 12 inches long. The plant had thirty-nine buds upon it, but my gardener, thinking this number was more than the plant would stand, cut off fourteen, thus leaving twenty-five, which are now in full beauty.—W. A. MILNER, *Totley Hall, Sheffield.*

Dendrobium rhodostoma.—A bunch of flowers of this pretty Veitchian hybrid also comes from Mr. Cypher, Cheltenham. He says the plant has many such bunches on it at the present time, and it is nearly always in bloom. The flowers, which are white, with the tips of all the segments purplish crimson, and on the disc of the lip a broad patch of golden yellow, are very bright and handsome.—W.

Vanda cœrulescens.—I am asked by J. Mansell, who sends some flowers of this species, if it is not a very curious time for it to bloom. I see nothing so very remarkable in the occurrence; in fact, I had when with Messrs. Rollisson and Sons, of Tooting some forty or fifty plants, all of which flowered towards the end of January. These had been imported the autumn previously, so that there was perhaps some reason for their blooming so early. The end of May and beginning of June may be looked upon as the usual flowering season. The blooms sent represent a very dark coloured variety.—W. H. G.

ROSE GARDEN.

LILIES V. ROSES.

I MUST apologise for delaying so long to reply to Mr. J. C. Grahame's letter on this subject, which appeared in your issue of March 4. It is a pleasure to be handled by so courteous and able a critic as Mr. Grahame, one who grows Lilies equally with Roses, and I will confess at the outset that, as regards fragrance and lasting, my sentence, "The Rose is gone in twenty-four hours," was incorrect. When I wrote I was thinking of Hybrid Perpetuals and forgot Tea Roses. I do not go so far as Mr. Grahame, but I will admit that Tea Roses, if cut in bud, keep good for three days as regards fragrance and colour, nor do I want in any way to disparage the Rose and its culture, but rather to claim for the Lily an equal regard, all the more because in the soils where Roses can be successfully grown many Lilies will do well. As regards Lilies taking a back seat, I may ask, where are the special shows at which the Lily is honoured like the Rose? Where is the National Lily Society? Not yet in existence. The Narcissus, the Chrysanthemum, the Rose, the Orchid, and other plants all claim special honours, nay even conferences; none have yet been accorded the Lily. I do not remember one horticultural exhibition at which Lilies have been specially to the front. Again, I may ask, how many new Lilies have been raised by growers? The new Lily hybrids may be counted on the fingers. How many new Roses, new Chrysanthemums, new Narcissi, Gladioli, nay even Orchids, are annually brought under our notice? Does not this tend to prove my proposition that Lilies take a back seat? Yet, if you compare the original existing types of Lilies, Roses, Chrysanthemums, &c., unimproved by man's hands, the verdict for colour, grace, fragrance and variety would, I think, be given to Lilies.

Here, then, is a wide field for future hybridisers. As usual, in this respect the Japanese are to the front. Their new hybrid Uke-uri, which, anglicised, is Hookey's Lily (uri being Japanese for Lily), or Lilium Hookeyi, said to be a cross between speciosum and longiflorum, is a very robust promising variety. It throws up a strong growth with reddish brown stem and shoot like those of speciosum, though the bulb, very distinct in character, has more of the longiflorum about it. If the large white flowers are anything like the Japanese drawings, it will prove a great favourite. I hear, too, from America of some very promising seedlings with *L. excelsum* as one of the parents, and there were a *Lilium Parkmanni* and *L. Melpomene* hybrids and perhaps a few more; but compare these isolated attempts at improvement on the original type with what has been and is being done for the Rose, *Gladiolus*, *Chrysanthemum*, &c.; it is nothing. Why is this? We ransack the world for new Lilies, but we do not create new forms at home.

Mr. Grahame asks for a Lily to compare in colour with *Maréchal Niel*. I think *Lilium Parryi* would do so.

As regards pot culture, like Mr. Grahame I would never advocate it where Lilies can be grown to perfection in the open ground; but it is just where this cannot be done that pot culture comes in for my favourites. I could not hope here in my small, dry town garden to grow Lilies successfully, except, perhaps, *L. longiflorum*, but my pot Lilies are superb. I have this year twenty kinds in pots, and hope to have a grand display with *Browni*, *odorum*, *auratum*, *rubro-vittatum*, *Hookeyi*, *Henryi*, *sulphureum*, *formosanum*, and various varieties of *speciosum*. These few special pets at home, grown to perfection and daily admired, give me far more pleasure than the larger quantities grown in my garden outside the town and visited less frequently. I can linger lovingly over the few, while I hurry over the many.

ALEXANDER WALLACE.

Colchester.

A fine new hybrid Clematis.—The current number of the *Paris Revue Horticole* gives a coloured plate of one of the most beautiful and distinctly coloured forms of these useful and most free-blooming hardy trailers I have ever seen, which should be a great and most desirable acquisition to all collectors of hardy climbing plants. It is named *Mme. Edouard André*, and made its first appearance in public last year at the June show of the Horticultural Society of Tours, where it attracted general admiration. It is said to differ from most, if not all, other varieties approaching it in colour by having for its parents *C. patens* and *C. Jackmanni*, instead of *C. Viticella* and *C. Jackmanni*, as the others have. It certainly better deserves the name of a really red-flowered Clematis than any other variety I have ever seen, and is said to be perfectly hardy. The colour is described in the accompanying letterpress as "a fine deep carmine-red, shaded with vermilion and infused with violet." A number of plants of this fine novelty have been sent to the World's Fair at Chicago, and it is now being sent out by M. Baron-Viellard, nurseryman at Orleans, Loiret, France.—W. E. GUMBLETON.

A useful box.—I have had boxes in use the past ten years which I have found very handy and convenient for all purposes. They were made originally for sprouting early Potatoes in, and can be placed one above another up to the ceiling. They can be carried with ease, being 2 feet 6 inches long, 15 inches broad, 3 inches deep, and made of $\frac{1}{2}$ -inch board, the end pieces being 1 inch thick and $\frac{1}{2}$ inches deep, with handle holes. For

sowing seeds and pricking out plants, these boxes are altogether more economical than small pots. I have had them many times swung up near the glass in the greenhouse. In frames they may be filled with Strawberry plants and kept near the glass, Mushrooms coming on underneath. They are also handy for carrying small pots, plants, &c., and in planting Potatoes the boxes are taken into the field and the sprouted Potatoes planted directly out of them. Afterwards when cleaned their place is in the fruit room or cellar, and this is where they are particularly serviceable, as you may store with safety a quantity of fruit in a small space; each box containing one layer of choice Pears or late Apples.—E. W. B.

GARDEN FLORA.

PLATE 907.

CONE-FLOWERS.

(WITH A COLOURED PLATE OR *RUDBECKIA PURPUREA*.)

WE are largely, indeed almost wholly, indebted to North America for the fine displays we are enabled to enjoy in the open air during the late summer and autumn months. Sunflowers, Michaelmas Daisies, Silphiums, Rudbeckias, and a whole host of other composites are all available for our flower borders at this time, and if treated well they will always give the desired return. A good mixed border is one of the most delightful and interesting spots in a garden, and as these Cone-flowers bloom all through the summer and early autumn, they will be found almost indispensable for this purpose. *R. laciniata*, *occidentalis*, *maxima*, *californica*, and others are attractive on account of their massive foliage as well as on account of their flowers. They are, however, rather coarser growing than the other species mentioned, and unless the border be a large one they will hardly be wanted.

All the Rudbeckias are hardy, and may be readily increased by division.

R. BICOLOR, a hardy annual, is well worth a place in the border, where its numerous full yellow flowers are very striking.

R. HIRTA is a biennial, somewhat resembling *R. speciosa*, but taller and coarser. It is, however, a useful border plant and stands fairly severe winters well. Its flowers are golden yellow. Native of Texas and the warmer parts of North America.

R. PURPUREA, a coloured plate of which accompanies these notes, is a very old garden plant, well known to Linnæus and Miller, and holding an honoured place in the first number of the *Botanical Magazine*. Dr. Gray, in "Synoptical Flora of North America," places it in the genus *Echinacea* along with *angustifolia*; but the old name of *Rudbeckia* has been retained in the "Genera Plantarum," and is, perhaps, the commonest in gardens at the present time. It is, however, often met with under the specific name of *serotina*, although the above is the correct one. In the *Botanical Magazine* it is stated that this species differs from all the others in having purple pendulous petals. This is not quite correct, as *R. atro-rubens*, *triloba* and *fulgida* are all more or less so, the first especially, which has dark purple flowers. Miller appears to have considered *R. purpurea* tender, although I have never found it so; it is, however, a gross feeder and requires strong, rich soil to keep it in good condition. As shown in the plate, which was drawn from a large group in the rock garden at Kew, it is certainly one of the most beautiful of the genus, and the reason of its scarcity, or one

* Drawn for THE GARDEN in the Royal Gardens, Kew, by Gertrude Hamilton, August 20, 1892. Lithographed and printed by Guillaume Severeys.



may say unpopularity, is that it requires more attention and good cultivation than any of the others, excepting *R. maxima*. It is a true perennial and makes a handsome border plant, and, when it flowers freely, it is always attractive. The best way to increase it is by seeds, my experience being that it does not like being disturbed much. It flowers in July and August. Native of North America.

R. SPECIOSA, or *R. Newmanni*, as it is often called, is by far the best of the dwarf species. It is an exceedingly free-flowering plant, and is now largely used in beds and for grouping in herbaceous borders. Unlike many of the other species, it may be increased to almost any extent by division, which will always be best done in spring just as growth commences. It rarely exceeds 1½ feet to 2 feet in height, producing numerous flowers of a rich golden yellow. It flowers in summer, and is a native of moist, rich ground in Michigan, Arkansas, &c. In a note Dr. Gray says it has long been cultivated in gardens as *R. fulgida*, a species I have only twice seen alive.

R. SUB-TOMENTOSA, although an old plant, is by no means common in gardens, and I believe its reintroduction is due to the Rev. W. Dod, of Malpas. It is a somewhat straggling branching species 2 feet to 5 feet high, nearly allied to *R. triloba*. The flowers, not large, though numerous and showy, are yellow. Native of North America.

Glasgow.

D. DEWAR.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

BROCCOLI.—Even if the Broccoli crop may have failed this season in some gardens, the cultivator should not be deterred from trying again. The first week in May is quite early enough to raise the plants. For the seed bed select an open position, the soil also being in a fairly fertile state and also well worked. Draw the drills at least 15 inches apart, and if the ground should be lumpy, scatter some old potting soil over the seeds, this ensuring an even germination and tending to keep away fly.

MAIN-CROP BEET.—The ground where this is to be sown will have been got into a well-pulverised state by early digging, the site selected being one which has not been recently manured, this having a tendency to cause the roots to become forked. A dressing of burnt refuse and soot and a little salt lightly sprinkled over the surface are very beneficial. If the weather should happen to be dry at the time of seed-sowing, draw the drills over-night and moisten them, at the same time putting the seeds in to soak. The drills should be drawn 15 inches apart and about 2 inches in depth. If the soil is loose, lightly and evenly tread the surface previous to drawing the drills.

CARDOONS.—Cardoons must have very generous treatment, as if not, the grower will be only rewarded for his pains with plants running to flower-stem, when, of course, they would be quite useless. There are two methods of raising the plants, either in pots or sowing direct in the open. The former is adapted for cold soils, but care must be taken that the plants are not allowed to become stunted or pot-bound before being planted. When raised in pots, place two or three seeds in a 4-inch pot, thinning the seedlings out to one. The pots are best placed on a half-spent hotbed, keeping the soil fairly moist. Cardoons should be planted out in a trench prepared as for Celery, as during a dry time they will take plentiful supplies of water and occasionally liquid manure. For sowing in the open, prepare a trench, working in abundance of manure and filling up with fertile soil. If the soil is cold, bring the trenches almost up to the level. Place two or three seeds together at intervals of 18 inches or 2 feet, afterwards thinning out the plants to one, a distance of 2 feet or 3 feet apart, as the case may be, being left between each.

SALSAFY AND SCORZONERA.—To succeed with these two useful winter vegetables, a good light and fertile soil, devoid of recent additions of solid manure, is essential. Too early sowing must also be guarded against. The end of the first week in May or even a few days later is early enough for sowing. If the soil is not sufficiently deep and fertile, the best course is to prepare trenches, which should be taken out 15 inches or 18 inches in depth. Over the bottom spread a layer of manure to the depth of 4 inches and fill up with old and sandy potting soil. Considering that a row of each is sufficient for most establishments, the extra trouble entailed to secure clean roots is well expended.

CHICORY OR WITLOOF.—As a winter and spring salad, when properly blanched, the above is now well known. An article calling attention to the merits of the true Brussels Witloof was recently published in *THE GARDEN*. The preparation of the plants must now receive attention, so that there will be a supply of roots available for both salad and cooking when the time comes. Any good fertile soil will grow the roots. Drills should be drawn 18 inches or even 2 feet apart, the seeds being sown thinly, afterwards thinning out to a foot apart. An occasional hoeing to keep down weeds until the plants make a fair start will be all the attention needed.

A. YOUNG.

HARDY FRUITS.

APRICOTS.—The very severe frosts experienced during the week ending April 15 did but little damage to the fruit, thanks in many cases to a good covering of foliage, as well as the usual protection in the shape of blinds and nets. So heavily set with fruit are the trees, that there must be no further delay in thinning the crops very freely, or all will be much below the average in point of size and quality. If the green fruits are put to a good use, then the thinning after the first severe lightening of crop may well be done piecemeal. It need hardly be added that only the fruit best placed for swelling to its full size should be reserved, in particular leaving none near to the nails and short dead spurs, if any. There ought to be no further need for protection, and the fish nets should certainly be taken down if they were not originally fixed well clear of the trees or if caterpillars are troublesome. Birds appear to have done good service in clearing these pests from trees to which they have free access, as only the trees under fish nets are infested by the caterpillars of the winter and magpie moths. The former are small and will be found enclosed in the leaves on which they are feeding, and which also afford them good protection. All things considered, the simplest way of getting rid of both kinds of caterpillars is to crush them where they are, this being done at the same time the thinning out of the fruit and stopping of the shoots are being attended to. If the glass is kept fixed over the trees, this will forward the fruit and promote an early ripening of the wood to a considerable distance down the wall, but the trees ought to be syringed freely with clear water about 4 p.m. on clear days, or otherwise red spider will be in the ascendant.

PEACHES AND NECTARINES.—These again passed through a very trying ordeal satisfactorily, all the trees being well furnished with fruit. Thinning out ought, therefore, to be freely resorted to at once, that is, if not already done, those reserved being cleared at the same time of dead flowers where these are matted together or cannot be got rid of by the aid of a syringe or engine and clear water. Cold winds constantly playing on the early formed leaves have caused many of them to "blister" badly, and these great fleshy leaves should be kept picked off, as they evidently cannot perform their proper functions, and left on do more harm than good. Green-fly is also more troublesome than it was last season. Strong insecticides must not be employed against these or other insect pests, as they are liable to damage the skins of the fruit. In many instances the

worst infested shoots may be pulled off the trees and destroyed, and a free use of soapy water, applied with a syringe or garden engine will usually keep the rest of the tree clean. Should this not be sufficient, then boil 4 ozs. of Quassia chips in 1 gallon of water for not less than one hour; in this dissolve 2 ozs. of soft soap, strain and dilute with 3 gallons of soft water, and syringe every part of the infested trees with this. This being done over-night, syringe the trees heavily with clear water the next morning, and then dust newly-slaked lime freely over the surface of the ground to complete the destruction of the aphides, or otherwise many of them will revive and return to their former quarters. Tobacco powder well driven into the infested points and syringed off the next morning is the best remedy for the more tenacious and very injurious black-fly. Freely syringing the trees at about 5 p.m. on warm days and then running down or opening out the blinds will serve to keep the trees growing freely, also forwarding the fruit considerably.

PLUMS.—These flowered very abundantly, and in some sites either the flowers or newly-set fruit have escaped destruction by frosts. The dead flowers, when allowed to hang about the trees, serve as good hiding-places for caterpillars, and all, therefore, that cannot be syringed off should be removed by hand. Where the fruit has set freely, and in most instances the crops will either be exceptionally heavy or far too light, the thinning out should be commenced early, completing this work when the Plums are large enough for making into pies or preserves. Thinning out the young shoots ought also to be persevered with. Some few are needed for the purpose of extension, filling in blank spaces, and for covering or taking the place of naked stems, and for these purposes side and leading shoots should be reserved to their full length. The short and apparently stunted shoots will, if left alone, beyond thinning to a distance of about 3 inches apart on each side of the branch, flower freely next season, these being known as natural fruiting spurs. Other shoots that are growing strongly and not required for furnishing should be stopped at the fourth or fifth leaf. It should be remembered that the flowers on spurs growing straight out from the trees are the most liable to be injured by frosts, and not many of these spurs should be allowed to form. Aphid attacks, the Plum aphid being particularly troublesome, should be kept in check in the same way as advised in the case of infested Peach trees.

PEARS.—This season the trees bloomed more strongly than usual, and the fruit on early-flowering trees set in great bunches. Especially is this the case with Josephine de Malines, Knight's Monarch, Glou Morceau, Doyenné du Comice, Beurré d'Amanlis, Passe Colmar, and Winter Nelis. No heavy rains having fallen, the flower-petals are still clinging to the fruit, and caterpillars have taken advantage of this covering. Especially is this the case where the fruit is in great bunches, and in addition to heavily syringing the trees in order to clear them of rubbish, thinning out the fruit ought also to commence at once. Three or four fruits in a bunch are enough to leave at present, the final thinning being deferred till it is seen which are the most perfectly formed and to what extent frosts have injured the crop. As yet only protected trees seem to be infested with caterpillars, and unless the attack is severe, crushing them is the safest and best remedy. Trees in the open have fared badly, frosts completely spoiling the flowers and buds. Young trained trees, whether against walls or in the open, may well have the side shoots thinned out, all other than those required for furnishing wall or trellis space being pinched back to the fourth or fifth leaf.

W. IGGULDEN.

ORCHIDS.

THE continued warm and dry weather has caused a good deal of watering and damping down in the houses. The shading has also been a very easy matter, as it has merely been run down when the sun had raised the temperature sufficiently, and

seldom required removing again until the sun began to decline. The cool house has required plenty of water to be sprinkled on the paths and under the stages, and the front ventilators to be shut, in order that the drying effects of east winds should not tell upon the plants. Amongst other useful Orchids now opening their flowers the evergreen *Calanthes* hold a good position. The pure white *C. veratrifolia* is the oldest and best of the evergreen species—in fact, it was the first *Calanthe* introduced into England. The plants are not grown now much better than they used to be when the plant was figured for the first time in the *Botanical Register* from a specimen grown by Mr. Colvill in his hothouse at Chelsea; it had three spikes from one growth, and these each attained a height of 3 feet. When a large specimen like this is obtained it makes a very handsome plant, and will last in flower for nearly two months. As a guide to cultivators, it may be desirable to say that in New South Wales where the plant grows naturally it is found near the banks of streams growing in loose decayed vegetable matter. We grow our plants in loam, leaf-mould, and decayed manure, with a little sand added. The plants, especially at this season, ought not to be allowed to get over-dry at the roots. It is a good time to repot them as soon as they pass out of bloom. *C. masuca* is an allied evergreen species which does not seem to do quite so well under cultivation. It should be placed with *C. veratrifolia* on the shady side of the Cattleya house, not too near the roof glass. *Calanthe Dominii*, raised between *C. masuca* and *C. furcata*, seems to have almost passed out of cultivation. *C. furcata* differs from *C. veratrifolia* merely in the larger size of the lateral lobes of the lip. *C. Dominii* is an interesting plant, if for no other reason except that it was the first hybrid Orchid flowered in England; the seed was obtained in 1851 and the first plant flowered in 1856. This plant requires the same treatment as the others. The finest plant I ever saw of it, or perhaps the finest ever seen, was grown in the collection of Sir Trevor Lawrence, Bart., Burford Lodge. Both the parents flower in May, but the progeny flowered for the first time in October. By freely watering and not giving too much heat, the plants may be kept in good health, except that they are liable to the attacks of two parasites, viz., yellow aphids and the brown scale. The former gets in amongst the flowers and ruins them; tobacco smoke will destroy it, while the brown scale gets upon the undersides of the leaves, and at this time of the year spreads with amazing rapidity. This scale passes through the winter in the form of prominent round balls attached to the undersides of the leaves. These balls contain what appears to be white dust, but which is in reality the germs of the scale. These should be removed in the winter or early spring, and if the leaves are washed underneath at the same time, the pest is crippled for the season. With these *Calanthes* we grow the *Anguloas*, such as *A. Clowesi*, *A. Ruckeri*, and *A. uniflora superba*. They make rather large leaves, and take up too much room in the opinion of some, but the flowers are so distinct and beautiful, that few Orchid growers like to be without them. Our plants of *A. Clowesi* have flowered rather early this year; some of the blooms are even now showing evident signs of decay.

Both the spotted and unspotted forms of *Cymbidium eburneum* have flowered grandly this year, but the last blooms have been removed, and I intend this week to repot the plants. *C. Mastersi*, which flowers in the early winter, should also be repotted when the blooming period is over. They all do best with the treatment given to the evergreen *Calanthes*. Those who are fortunate in having plants of *Cymbidium Parishii* will find them do well planted in peat and sphagnum, growing them in the temperature of the East India house. I wrote of the culture of *Phajus Humbloti* last year, and recommended its being grown in the warmest house, as it is a native of the interior of Madagascar. The general consensus of opinion of the best growers, including the importers, Messrs. Sander and Co., was that a high temperature must be best; but calling the other day to look at the collection

of Orchids belonging to Mr. N. C. Cookson, of Oakwood, Wylam-on-Tyne, I found Mr. Murray, the able gardener there, had removed his plants of this species one after the other into a shady part of the Cattleya house, owing to their failing to do well in the warmest house. Mr. Murray has also found that *Cypripedium Chamberlaini*, of which there are a number of very fine plants, succeeds best in the Cattleya house. I had up till now grown the plants of this in the warmest house, and they certainly have not grown so freely as I expected; they will now be placed in a shady part of the Cattleya house, and this is also the coolest part of it. We have yet much to learn of the various details of Orchid culture, and I have also by constant observation noted this fact, that an Orchid may succeed best in the Cattleya house in a dry hot season like the present, but it would do better in the warmest house if the season happened to be wet and cold. Others, again, it matters not what house they are placed in, will after a certain number of years get into a declining state, from which the most skilful culture or the most assiduous attention fails to rescue them. In some instances the gardener is blamed, although he may all the time be doing his very best to succeed. During hot dry weather the best way to water some Orchids is to give them a good syringing overhead. We have a group of *Vanda coerulea* in a light corner of the warmest house, and they have been freely syringed and look all the better for it. This species seems to do very well in the Cattleya house for three or four years after it has been imported, but it gradually shows signs of waning vigour after that, and I found on transferring the plants to the warmest houses that they made better growth with this syringing occasionally in dry hot weather, watering freely all the summer. The plants should be kept rather dry at the roots during the winter.

We have to be on the alert for sudden changes of the weather. A few nights ago I walked two miles after 8 p.m., and the air felt quite warm at that time, but a sudden change came in the night, and Fahrenheit's thermometer registered 7° of frost. I have on previous occasions urged the importance of studying the atmosphere when banking up the fires at 10 p.m., and this is the season when the greatest care is really needed.

J. DOUGLAS.

PLANT HOUSES.

AGAVES, YUCCAS, &c.—POTTING AND GENERAL NOTES.—The potting of these succulent plants is in private establishments an oft-deferred matter; true they are in this respect a most patient class of subjects to deal with, but if the work be not attended to with some regard to the needs of the plants, they must inevitably suffer in the end. I know that Agaves are frequently considered encumbrances whilst under glass, but outside in the flower garden as vase plants during the summer, hardly anyone will dispute their ornamental character. Any necessary work, therefore, to such as these may very well be attended to now. In any case where potting or tubbing is seen to be a necessary part of the work, it is better to face it at once. Where it is not possible to enlarge the limit at the roots, the balls must be carefully reduced so as to admit of fresh soil when the existing state of the roots and soil demand it. With care this may be done without any harm to the plants. What between the use of a knife for the roots and a stick to probe out some of the soil, it will be possible to provide room enough for fresh soil. Considering that no further potting will be thought of for a few years, the soil should be of the very best description, using the most fibrous loam and peat that can be obtained with some lime rubble, charcoal of the size of nuts downwards, and silver sand freely, the peat and loam being in about equal parts. The soil should during the process of potting be made as firm as possible by means of sticks, taking care not to injure the foliage. In the event of the plants being dry at the roots, it will be better to water them the

day previous to potting. Wherever a shift can be conveniently given, it should certainly be entertained, and in any case where suckers are issuing forth, they should be taken off as carefully as possible, so as not to injure the parent stem. The slightest amount of protection now will suffice; a temporary covering at night would be ample. As to potting, the same remarks apply to Yuccas as well as the soil used, unless peat is scarce; then more loam will answer almost as well. If any of these are getting too tall, they may be cut down and then be potted in small pots, treating them similarly to Pine suckers, with bottom-heat, careful watering, &c., until re-established. Bonaparteas, Aloes, Dasyliroids, &c., come under the same course of treatment as the Agaves, save that I would prefer to keep them in the greenhouse for the present. Echeverias, as represented by *E. metallica*, *E. glauca metallica* and *E. agavoides*, are all fine ornamental plants for pot culture and well repay for extra care. Some of these may stand in need of a shift also; if so, the same soil will suit, minus the peat, bearing in mind that large pots are not needed. That most useful variety, *Echeveria retusa*, should not escape notice as a flowering plant; it is surprising that it is not taken in hand more for purposes of decoration, being easily had in flower from Christmas to the end of March by forwarding the earlier and retarding the later plants. Cuttings of this variety should be put in now, a good plan being to insert three cuttings in a 4½-inch pot, shifting once later on into 6-inch pots. A shelf in a cool house or a frame will answer for propagation, guarding against too much moisture. *Roechea falcata* is another neglected plant which may be struck from offsets now in the same manner; these, if well cared for, would flower next year in August and September. Young plants may stand in need of a shift; if so, it had better be attended to at once, keeping them where no shade falls upon them. The *Kalosanthes*, unless it is desirable to forward them for early flowering in June, may now be kept in a cool frame, or if driven for room there, the open air will suit very well provided frosts are guarded against. These plants will now commence to grow in earnest; weak applications of manure water will, therefore, assist them considerably. All the sunshine possible should be secured for these, both to ensure a sturdy growth and good colour in the flowers. Young plants that do not give signs of flowering will make good material for another season by giving them one shift, which should be attended to as soon as practicable.

The Cacti in any quantity are not frequently met with now in private gardens; they are nevertheless most serviceable conservatory plants. Such, for instance, as *Cactus speciosissimus* and other varieties and species with large showy flowers always make a good display. The several lovely hybrids, many of which are of a more compact habit of growth than the above-named variety, should not be omitted. Any necessary work in the way of potting, staking, &c., should be attended to now, for by potting thus early in the season one has the advantage of the entire summer for after growth, the pots being filled with roots before the winter sets in. The *Epiphyllums* will in some cases no doubt need attention also; if the plants have been during the past month or two in a growing atmosphere, they will be fit for potting at once or a little later on if kept in a cooler house. It is not well to pot whilst the plants have a tender young growth upon them. A close atmosphere for a little time after potting will greatly aid the plants in perfecting their growths. In all of the foregoing cases relating to succulents it must be further stated that top-dressing would in many instances be an assistance to the plants, more particularly if the soil has in a measure been washed out of the pots, top-dressing only being resorted to when repotting is not deemed expedient.

SEED-SOWING.—Those who want *Primula sinensis* of good size to flower early should set about sowing the seed at once. As to the raising of the seed, there are different plans. About now I prefer a genial heat, as that to be had in a forcing pit with

Cucumbers or Melons coming on. Covering with glass is a good plan, so is that with brown paper, tying the latter around the sides of the pans and watering the paper only. Another is to cover the soil with Sphagnum Moss which can be moistened as required. Both in the case of the brown paper and the Moss, however, a daily watch must be kept for germination to prevent any drawing of the young plants. The real thing is to observe closely that neither the seed nor the soil should ever become dry; there is a disposition sometimes to be afraid of over-watering, but this is not so bad as the other extreme. Leaf soil and a little loam with some sand will suit well, or, failing the first, use cocoa fibre refuse instead, which one of our best Primula growers recommends. Primula obconica should also be sown in good time; the seed does not always germinate well, a second sowing being frequently necessary to secure a good stock of plants. This will now germinate very well in a close frame, using soil, &c., as in the case of *P. sinensis*, watching closely when the seed is germinating against devouring insects.

JAS. HUDSON.

BOOKS.

OBSERVATIONS ON INJURIOUS INSECTS.*

AGAIN we have to notice one of Miss Ormerod's annual reports on injurious insects. This is now the sixteenth consecutive year in which these reports have been published, and though last year no particularly new pest made its appearance, and none of the ordinary ones were in remarkable profusion, this report does not in any way fall short of its predecessors in general interest, and is full of instructive matter; it forms a pamphlet of 167 pages, so it is of just the same size within a few pages of the previous report. Seventeen different kinds of crops are mentioned as having suffered from the attacks of thirty insects, three mites, and one fungus; all these have been noticed in reports of other years except five insects and one eelworm. The authoress says in her preface that last year "was remarkable for most of the insect infestations commonly injurious to field crops and fruit being present to such an extent, as to cause inquiry as to their nature and methods of prevention, but for the most part as not affecting large districts to a serious extent." Amongst such crop attacks as were more especially prevalent and injurious were those of the leaf-eating Pea weevils, the caterpillars of the silver or gamma moth, the hop string maggot, the corn aphid. The diamond bush moth's presence was widely noticed, "but compared to the outbreak of 1891, little caterpillar attack followed, so that serious damage only occurred locally, not as a widespread scourge." Miss Ormerod mentions "that there has also been an unusual amount of application from British residents in the colonies regarding infestations on colonial crop produce." This does not interest the English agriculturist or horticulturist except that he may feel a certain amount of comfort in knowing that he is not worse off in this respect than his fellow labourers in other parts of the world. A graceful tribute is paid to the memory of Professor J. O. Westwood, who was in his prime one of our foremost entomologists not only from a systematic, but from an economic point of view. There are three beetles mentioned in this report for the first time: the Cabbage-stem weevil (*Baridius spec.*), the pigmy Mangold beetle (*Atomaria linearis*), and the Strawberry leaf beetle (*Galezua tenella*). The first of these, the Cabbage-stem weevil, was noticed last year in "that most distressful country," Ireland, where in County Wexford its maggots caused much injury to young Cabbage plants by boring into their stems. The beetles which have hibernated lay their eggs in the axils of the leaves or on the

stems, and the maggots make their way into the centre of the stems, which they almost entirely destroy, leaving nothing but a mass of "crumbly matter." The maggots or grubs undergo their transformation within the stems. The only practical method of dealing with this insect appears to be to pull up and burn any infested plants. This insect is very small, and only measures about two-tenths of an inch in length. The pigmy Mangold beetle attacks the roots of the Mangolds, and though a very minute beetle—measuring only about the twenty-fourth of an inch in length—it appears in such numbers as to cause serious injury by gnawing the tap-roots and also the collar of the plants. The beetles vary in colour from rusty red to black. One observer mistook them for ants. At present the only remedy suggested which seems likely to be of any use is a strong solution of nitrate of soda applied to the roots, which will assist them in their efforts to withstand the attacks of the enemy and probably render the roots distasteful to the beetles and their grubs, which are supposed to feed much in the same manner as their parents.

The Strawberry leaf beetle was observed for the first time as a pest on Strawberry plants last year in Hampshire, or rather it is the grubs which injure the plants by gnawing holes in the leaves and by eating away large portions of their outer skins. Not much can be done while the fruit remains ungathered, but after the crop is gathered it is recommended that a strong dressing, such as Fisher Hobbs mixture, or hellebore, should be used. The clouded yellow butterfly (*Colias edusa*) is "scheduled" for the first time as an injurious insect. It seems hardly necessary to have included this insect in the list; no doubt it appears in great abundance once in every few years, but it is seldom that many are seen in two successive years. Last year they were very common, but I think 1877 was the previous occasion in which they were in anything like profusion. In that year they were much more plentiful than they were last summer, so that, speaking from what has hitherto happened in connection with this insect, it is by no means probable that it should really prove to be an "injurious insect" in this country. It is one of our most beautiful butterflies, and is so interesting from its only occasional appearance, that one would be very sorry to find that any attempt had been made to exterminate it.

The frosted orange moth, though a very common insect is noticed for the first time in these reports as being a pest to plants in cultivation. Last season its caterpillars were found boring the stems of Potato plants. That portion of the shoot which was above where the caterpillar was at work of course withered and died, "drooping as if they had been cut or broken." The best means of destroying this insect appears to be to cut off each of the infested stems below where the caterpillar is at work and burn them.

It has long been known that certain gall-like swellings on the roots of various plants were caused by eelworms, but it was only last year that Miss Ormerod had the matter brought prominently before her by the injury the eelworms were causing to the roots of Tomatoes and Cucumbers. This eelworm, which is nearly allied to those which cause "Clover sickness," "Tulip root in Oats," or "Cockles in the ears of Wheat," rejoices in the scientific name of *Heterodera radiciicola*. The male is about one-twentieth of an inch in length. The female at a certain point in her development ceases to be worm-like in appearance, and becomes somewhat pear-shaped in form, and eventually is nothing but a bag of eggs. A photograph of the roots of a Tomato is given, which shows very well the way in which the roots become distorted. In America and on the Continent where plants growing out of doors are subjected to the attacks of the eelworm, it seems almost impossible to rid the soil of this pest when once it becomes infested, but in this country where it is usually plants grown under glass which are attacked it ought not to be by any means impossible to stamp it out. All the plants infested and the soil in which they grow should be burnt. A plan

is suggested of growing among the crop plants which the eelworms are known to be particularly partial to, in order to draw the latter from the crop, but I cannot fancy this will prove of much use.

Of the insects mentioned in previous reports, nothing of much importance is recorded. Why the death's-head moth should find a place in this report and two figures be given of it besides one of the caterpillar is unexplained, except that Miss Ormerod appears to have had an unusually fine specimen sent her, which she thinks ought to be recorded. She should have sent the particulars to one of the entomological magazines, and if the editor had thought it worth notice he would have recorded it. But the record is of no value and out of place in this report. The death's-head moth is a comparatively rare insect, and does not occur in sufficient numbers to cause any appreciable damage.

Several pages are devoted to the various foes which attack the roots of Turnips and Cabbages, and the differences between them are clearly pointed out. The disease known as "finger and toe," "anbury," or "club-root" is perhaps as often as not attributed to the attacks of insects, and proof is afforded that this is the case by the various grubs and other insects commonly found on the affected roots; but, as is well known among persons who study these things, the disease is caused by a fungus, and the insects find in the inequalities of the often decaying roots suitable food and shelter. There is more than one kind of insect which injures the roots of Turnips and Cabbages. The Turnip gall weevil (*Ceutorhynchus sulcicollis*), whose grubs form galls on the roots varying in size up to that of a Hazel nut. The grubs of certain two-winged flies belonging to the genus *Anthomyia* feed on the roots of Cabbages, Turnips, but they are in no way the cause of clubbing. It is unfortunate that the name of "finger and toe" should have been given to this disease, as it appears that the true "finger and toe" is when Turnips are grown on unmanured ground several years in succession, or on very poor soil, they then having a tendency to revert to their uncultivated habit of growth with several roots. Two very good photographs are given of "clubbed" Cabbage roots and one of a Turnip root. Full details are given of how this disease may be prevented. When once a root is infested nothing can be done to save it. A short appendix is given on Mangolds. These reports would be much pleasanter reading if such words and expressions were omitted as "leafage" for foliage, "galled roots" meaning roots with galls on them, not roots which have been rubbed or chafed; "home crop infestations," "trap plants," "crop plants," "insect attack." On page 125 in the case of Strawberry plants being attacked by the Strawberry beetle, "Fisher Hobbs" mixture is recommended, but instead of at once quoting the page on which its composition may be found, the reader is referred to the index. It would have been just as easy to write, see page 96, as see index, and the reader would have been saved trouble. The form that Miss Ormerod uses is a trifle shorter, but the authoress apparently never thinks of brevity; for instance, "with regard to the capacity of the caterpillars for appropriating their food plants to their own service" might have read, with regard to the appetite of the caterpillars. G. S. S.

ONIONS FOR PROFIT.*

THERE are numerous successful market growers in this country, especially within carting distance of the metropolis, but I very much question if any one of them could put his experience in Onion culture into such an instructive and readable form as the author of this handy book has done. Evidently Mr. Greiner is a most practical man and thoroughly master of the subject. Although the treatise extends over 100 pages of letter-press and

* "Report of Observations on Injurious Insects during the year 1892." Sixteenth Report. By Eleanor A. Ormerod. Simpkin, Marshall & Co. 1892.

* "Onions for Profit." By T. Greiner. W. Atlee Burpee and Co., Philadelphia, U.S.A.

illustrations, it is written in such a racy, yet most plainly instructive style, that the reader or learner will not find it in the least wearisome or overdone. Not a detail is wanting nor a point lost for want of an illustration, there being no less than fifty-four woodcuts distributed through the book. The author plainly shows how to grow from 600 bushels to 1000 bushels of Onions per acre, and gives sound advice upon the harvesting, storing, and marketing these to the best advantage. He does not convey the impression that anyone who may decide to commence Onion culture on a large scale has only to follow his instructions to make a fortune in a very short time, but, on the contrary, advises beginners not to attempt to "reap practical experience by the acre or acres." That he considers an expensive method of getting experience. His advice to novices is to begin with a little patch at first, and to enlarge the area when enough experience has been gained to render it a safe proceeding. He is particularly severe on the "know-all" young men, and all who are constantly going from one thing to another, these failing, as a matter of course, to succeed well with any of the branches of the profession they try for a short time only.

Soils generally are commented on, and their preparation discussed. Naturally the preference is given to a free-working deep brown loam, while any quarters that are full of weeds and soil that is stony or gravelly is objected to, weeds making Onion culture expensive, while the stones and gravel cannot be economically cultivated with the labour-saving machines for which our American contemporaries are noted. A very free use of manure plays an important part in the author's success with Onions, and the references to its use, though comparatively brief, are most instructive. He is a great advocate for an extensive application of the very best mixed farmyard manure procurable, this to be in a thoroughly rotten state. With regard to this part of the subject we will let the author speak for himself.

But let us make no mistake concerning the quantity needed. A thousand bushels of Onions cannot be manufactured out of half-a-dozen loads of such manure, unless the land is already well provided with humus. Nothing less than sixty loads, each load containing a plump ton or more, will answer, and soils that are poor in organic matter may require considerably more to give best results. By all means be liberal. People accustomed to the methods employed by the average farmer in feeding (or rather starving) the ordinary crops are apt to be afraid of hurting Onions by excessive manure applications. Put your mind at ease. The more you fill the soil with good compost, the more will the proceeds from the crop fill your pocket.

Not content with this heavy dressing ploughed in, other fertilisers, such as ashes, bone-meal, phosphates, potash, and nitrate salts, are also considered almost indispensable. The author invariably applies from 225 lbs. to 300 lbs. of nitrate of soda per acre in three dressings, the first being given shortly after the seed is sown or the plants set.

After a brief description of the common practice of sowing the seed where the Onions are to mature, and which it appears was never deviated from by himself or market growers generally up to about four years ago, the author next enlarges upon what he is pleased to term a new system. This he has previously detailed in a little treatise entitled "The New Onion Culture," and which is simply a modification of that now for many years adopted in this country by growers of "spring-sown" Onions for exhibition. Instead of sowing the seed in the open ground early in March, it is sown rather earlier in gentle heat under glass. Forcing houses are a rather expensive adjunct in America, and various makeshifts in the way of heated pits and frames are resorted to for the purpose of raising the requisite number of plants. It is of importance that these seedlings be not raised too thickly, and when it is stated that fully 150,000 of them are required for an acre of ground, it will be seen that a fair amount of space must be devoted to them for a time. They ought to be fairly strong when planted out or fully three-sixteenths of an inch in diameter at the

bottom, and must of necessity be well hardened off before being exposed to the risks of severe spring frosts. The plan of freely shortening the tops and trimming the roots of these small plants is strongly advocated, and with good reason too, as thus treated they are more readily planted, also more quickly recover from the check of transplanting than is the case when not trimmed. Dribbling out such large numbers of plants might at first be thought a rather great undertaking, but by very simple contrivances the lines are marked out expeditiously, and it has been found that twelve experienced men are equal to the work of putting out in one day sufficient plants to cover an acre of ground, the rows being 12 inches apart and the plants from 2 inches to 3 inches asunder in the rows, according to the variety. Much importance is attached to having them set out thus thickly in the rows, as by no other system can such enormous crops be obtained. The White Spanish types of Onions are preferred for the "new" method of culture, Prizetaker, White Victoria and other improved strains fast superseding Danver's Yellow, Yellow Globe, and Yellow Strasbourg. Much of the surface cultivation and cleaning between the rows is done by the aid of single and double wheel hoes, more of which very handy contrivances ought to be introduced into this country than are in use at present. They are easily and most expeditiously worked by hand-power, and can be utilised for a variety of purposes, thanks to the different fittings supplied with them. Even for hand-weeding and which cannot be avoided, the author gives illustrations of five different handy tools, everything being done to lessen the cost of labour—always a serious item in America.

When the "enemies of the crop" come to be discussed, the author is scarcely so happy as in the rest of the book. For instance, most of his remedies for the Onion maggot are purely conjectural. We are all agreed that prevention is better than cure, a change of site for Onion beds being one of the preventive measures that ought always to be tried where this enemy is troublesome. It is very doubtful, however, if lime water made by slaking a peck of fresh lime in 100 gallons of water or liquid manure and duly poured about the plants is equal to destroying every larva it touches. I should certainly have more faith in the alternative remedy of one tablespoonful of muriate of potash, or two tablespoonfuls of kainit to each gallon of water, these fertilisers being destructive to insect life.

In the chapter headed "The Reward" are given various useful hints upon marketing and storing the crops after they have been properly harvested, and then what are apparently very fair estimates as to the cost and returns are given. The total expenses, including the rent of land (one acre), manures, labour generally, marketing, &c., are put at 295 dollars, and the receipts, putting the crop at 1000 bushels, at 1 dollar, less freight, commission, &c., 800 dollars, the net profits being therefore 505 dollars, or, roughly speaking, £105. The cost by the old method (sowing in the open) is put at 191 dollars, and the receipts, 600 bushels being the crop sold at 60 cents, 360 dollars, this leaving a net profit of 169 dollars, or about £35, per acre. This great gain in favour of the new system is to be partly attributed to the increased value of the produce, the Onions, early raised and transplanted, maturing much more satisfactorily than do those sown in the open, that is to say, grown on the old plan. So they do in this country, and market growers will do well to give the plan advocated in "Onions for Profit" a fair trial.

W. I.

The Malmaison Carnations are being given attention to by Mr. Martin Smith, Hayes Common, Beckenham, and several varieties recently raised show that we shall get in time considerable diversity of colours in this section. The variety Princess May, given an award of merit at the meeting of the Royal Horticultural Society on April 11 last, is a very fine flower, large, full, and

of a decided crimson colour, but showing a scarlet tinge also. The flowers are broad and have a sweet fragrance. We hope that in the future the fact will not be lost sight of that fragrance is one of the most precious attributes of the Carnation, whether of the Malmaison type or any other. Another good seedling is Lord Wolseley, which has scarlet flowers of very large size, but not coarse, and, again, the delicate clove fragrance is present. Sir Evelyn Wood is a variety of very distinct colour, salmon-rose, the flowers large, full, and very double, also sweetly scented. This trio adds greatly to the importance of the Malmaison Carnation as a garden flower, but there is yet plenty of room for more varieties of good, distinct and decided colours.

KITCHEN GARDEN.

VEGETABLE MARROWS.

THIS is one of those crops which, given ordinary treatment, will in the generality of seasons give good returns, especially in the smaller gardens where a succession of the choicer kinds of vegetables cannot be grown. Vegetable Marrows are not fastidious as regards the soil they will grow in, that is, if it is rich enough. Instead, however, of this vegetable being planted in too poor soil, it is often the very opposite. This is generally the case when grown on large hillocks of manure, the plants on this growing much too luxuriantly to produce fruitful growth; in fact, it is with difficulty that the flowers can be got to set at all. If the season should happen to prove cold and comparatively sunless, the evil will be still more apparent. Not that any extra care is needed, for, as was pointed out in an article a few weeks back, good crops are often produced on plants grown on old rubbish or refuse heaps. Most gardeners, I dare say, have planted them in this material, and if they should happen to grow rather luxuriantly, there is generally plenty of space for them to ramble.

It is rarely, however, that better crops are produced than those secured by the London district market gardeners, these plants being set out in open fields, the soil being very rich and the plants amply supplied with water during dry weather. The market gardener takes good care that his plants are not exhausted through carrying overgrown fruits, for when this is allowed, others are prevented from forming. It is the formation and perfecting of the seeds which cause such a strain upon the plants.

In the majority of instances the season is only a short one, that is when the plants are raised for planting in the open without any protection to start the plants. This makes them necessarily late, and if by chance there should be a sudden and early frost, the plants are cut off in the height of their productiveness. This makes it all the more desirable, if it can be so managed, to give them the benefit of a handlight when first put out. Not only under handlights, but an early crop should also be obtained by planting out on exhausted hotbeds, such for instance as may have been used for Potatoes and such like. All that would be necessary in such cases would be to level down the soil, or make fresh hillocks of soil as the case may be, and set out the plants. Here the plants would have the benefit of the lights until such time as the frames could be dispensed with. In sowing the seeds the grower should bear in mind how he is going to grow the plants, whether under protection or not. If the

former, the seeds may be sown earlier; in fact, the plants should now be on the way. I like to have good plants, not those poor starvelings so often seen. Nor should the roots be cramped into small pots, 5-inch ones being none too large. It is not wholly essential to grow the plants on in pots at all, this being more a matter of convenience. Stations must be formed either separately according to the number of plants needed or by making a long ridge. Some old fermenting or rubbish heap material will be sufficient for the stations. Dig out holes 3 feet across and a foot or 18 inches in depth, in which firmly tread the material, bringing it up so as to form a cone, afterwards surfacing with a foot of fertile soil. The ridges should be formed similarly, but the space may either be dug out or not, according to the quantity of material at hand. All that will now be needed will be to sow the seeds at intervals along the ridge, or in the stations as the case may be, and over these to place the handlights. When first set out take care that watering is attended to. Ventilation will also have to be attended to,

soil the under part of the fruit is apt to get discoloured, this detracting from the sale.

A. YOUNG.

Young Cabbages running to seed.—Should any disappointed trade grower of Cabbages this season find his stocks have unduly bolted off to flower rather than to have hearted in, the seedsman will be able to quote the undoubted fact in defence that this bolting is very general. The subject, because sometimes one productive of litigation, has special interest to both seedsman and growers, and there would seem to be atmospheric conditions that at times create this precocious bolting and are detrimental to proper hearting. It is true that weather must at all times be expected to subject autumn-planted Cabbages to severe tests. Even now whilst the present untoward results are set down almost generally to the long spring drought, it may be that after all the evil was done early in the winter during the prevalence of severe frosts, for if the pith of the plant's stems suffers in that way, the normal action of the plant's growth will be affected also, but will not be evident until a much later period. It may be that saving seed from bad strains is sometimes productive of

risk run by sowing too early as there is out of doors. Where many persons make a mistake in regard to their Onion crop is in not thinning the plants out soon enough. If they are left in the rows until drawn up weakly, is it to be wondered at that those remaining fall about when the support is removed and never lay hold of the soil in the same way again?—E. M.

EXPERIMENTS IN PREVENTION OF POTATO DISEASE.

A REPORT of experiments conducted by the Irish Land Commission Agricultural Department during the season of 1892, in the prevention of Potato disease, has just been issued. The farms upon which the experiments for testing the value of applications of sulphate of copper as a preventive of the disease were carried out are situated in County Kerry, County Cork, County Waterford, and County Fermanagh, and the experiments were superintended by Mr. A. Wm. West, M.R.A.C. Further experiments were carried out by Mr. W. A. Barnes, of Westlands, Moynalty Kells, County Meath, and by the Dunganon Board of Guardians, in accordance with instructions given by the Department. In all cases the Champion variety of Potato was selected, this being the variety most generally grown for home consumption in Ireland. At each experimental station five quarter-acre plots were measured out; one of these was left untreated, and the others were treated with mixtures varying slightly in their character. Thus, in the case of No. 1, the mixture was composed of 30 lbs. pure sulphate of copper, 15 lbs. unslaked lime, and 150 gallons of water; to this mixture for plot 2 was added 30 lbs. of treacle. Plot 3 resembled plot 1, except that the amount of sulphate of copper was 22½ lbs. and of unslaked lime 7½ lbs.; to this for plot 4 was added treacle 22½ lbs. In all the experiments except No. 9 the plots were dressed three times, at intervals of about three weeks; in No. 9 the dressing was applied only once. Care was taken that the plots should be as nearly as possible similar with respect to soil, seed used, and general treatment, but the soil varied considerably in two cases. The total cost of applying the 2 per cent. mixture was, without treacle, 9s. 1½d., and with treacle 11s. 7½d., that of applying the 1½ per cent. mixture was 7s. 8½d. and 9s. 7d. Three men using Eclair sprayers and attended by one boy can apply 150 gallons to 1 statute acre in 5½ hours.

The spraying mixtures were prepared as follows: The requisite amount of copper sulphate was set to dissolve overnight by placing it in a piece of coarse sacking, suspended in a wooden barrel containing 2 gallons of cold water to every pound of copper sulphate, or if this could not conveniently be done, the copper sulphate was ground to powder previous to being placed in water; when thus powdered it dissolves in a few minutes in cold water. The correct amount of unslaked lime was then placed in a bucket, and water was added until the lime would absorb no more. Upon the whole of the lime being thoroughly slaked, sufficient water was added thereto to thoroughly cool the lime, producing a thin milk of lime, which was well stirred and then poured slowly into the copper sulphate solution. This mixture was then stirred for several minutes, after which sufficient cold water was added to dilute it to the required strength, the whole being continuously stirred. After thorough stirring, the mixture appeared azure blue in colour; it was then allowed to rest in order that the precipitate should sink. If after standing for a few minutes the precipitate sank leaving a few inches in depth of clear liquid it was considered ready for use, but if the liquid to the depth mentioned instead of appearing clear was slightly tinged with blue, the mixture was again thoroughly stirred and allowed to rest a second time. This second stirring generally produced the desired effect; but if, as occurred in one or two instances, it did not, more lime was added, the bluish tinge showing that the whole of the copper had not been



A good type of Vegetable Marrow.

and by the time the shoots reach the sides the lights should be removed altogether. The one great fault with Vegetable Marrows is that they are often allowed to suffer from want of moisture, and if this should be the case the fruits are apt to turn yellow instead of swelling off. If the weather should happen to set in dry with bright sunshine, plentiful supplies of water are really needed. Bright sunshine is very essential for fruitful growth; therefore the grower should see that the position marked out for the plants is in a well exposed spot. The large crops that the market grower is enabled to secure prove this.

Stopping and training are but little needed, the former but rarely, and then only if one shoot should be rambling away. Plenty of good Vegetable Marrows are grown annually when the plants are set out without any protection, but in this case take care that they are not planted before genial weather arrives, or the grower may see his plants cut off by late frosts or suffer from cold. It is always safer, however, to afford some kind of protection for a short time at any rate. The large growers for sale find it advantageous to spread a layer of clean litter over where the growths will ramble, the object being to keep the fruits as clean as possible. If allowed to lie on the

this early bolting. Still, no respectable seedsman would ever send out seed so produced if within his knowledge. Then in the present instance the general habit of bolting found, negatives the suggestion as to carelessness in the saving of stocks, and leaves no other reasons possible than such as may be found in past or present weather. I am not satisfied that the dry weather is the sole, though it may be the apparent cause. Only recently in a sandy district I found spring Cabbages bolting almost without exception, and yet in spite of the fact that all above was dry and arid, and all below 15 inches was gravel, yet the soil, because of the fine sandy surface, was delightfully cool and moist just beneath, so that the roots were existing under favourable conditions.—A. D.

The time to sow Onions.—Much depends upon the kind of soil as to the best time to sow Onions for the main crop out of doors. Where the soil is heavy and retentive of moisture, it is a mistake to sow the seed too early. At one time I used to sow about the middle of February, but from experience I found this was fully a month too soon. Last year I sowed the seed for the main crop on March 21, and had a fine lot of bulbs. Those left at the present time are plump and sound, and promise to remain so some time yet. In our soil treading and rolling are not at all necessary. Where extra large bulbs are wished for, the first week in February is none too soon to sow, but as this is done under cover, there is n

thoroughly precipitated. The addition of a few ounces of lime was found sufficient in each instance to bring about the desired result. On being tested with litmus paper the mixture as thus prepared proved to be free from acidity. It will be observed that the proportion of lime to copper sulphate used was as 1 to 2 on plots 1 and 2, and as 1 to 3 on plots 3 and 4. It was found that if the lime was thoroughly good the latter proportion was sufficient to neutralise all acid and to precipitate all the copper. Unless the acidity of the copper sulphate is neutralised the mixture would be injurious to the leaves of the Potato plant; therefore if the lime used is not of very good quality it is advisable to use it in the proportion of 1 part of lime to 2 parts of copper sulphate. When preparing the treacle mixture, sufficient water was added to the required amount of treacle to make it of a thin consistency; the diluted treacle was then added to the milk of lime, and after being thoroughly stirred the mixture was poured into the copper solution in the barrel, the whole being again thoroughly stirred. The object of adding treacle to the mixture applied to two of the plots in each experiment was to ascertain whether the addition of treacle to the sulphate of copper mixture, as recommended by M. Perret and M. Girard, would produce more satisfactory results than the applications of the ordinary bouillie bordelaise. M. Girard's experiments tending to show that the sacrated mixture was less liable to be washed off the Potato leaves by rain. So far as could be judged by the eye, the mixture without treacle remained on the leaves as long as that to which the treacle had been applied. According to a report from Sir Charles Cameron, who analysed specimens of Potato stalks and leaves, the quantities of sulphate of copper absorbed by the Potato leaves is very great. In those treated with sulphate of copper alone, the quantity amounts to more than 2 parts per 1000. The stalks absorbed very much less than the leaves. The presence of treacle materially prevented the absorption of the copper. It is remarkable that sulphate of copper, which is a tolerably soluble salt, should so freely enter into the tissues of the Potato leaves, and remain there, notwithstanding that the leaves were under a water tap for four days. No doubt the copper became fixed or insoluble in the plants. Sir Charles also examined samples of Potatoes, and found that, using 300 grammes weight of Potatoes, an almost infinitesimal trace of copper was detected. The quantity was unweighable and might have occurred in Potatoes not specially treated with sulphate of copper. A much larger amount would be in no wise injurious to health.

RESULTS.

In experiment No. 1 (County Kerry) the untreated plot produced 6 tons 14 cwt. 32 lbs. of sound, and 1 ton 5 cwt. of diseased (15.7 per cent.) Potatoes; the 2 per cent. solution, without treacle, produced 8 tons 6 cwt. 48 lbs. of sound, and only 6 cwt. 88 lbs. of diseased tubers; the cost of application was £1 7s. 4½d., and the net gain per acre £1 8s. 4½d. The percentage of diseased tubers in the treacle 2 per cent. plot was 3.82, the total yield being 7 tons 12 cwt. 96 lbs.; in the 1½ per cent. 4.1, and in the 1½ per cent. with treacle, 4.0. The net gain per acre from the application in plot 3 is put down at £4 2s. 11½d., and in plot 4 at £1 9s. 2d.; in plot 2 there is an estimated net loss of 8½d. In this experiment, therefore, the use of the mixture in every case produced a larger proportion of sound tubers, and in all but one case a better total yield. In the second experiments the results are not so decided, as the proportions of diseased tubers are (1) 8.9, (2) 7.3, (3) 11.0, (4) 7.3, and (5) untreated 11.2. The untreated crop produced 7 tons 12 cwt. 96 lbs. of sound tubers; plot 1 produced over 9½ tons; and the others varied from 7 tons 4 cwt. 32 lbs. to 7 tons 15 cwt. In three cases (plots 2, 3 and 4) the application is estimated to have been applied at a net loss per acre of £1 13s. 4½d., £1 16s. 7½d., and £1 10s. 10d. The results are peculiar, inasmuch as it is stated that at the time of the third dressing (August 20) the untreated plot was a most marked contrast to the others, being quite black with the disease, and hardly a green leaf to

be seen. The third experiment in County Cork gave much more favourable results, for the untreated plot yielded only 3 tons 7 cwt. 96 lbs. of sound tubers, with a disease percentage of 13.6, while the sound crops in the other cases were: (1) 9 tons 2 cwt. 16 lbs. (2.3 diseased); (2) 8 tons 9 cwt. 32 lbs. (no disease); (3) 7 tons 15 cwt. 80 lbs. (3.97 disease); and 8 tons 7 cwt. 96 lbs. (1.2 disease). The net gain per acre varied from slightly over £7 to nearly £9 per acre. A net gain of £5 9s. 9d. is estimated as the result of experiment 5 (County Waterford, only one plot treated); and a slighter gain, but still a gain, attended the application on experiment 4 (County Cork), experiment 6 (Waterford), and experiment 8 (County Fermanagh). In experiments 7 and 9 (County Fermanagh), the net gain ranged from 17s. 7d. per acre to £5 19s. 0½d. In experiment 7 the untreated plot had 13.3 per cent. of diseased tubers and a small crop, while three of the untreated plots were untouched by the disease, and the percentage in the remaining one (plot 3) was only 1.25; the crops in the treated plots were much heavier. The experiment carried out by Mr. W. A. Barnes at Kells was almost equally satisfactory. The untreated plot produced 9 tons 13 cwt. 56 lbs. of sound tubers, and 8.3 per cent. of the total crop was diseased; the sound tubers in the treated plots varied from 12 tons 11 cwt. 28 lbs. to 14 tons 5 cwt., with a disease percentage of 0.8, 1.0, 1.3, and 1.3, and the estimated gain from the application is put at from £2 1s. 6d. in plot 2 to £5 18s. 1d. in plot 4. On the whole the results of these experiments, which appear to have been very carefully carried out, are most encouraging to those who believe in the power of the application of copper sulphate to prevent the disease.

VEGETABLE MARROWS GROWN AS A SCREEN.

MANY bare fences or even walls may be turned to a profitable account if some of the small kinds of Marrows are trained on them. When I say the small kinds, I have the Custard varieties in view, also Pen-y-Byd, a splendid addition to the list of Marrows. I have found Pen-y-Byd most serviceable on account of its good quality and free cropping, as it bears a fruit at every joint. It should be grown by all who like this vegetable. As a screen the last named is very suitable, as it does not bear heavy fruits. The fruits of this variety are delicious cut in a young state. The Custard varieties are equally good. Prince Albert, a medium-sized fruit, does well if the Marrows are cut in a young state. This is a good companion to Pen-y-Byd, as it bears a medium-sized green fruit of good flavour. I have grown this vegetable in all positions except north. With plenty of food at the roots in the way of mulching and liquid manure, there is little fear of collapse. There are many fences, rails or low walls a few feet high where Marrows would do well, little attention being required after the plants cover their space, stopping and training in new shoots being a simple matter. A rustic fence or lattice-work is just the place for a few plants. When Marrows are grown in this way, it is necessary to give the requisite stopping and support. It is best to stop early and in this way get fruit at the base of the lateral growth, and to continue to train or tie in young wood to furnish the later supplies, as if left to form one shoot or main growth, the lower portion of the wall or fence will be naked and the plants fruit sparingly. To cover high fences, the cordon system of training may be employed. In raising Marrows, I have always found those plants thrive best that are not raised in too strong heat. Plants raised in cold frames kept close, when once above ground seem to grow marvellously; but, on the other hand, careful watering is more necessary, and none at all till the seeds have germinated. It is also important not to sow at too early a date if for exposed positions, as the plan should never get a check, which often occurs if kept in the pots too long. Many good cultivators allow from four to six weeks to raise the plants. Sow two or three seeds in a 4½-inch pot and thin

to one or two of the strongest. I would advise only one if for planting out, and to keep well supplied with moisture as the plants fill their pots with roots. By sowing later and not having the seedlings too long about, a stronger growth is the result. Where a quantity of Marrows is required, I would advise a later sowing.

G. WYTHES.

SHORT NOTES.—KITCHEN.

Preserving garden vegetables.—Can any reader tell me how to put up French Beans in glass bottles so as to keep their fresh green colour, as is done in France, and also how to preserve Gooseberries as if fresh, and Pears and Peaches in bottles so that they keep their natural colour?—W. A. S.

To make the most of valuable Potatoes.—Cut up into small pieces, one eye in each piece, and plant in shallow boxes, covering with 1 inch of soil. When up and well rooted plant out into good loam. An earlier crop and much greater increase are ensured in this way than by planting directly in the open ground.—E. W. B.

Planting Potatoes.—So many things have to be taken into consideration as to the best time to plant Potatoes, that it is difficult to actually fix a date to suit all circumstances alike, such as the condition of the soil and the state of the sets. It is, however, good advice to not be in too great a hurry. If the tubers are nicely furnished with stubby healthy sprouts from half an inch to an inch long, planting should be delayed fully ten days or a fortnight longer than when the sets are not sprouted at all. If the soil has been thoroughly well pulverised during the winter and spring, an early growth is much facilitated and later planting is desirable, as growth is so much quicker under those conditions.—S.

TREES AND SHRUBS.

MANY TREES ON SMALL AREAS.

IN the first of Professor Sargent's highly interesting and instructive papers on the "Forest Flora of Japan" he tells us that—

"The segregation of arborescent species in Japan . . . is the most striking feature of the silva of that country;" and he says that in Yezo are "probably more species of trees growing naturally in a small area than in any other one place outside the tropics;" in support of which statement he gives a list of forty-six species and varieties (forty-three species and three varieties) which he noticed "in ascending a hill which rises only 500 feet above the level of the ocean." To these he adds thirteen species "growing within five miles of this hill," making "in all sixty-two species and varieties, or more than a quarter of all the trees of the empire crowded into an area only a few miles square."

Unless the list given by Professor Sargent is a very incomplete one, I think it can be proved that at least one locality in the Eastern United States is even richer than Yezo in respect to the number of species of trees growing in a restricted area. In the "Proceedings of the United States National Museum" for 1882 (vol. v.), I published lists of trees found by me growing in limited areas of forest in South-eastern Illinois and South-western Indiana, which I reproduce here, although, to save space, they are presented in a different form, names of the species being omitted, and a summary of the number of species and genera found on each tract, with the size of the tract, being substi-

tuted. For convenience, the tracts are designated as "a" and "b."

Tract.	Locality.	Area of tract, acres.	No. of genera.	No. of species.
a.	Wabash County, Illinois.	29	24	46
b.	Knox County, Indiana.	75	29	52

Both these tracts were absolutely level ground, the first varied only by a creek which meandered through it, and the second bordered by a wooded swamp along one edge. Within half a mile of locality "a" there were identified twelve additional species and five additional genera; while within three miles in a nearly opposite direction were found seventeen additional species and five additional genera, making a total of seventy-five species and thirty-six genera—against sixty-two species and thirty-two genera of the Japanese list—growing on very much less than five square miles of territory.*

In locality "b" an enumeration of the species of trees growing on a separately enclosed tract of only twenty-two acres in extent, about eight acres of which had been partially cleared, showed forty-four species, belonging to twenty-five genera, to be growing there, or two species and more than one genus for each separate acre of ground. I am quite certain that the two localities referred to are by no means exceptionally rich in the number of species for that region; in fact, I am sure that five-mile-square areas might be selected in the valley of the lower Wabash, which would produce a still larger number of species and genera; but it would be necessary to include within their limits a greater variety of surface—that is, to include not only the usual bottom-land forest, but also swampy tracts, river banks and a portion of the river bluffs.

Among the seventy-five species representing the silva of the Southern Illinois-Indiana area described above, there is not a single evergreen tree. In fact, the general absence of evergreens, both among trees and shrubs, is a conspicuous feature of these forests in winter, the only woody plants which preserve their verdure from November to April being the forest Reed or Bamboo (*Arundinaria*), the Cross Vine (*Bignonia capreolata*), the Mistletoe (*Phoradendron flavescens*) and two or three species of *Smilax*. The almost complete absence of coniferous trees is the next most conspicuous characteristic, there being only one species, and that a deciduous one (*Taxodium distichum*).—R. RIDGEWAY, in *Garden and Forest*.

Staphylea colchica.—This shrub, which has been known for some years and attained a good deal of popularity under the name of *Staphylea colchica*, has at Kew the specific name of *Regeliana* bestowed upon it, and the fact that these two names are synonymous has, in the desire to prevent confusion, suggested this note.—T.

Azalea mollis and its hybrids are worthy of note, and the splendid forms of this type and *A. sinensis* in the collections of M. Koster at Boskoop and Mr. Anthony Waterer at Knaphill show that these shrubs are the most brilliant things we have amongst Azaleas. Each year the flowers increase in breadth and the colours are striking, rich orange, shot usually with a reddish tinge, each

bloom of perfect shape, composing an even, handsome head. A good kind in full bloom is a mass of colour, bright and effective for decoration. We think greater use should be made of these fine hybrids in English gardens, but they are getting more generally grown. The hybrid Anthony Koster, shown by Messrs. H. Lane and Son, Berkhamsted, at the meeting of the Royal Horticultural Society on April 11, is a fine addition. The flowers are of a brilliant yellow colour and individually of striking form, broad, full, showing the great improvement that has taken place in this section of recent years. For freedom of flowering, such shrubs are unsurpassed.

Azalea balsamiflora is well known by name, but it is not often grown in gardens, although we have noticed it of late in more than one nursery. It is a very charming Japanese species, known also as *A. roseiflora* and *A. Rollissoni*, the whole character of the plant being remarkably distinct. Each flower is like that of a *Balsam* in expression, but much larger, the petals imbricated, each forming quite a little rosette of a salmon-red colour. It makes a good specimen, and as the flowers are very double, they last in full beauty longer than those of the Indian Azaleas. A few blooms in a bouquet are valuable for giving finish and delicacy of colouring to the arrangement, and we are surprised that greater attention is not given to such a charming subject. Many of the newer Azaleas have very large, loose flowers, different to those of such types as *A. balsamiflora*, and, as with large-flowered *Petunias* and similar things, we do not care for such acquisitions.

Magnolia stellata (pink variety).—As shown at the meeting of the Royal Horticultural Society on March 28, when it received an award of merit, this *Magnolia* bids fair to be a really good thing, and one that will no doubt in time become as popular as the typical form, of which except in the colour of the flowers it appears to be an exact counterpart. *M. stellata* has been very beautiful under glass, and for blooming in this way it must be assigned a place among the best of our hardy shrubs. The fact that it will flower freely in the shape of small bushes not more than a couple of feet high is greatly in its favour for such a purpose. *M. stellata* is also known by the specific name of *Halleana*, and all that has been said in its favour will apply with equal force to the pink-flowered variety.—T.

New hybrid Philadelphuses.—When the pretty little *Philadelphus microphyllus* was introduced, it was soon taken in hand by the hybridist, and M. Lemoine, of Nancy, first gave us the variety *Lemoinei*, and later on *Lemoinei erectus*. From the same source there are two varieties announced for distribution this spring, viz.: *P. Lemoinei* *Boule d'Argent*, raised from *Lemoinei*, crossed with a double form of *P. coronarius*. The flowers of this are described as double white and with the scent of *P. microphyllus*, which is really very agreeable, and quite different from the heavy smell of some of the larger ones. The second, *Gerbe de Neige*, is said to bear flowers as large as those of *P. speciosissimus*, with the scent of those of *P. microphyllus*. Whether these new varieties are superior to those already in cultivation is yet to be proved, for we have now a great number of varieties all of which produce white blossoms.—T.

Veitch's Ampelopsis.—Just now as the young foliage is rapidly expanding, the fact that there is more than one form of this *Ampelopsis* is very apparent, the most striking being that met with in some catalogues under the varietal name of *purpurea*. In this the freshly expanded leaves are of a rich bronzy tint, and when associated with the common kind, this feature is then especially noticeable. As the season advances, this bronzy tint becomes less pronounced, but in all stages it is quite distinct from the others. Of green-leaved kinds there appears to be two different forms, firstly, one that always sets very closely to a wall, whose leaves are mostly entire, and die off in the autumn brightly coloured. The second will,

especially if in good soil, push forth large lobed leaves on long stalks, and this always seems to die off a dull brown.—T.

ORCHARD AND FRUIT GARDEN.

MELON GROWING FOR MARKET.

A CONSIDERABLE number of Melons reach the markets from various private gardens. Too often the fruit sent by private gardeners is either unattractive in appearance or too ripe, and for all such the fruiterers cannot afford to give the best prices. What the market growers supply are fairly large, very solid fruits of an attractive exterior and under rather than fully ripe. The quality may not be particularly good, though those I have tasted were by no means to be despised, and in any case the first buyers trouble themselves very little about the taste of the fruit. What they are most concerned about is the appearance and the keeping qualities of the Melons that come into their hands. Any dead ripe or badly cracked when received must be sold at once, and at a sacrifice probably, this accounting for the returns that we sometimes hear complaints made about. Market growers of any experience rarely make the mistake of growing too many varieties, and I fail to see the sense of private gardeners finding room for collections when two or three well-proved sorts would give greater satisfaction in every way. If they are expected to sell a portion of their crops, they ought certainly to study or "feel the pulse" of the markets, taking care to grow varieties of a showy exterior and rather thick rind. They will not err in growing *Hero* of Lockinge, *Golden Gem*, *Scarlet Premier* and *Golden Conqueror* or *Conqueror* extensively, rather than *Eastnor Castle*, *Longleat Perfection* and other varieties with either thin or dull green skins, however good these may be in quality when cut.

Doubtless Melon growing pays in the case of those who are able to do them well, or their culture would soon be dropped; but there is very little profit attached to them as far as most private gardeners are concerned. There is a good demand for them during the height of the London season, especially during Ascot week, but later on the trade is very slack and prices, never high, drop rapidly. Melons have the advantage of being a quick crop, the seed being sown, the plants grown and destroyed in about four months or even in less time, this admitting of Melons being followed by autumn or winter Tomatoes, or the houses can be devoted to late Cucumbers. Where possible, a house or houses should be wholly given up to Melons, the form of structure most favoured, and which answers remarkably well, being a narrow span-roof with or without side lights running from north to south and of any length. This should be glazed with good glass, or nothing cheaper than the best Belgian clear 21-oz., the foliage being liable to burn under anything much thinner than that. Supposing the house is not more than 12 feet wide, a flow hot-water pipe taken up each side and the return brought down on each side of the pathway is all the heating needed; but if 2 feet or more wider, then there ought to be two flow pipes on each side. A bottom-heat pipe is sometimes added for each bed, but this can very well be dispensed with, its assistance being of a doubtful character. All further preparation necessary is a good ridge of the best strong loam procurable formed along each side, and this

* The genera represented were as follows: *Liriodendron*, *Asimina*, *Tilia* (two species), *Aesculus*, *Acer* (three species), *Negundo*, *Gleditsia* (two species), *Gynocladus*, *Cereis*, *Prunus* (two species), *Pyrus* (two species), *Crataegus* (four species), *Amelanchier*, *Rhus*, *Liquidambar*, *Nyssa*, *Cornus*, *Viburnum*, *Diospyros*, *Fraxinus* (five species), *Sassafras*, *Catalpa*, *Ulmus* (three species), *Celtis* (two species), *Morus*, *Platanus*, *Juglans* (two species), *Carya* (seven species), *Quercus* (thirteen species), *Fagus*, *Carpinus*, *Ostrya*, *Betula* (two species), *Salix* (two species), *Populus* (three species) and *Taxodium*.

should be in position long enough to get warmed through prior to turning the Melons into it out of the 3-inch pots in which they have been raised singly. About the middle of February and again early in March would appear to be a good time to sow the seed, and the plants being kept growing strongly and rapidly, ripe fruit will be ready for the markets during May and June. There is no disputing the fact that somewhat strong or clayey loams best suit Melons as a rule, but one of the grandest crops of this fruit I have ever seen, and of which an illustration is here given, was obtained by the aid of soil of a light sandy nature. In this instance the soil was cut from the surface of a newly-broken-up pasture on the lower green sand formation, and contained a large admixture of oxide of iron. No manure whatever was mixed with it or applied while the Melons were growing. I ought also to add that the house containing this admirably managed crop is 160 feet long, 12 feet wide and 8 feet high, and altogether 350 fruits were cut averaging 5 lbs. in weight, besides smaller ones. Conqueror was the only variety grown, and it is scarcely possible to improve on this from a market grower's point of view.

Where market growers differ from the majority of private gardeners is in their arrangement of the plants, some disposing them 18 inches apart and others even more thickly. They are run up the roof quickly, the laterals being freely and early thinned out, as those reserved have to cross or intermingle with those from adjoining plants, stopping those reserved at the second joint beyond the fruits that show, and effecting a set as quickly as possible. Being grown thickly, two or three fruits on each plant are all that are wanted and as many as should be left, undersized Melons not selling well owing probably to so many being sent in by private gardeners. In these large well-glazed houses the leaves formed are of a bold, hard, serviceable character and not enfeebled by shading or frequent overhead syringing, a fairly moist atmosphere being maintained by means of damping down the beds and paths occasionally on bright days. High night temperatures, or say not lower than 65° on cold clear nights and 70° when it is dull and warmer outside, are requisite, enough top air being given during bright days to prevent the temperature greatly exceeding 80°, closing early enough to run the heat up another 5° or rather more for a time. While the fruits are swelling the plants require abundance of moisture at the roots, the watering-pot or hose being saved considerably if a mulch of strawy manure is applied to the surface of the ridge of soil. Liquid manure—nitrate of soda used at the rate of 1 oz. to the gallon of water answering well—is needed in some cases, especially if a portion of the soil has previously done similar duty. The plants are not allowed to form much superfluous growth, and no attempt is often made to obtain a second crop from them for the simple reason that it does not pay to keep them about so long. Covent Garden is still much the best market for fine well-grown Melons, there being only a limited demand for them in the largest provincial towns.

W. I. M.

Strawberries to fruit in autumn.—At this date when the forced plants are being cleared they may be made to answer a useful purpose if saved for autumn fruiting. At one time I used to plant such Strawberries out to fruit in the open, but I do not now consider it advisable to do this, as much better results can be secured from young plants. There is, however, no objection to making a bed for autumn fruiting, as the plants may be placed

closer together and not occupy the ground any length of time. The best variety for this purpose is Vicomtesse H. de Thury, which fruits freely in August and September if kept well supplied with moisture. I have also used La Grosse Sucrée for the same purpose. If required to fruit in pots in the autumn they may be turned out of the pots, the old drainage removed, part of the roots and soil taken away, repotted firmly in 7-inch pots, and stood in the shade for a short time, when they may be freely exposed and well supplied with moisture. These plants will give a heavy crop in a cool house or frame in the early autumn, or they may be plunged to fruit in the open ground. If planted out they should get good ground, be mulched with short litter, and kept moist in dry weather with an occasional damping overhead in the afternoon.—G. WYTHES.

CORDON PEARS.

I HAVE nearly 200 yards' run of single cordon Pears trained to a wire about 18 inches from the ground. The trees were mostly planted five years ago. It has been and is still very interesting to watch the behaviour of the different sorts grown in this way. In making the selection I purposely excluded such small sorts as Hesse and Winter Nelis, although



House of Melons at the Bromham Fruit Farm, Calne, Wilts. From a photograph by Mr. F. S. Vallis.

I am well aware that in point of flavour they are superior to many of the large varieties. My aim is to find out what are the best amongst those that produce fairly large and handsome fruit with good flavour. All the trees are on the Quince stock, and for the most part the soil is a rather heavy loam about 2 feet deep, resting on a bed of gravel. For securing good flavour and a clean growth the gravel bottom is no doubt an advantage, for the flavour of the reputedly good sorts leaves nothing to be desired, while even in Beurré Diel there is an absence of that grittiness so often present when it is grown away from a wall. The dry summer of 1892, however, showed that the situation was too dry for the Quince stock, or rather it would have been if I had not resorted to mulching the ground, and liberally supplying water to such trees as were carrying any fruit; with this assistance the fruit developed to a good size, and I think the examples of Josephine de Malines were the finest and best flavoured I have ever seen or tasted in the way of late Pears. This variety unfortunately is not prolific as a cordon. Durondeau is fairly vigorous, and without doubt the most constant bearer out of this rather large number of sorts. The fruit is also large and handsome and the flavour excellent. I regard this variety as second to none in my collection. The next best as regards fertility is Princess. This is, I believe, a seedling from Louise Bonne of Jersey, which it very much resembles except in size, being much larger, and I think of better quality. When the trees are lightly cropped, as they were last

year, Doyenné du Comice produces handsome and well-flavoured fruit. It is also a pretty reliable bearer. Six trees of Marie Louise were quite barren last year, but previous to that they had behaved much better, and what fruit they have produced has been exceedingly good. Pitmaston Duchess, as everyone knows, is a noble Pear, and from cordons it appears to be better than from a wall. In 1891 the fruit was very fine, but up to the present time I do not regard it as a regular bearer. Last year I had not so many fruits as trees. Emilie d'Heyst makes a remarkably prolific cordon, the fruit being both large and handsome, and in flavour not surpassed by any Pear ripe in the month of October. Bergamote d'Esperen is disappointing so far, as the fruit cracks badly. This is to be regretted, as it is well known as one of our best late Pears when the fruit can be secured without this fault. Another year I intend to reduce the water supply to the roots, which I hope may alter this defect. Glou Morceau is not satisfactory. It does not appear in my case to take kindly to the Quince stock. Beurré d'Anjou is not so well known as many other sorts I have named, and at present I cannot say much in its favour. It is evidently not a free bearer as a young tree. The most disappointing of all the sorts in my collection is Beurré Bachelier, for although the fruit is very large and handsome the

flavour is very inferior, and what is still more provoking the flesh is too soft for cooking. Duchesse de Bordeaux is a Pear that one requires a rather long acquaintance with to understand its cultivation. As it is not a vigorous grower on the Quince the roots want well nourishing to get the fruit of a respectable size. Olivier de Serres and Conseiller de la Cour so far look like failures, as the trees grow so vigorously, that I cannot get them to form any blossom-buds. I, however, have lifted the trees, which I hope may make them productive. It is generally considered necessary to lift cordon trees the second year after planting, but I have found root-pruning on one side of the tree the second and third year after planting to be a sufficient check on the growth, and no trees can be in a more promising condition than they are at the present time, as all but those to which I have specially referred are showing blossom buds.

For obtaining a few choice Pears in a limited area the cordon system of training is superior to all others, as the small space the trees occupy is of the first importance in small gardens.

J. C. CLARKE.

Our fruit prospects.—Plum and Pear trees were seldom or never whiter. But the drought is telling on the Gooseberries on certain soils, and the red spider has attacked them in great force, and growers are naturally alarmed at the earliness as well as the force of the enemy. Within the last week various applications for ad-

vice have reached me, and I should be glad of the assistance of your readers in this matter. Root and overhead waterings and sprayings with a mixture of lime, soap, and sulphur have been freely prescribed, and if anyone knows of any remedy more potent and effective against early attacks of red spider, it is to be hoped he will hasten to declare it. The next cloud ahead is the Black Currant gall mite, which seems to be spreading rapidly. Fortunately, it is readily seen, and the infested buds, which are crammed full of the mites which are invisible to the naked eye, grow into very prominent knobbed protuberances only too readily seen and easily picked off. As they are of no further use on the bush, and each forms a breeding ground for innumerable mites, the sooner they can be picked off and burned, the more hope of our mastering this troublesome pest. In addition to the picking off of every knobbed bud, it would be well to syringe the bushes over with a mixture of soap and sulphur. Black Currants have hitherto enjoyed almost complete immunity from destructive pests, even the Gooseberry caterpillar mostly leaving them severely alone, and it is hoped that the prompt removal of all the mite-filled buds with a few preventive sprayings may rid us of this troublesome pest.—D. T. F.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY.

APRIL 25.

THE fullest meeting of the year thus far, with the best attendance of Fellows and visitors, must be the verdict of this, the last April show. With five lengths of tabling and an extension at the upper end, and several exhibits upon the ground level, anyone who has an intimate knowledge of the hall will know that it was well filled. One of the chief features, of course, at this gathering is the Auricula Society's annual exhibition, in which the interest of cultivators of this handsome spring flower is apparently as keen as ever, good competition being the rule. Other and varied forms of Primulaceæ were also exhibited in good numbers. Hardy herbaceous and alpine plants were also attractive features, whilst Daffodils were still in force and of good quality. Of pot plants, pot Roses were undoubtedly the finest exhibits; never before, probably, have so many been seen at one show. If these had all been arranged in one continuous group, one side of the hall would have been filled with them, allowing for not quite so much crowding. Cut Roses were also a most noteworthy feature, several boxes being staged by well-known growers. Maréchal Niel and Niphetos, particularly the former, were strongly represented, other Tea-scented and Hybrid Perpetuals being also shown in fine condition. Orchids, although not quite so plentiful, were remarkably good in quality, notably some fine varieties of *Odontoglossum Alexandræ*, *Cattleyas* and *Masdevallias*. The labours of the fruit committee were comparatively light, two of the most promising things shown being a dish of Peaches and another of Potatoes, with some very good forced Strawberries. The lecture was certainly a most interesting one, at the same time instructive in a high degree as to the plants under consideration. These lectures are evidently becoming more and more popular, being listened to with marked attention, the lecturer on this occasion being a recognised authority on the subject.

Orchid Committee.

First-class certificates were awarded to—

LÆLIO-CATTELEYA ASCANIA (*Lælia xanthina* × *Cattleya Triane*).—A decided cross, with marked characteristics of both parents. The shading of the sepals and petals is a straw colour, the lip being tipped with the colour of *C. Triane*, the tube and throat of a clear yellow, richer inside than out—a very pleasing and distinct hybrid. From Messrs. Veitch and Sons, Chelsea.

MASDEVALLIA GALENGIANA.—An extremely dwarf species of compact growth, the foliage short, the entire plant and flowers not more than 4 inches in height. The flowers are pale-coloured, with minute rosy spots, the tail-like appendages several inches in length. From Sir Trevor Lawrence.

MASDEVALLIA ARMINI.—Another small-growing and most profuse-flowering species, height only about 6 inches. The flowers are considerably smaller than in the foregoing, the colour a rosy lilac, very distinct. Also from Sir Trevor Lawrence.

Awards of merit were given to—

ODONTOGLOSSUM ROEBLINGIANUM.—A decidedly distinct-looking Orchid with narrow sepals and petals, marked with reddish brown bars and spots on a pale, almost white ground, the lip having the same markings. One spike bore seven flowers. From Messrs. F. Sander and Co.

MAXILLARIA SANDERIANA VAR. **XANTHOGLOSSA**.—This is a very superior form, the blossoms of a dark chocolate shade in the sepals and petals two-thirds downwards to the base, the extremities being white and the lip pale yellow. From Messrs. Sander and Co.

EPIDENDRUM MACROCHILUM VAR. **ALBUM**, in which the lip is the chief attractive feature, this being pure white and comparatively large. The sepals and petals are of a pale bronzy green, curiously curled. From Sir Trevor Lawrence.

STANHOPEA AMESIANA.—A pure white species of the size and form of *S. tigrina*, and of waxy texture. The plant bore two flowers on the one spike. It is a very distinct species of this fine old genus. From Messrs. H. Low and Co.

Botanical certificates were given to—

BULBOPHYLLUM LOBBI VAR. **SIAMENSE**.—A dwarf-growing plant with pale yellow, almost self-coloured flowers. From Sir Trevor Lawrence.

SACCOLABIUM CERINUM.—Interesting only as a curiosity; the spike, a short and dense one, was of a yellowish green, none of the flowers being really expanded. From Royal Botanic Gardens, Glasnevin.

Sir Trevor Lawrence sent a choice group which comprised a surprisingly fine form of *Cattleya Mendeli*, the plant itself quite a specimen with fifteen grand flowers upon seven spikes; the individual blooms had broad sepals and petals with the lip of large size and rich in its colouring. *Dendrobium thysiflorum* bore two unusually long spikes. *D. revolutum* is a singular species of erect and continuous growth, with small white and greenish flowers. In *Cypripedium Schröderæ* was shown another grand and almost unique specimen of this one of the finest of all hybrids, certainly the finest of this section; the plant bore four spikes with eight flowers of large size, in colour mainly a deep shade of rose, with lighter markings; this belongs to the *Selenipedium* group. *Cypripedium villosum aureum* is a choice form of rich colour, the same being designated by its prefix. Another very fine plant in this group was *Cattleya Schröderæ* with thirteen flowers, in each of which the lip was beautifully fringed with rich yellow upon the inner portion. *Masdevallia Shuttleworthi* in two forms was also staged (silver Flora medal).

Messrs. Sander and Co. had a small, but choice group, embracing two plants of *Oncidium roaimense*, a pale yellow species with faint markings of a deeper shade, a pretty variety; *Odontoglossum triumphans*, a superior variety with broad petals; *O. selwoodense*, with chocolate-brown spots and bars on pale yellow ground, slender arching spike; *O. crispum*, an extra fine form with large flowers and few spots, eight flowers to the spike; *O. Jenningsianum*, a variety that comes near to *O. Andersonianum*; *Cypripedium Robinsonianum* and *C. Goweri*, both fine forms in the same way as *C. Lawrenceanum*, to which they are closely related, the former being the finer of the two; *Cypripedium Rothschildianum*, rich in colour; *Dendrobium macrophyllum*, freely flowered; *Cattleya Schröderæ* and *C. granulosa*, the latter extra fine. *Pescatorea*

Klabochorum, seldom seen in better health; *Dendrobium densiflorum* and *D. chrysotoxum*, *Lælia* (*Brassavola*) *Digbyana*, and other good things were shown (silver Banksian medal).

Messrs. H. Low and Co. contributed a small well-flowered group, comprising *Odontoglossum Alexandræ* and *O. Andersonianum*, *Cypripedium bellatulum* with richly coloured flowers; *C. voluteum*, a distinct and handsome variety, the broad sepals tipped with rosy purple; *C. Mastersianum*, a pale brown form; and *Phalenopsis Ludemanniana splendens*. Messrs. W. C. Lewis and Co., Southgate, had *Odontoglossum læve* with straggling spikes, *O. Alexandræ*, *O. triumphans patens*, a pale form; *O. citrosum*, *Oncidium ampliatum*, *Lælia purpurata*, and others, making a pretty little exhibit. Mr. De Barri Crawshaw, Rosefield, Sevenoaks, had a few plants of extra choice forms of *Odontoglossum crispum* (*Alexandræ*) in splendid condition; to these English names were appended to distinguish them. One called *Sunrise* had large flowers suffused with pale rose; another called *Fair Maid* is an almost pure white form, but with the distinctive yellow blotch in the lip; another called *Miss Florence Bovill* has deeply coloured flowers with dark blotches; these were only just expanding. The finest was *Pride of Rosefield*, a truly grand variety with large, massive flowers; in every sense a superior form, pale in colour, but with very broad sepals and petals. A good variety of *O. Andersonianum* was also shown here.

Messrs. Veitch and Sons again showed their choice hybrid *Lælia Latona*, previously certificated, a very distinct and choice variety. Mr. Charles Winn, Selly Hill, Birmingham, sent *Dendrobium Nestor* (*D. Parishii* × *D. superbum*), which has much of the character of the former parent, the colour a purplish rose, evidently a robust grower. From Mr. Goodhart, Beckenham, came *Cypripedium Wallisi*, in which the inner portion of the pouch at the top is pure white. Mr. Lutwyche, Beckenham, sent *Cattleya speciosissima Goweri*, which has a near resemblance in form and appearance to *C. gigas*; the plant in question bore five flowers. Mr. W. W. Mann, Ravenswood, Bexley, showed *Cynoches pentadactylon*, previously shown earlier in the year (January meeting) from the same source. Messrs. Seeger and Tropp, Dulwich, showed a singular looking *Lycaste* in *L. Poelmani*, in which the sepals are pale brown and the petals bright yellow, a curious combination of colour. Mr. Statter on this occasion showed *Cypripedium Boxalli superbum* with six flowers, in which the markings are darker than in the type; *Dendrobium nobile Statterianum* with extra large flowers of superior substance, with broad petals and large lip, the colour brighter than in *D. nobile*; *Cypripedium Measuresianum aureum*, a pale form, almost destitute of spots, the dorsal sepal small. Mr. E. G. Wrigley, of Dukinfield, Cheshire, had *Dendrobium nobile Victorienne* and *D. nobile albiflorum*, two varieties with pure white flowers, save a dark spot in the lip of each, the former being the better of the two; but both very distinct from the ordinary type, also *Cattleya citrina concolor*, with pure rich citron-coloured flowers of waxy substance, and *Sophronitis grandiflora superba*—a good form. Messrs. B. S. Williams and Son showed *Vanda teres Andersoniana*, which is stated to be a more free-flowering variety; the flowers are richer in colour; and another and singular-looking Orchid named *Diacrium bicornutum*, with pure white flowers on erect spikes. Mr. W. Whiteley sent *Odontoglossum Whiteleyanum*, a pretty variety.

Floral Committee.

First-class certificates were awarded to—

STROBILANTHES DYERIANUS (probably an acanthaceous plant), of comparatively dwarf, but free growth and branching habit, the leaves being from 4 inches to 6 inches in length and 2 inches to 3 inches in width, the colour a dark olive-green around the edges with the veins of a similar shade, the rest of the leaves is of a bright rosy-purple, much after the style of a *Bertolonia* in the marking, an acquisition to dwarf fine-foliaged plants. From Messrs. J. Veitch and Sons.

Awards of merit were given to—

ABUTILON SOUVENIR DE BONN, with medium-sized foliage, dark green in colour, margined with white, dwarf habit. From Messrs. B. S. Williams and Son.

AZALEA HILDA (mollis section), a very free variety with decided orange coloured flowers in dark and light shades, a pleasing and striking shade. From Messrs. Lane and Son, Berkhamsted.

AZALEA RAPHAEL DE SMET (mollis hybrid), with double flowers in large trusses, which are freely produced, the colour a pale flesh colour, the habit of the plant dwarf and compact. From Messrs. Lane and Son.

Messrs. W. Paul and Son, Waltham Cross, sent a splendid bank of pot Roses in the best of health, making a fine display. Of these the finest were Mme. Gabriel Luizet, Fisher Holmes, Victor Verdier, Violette Bouyer (fine white), La France and smaller plants of Duke of Albany (a dwarf, dark variety), Danmark, Duke of Wellington and Celine Forestier, with standards of Zenobia (Moss), one of the firm's own raising (silver-gilt Flora). Mr. Rumsey also had Roses, comprising a well-arranged group of small, medium-sized and standard plants, the best of which were Niphetos, l'Idéal, John Hopper, Celine Forestier, Souvenir d'un Ami, Mme. Hoste, The Queen, &c., with a splendid box of cut blooms of Niphetos and another of mixed kinds, comprising Anna Ollivier, The Bride, Sunset, Charles Lefebvre, &c., all fine blooms (silver Flora medal).

Messrs. Paul and Son sent pot Roses and alpine plants. Of the former there were several excellent specimens freely flowered, as Violette Bouyer, Comte de Paris, Perfection de Montplaisir, Cheshunt Hybrid, Magna Charta, and standards of Souvenir de S. A. Prince and Mme. van Houtte. Of the alpine plants note should be made of Cheiranthus alpinus, Iris pumila, azurea and aurea; of Phlox canadensis and P. nivalis frondosa, Aubrietia tauricola, Myosotis rupicola, very dwarf; Trillium grandiflorum, &c., all in dwarf pans (silver Banksian). Messrs. E. D. Shuttleworth and Co. had a miscellaneous group of fine-foliaged and flowering plants, comprising well-coloured Dracæna Lindenii and older kinds, with Palms, Caladiums, &c., and of flowering plants Azaleas and Orchids, all healthy examples of their kind (silver Banksian). Mr. J. Walker, Thame, had a grand lot of cut blooms of Maréchal Niel Roses (three boxes) very rich in colour, and some eighteen kinds of cut Geraniums of the best pot vars. Mr. Walker also had Fabiana imbricata, a pure white Heath-like plant, excellent for pot culture and in profuse flower (silver Banksian medal). Mr. Tasker, Middleton Hall, Brentwood, sent a well-grown lot of medium-sized pot Roses, the best lot by far that has been staged from a private garden for many a long day; these included Marquise de Castellane, Merveille de Lyon, Souvenir de S. A. Prince, Juno, Edouard Morren, Souvenir d'un Ami, Mme. Lacharme, &c., the foliage throughout very healthy, the plants wanting a few days longer to be seen in perfection (silver Banksian). Messrs. J. James and Son, Farnham Royal, sent a group of their marvellous strain of Calceolarias with very fine flowers in self colours and spotted forms, the former being the most striking, the yellows and darks very fine indeed, the plants sturdy and robust with extra dwarf growth (silver Banksian). Messrs. Barr and Son sent a large group of Daffodils and other spring flowers. Of the Daffodils, Nelsoni, Mrs. Backhouse, grandis, Mrs. Alfred Pearson, Sir Watkin, Poeticus ornatus (extra fine), Emperor, J. B. M. Camm, Mabel Cowan, and John Nelson were the finest. Other things comprised Pæonia hybrida, one of the earliest, and Tulips Picotee, Golden Beauty, and Fulgens, three useful decorative forms, of which more should be seen (silver Banksian). The Guildford Hardy Plant Co. had four baskets of alpine and other early spring flowers very prettily arranged and in such a manner as to arrest a deal of attention from visitors; the best things were Draccephalum grandiflorum, Gentiana acaulis, Haberlea rhodopensis, Viola calcarata alba, Cypripedium pubescens, Phlox divaricata, P. setacea

Nelsoni, and Aubrietia tauricola, with forms of Saxifrages (silver Banksian medal). Messrs. B. S. Williams and Son had a mixed group, comprising several forms of seedling Amaryllis, Duke of Portland, light ground with crimson veins; Mrs. Cutler, pale red; and Dazzle, a fine large dark scarlet, being three of the best. Other things comprised a tall plant of Rhododendron Aucklandi, R. Purity, a lovely white variety with long tubular flowers, R. Williamsi (previously noted), some good Anthuriums (silver Banksian). Mr. Frank Cant had some splendid cut blooms of Roses, very fresh and of full size, the best being Mme. Cusin, Innocente Pirola, Puritan, Mrs. John Laing, Souvenir de S. A. Prince, Caroline Testout, Ulrich Brunner, Duc de Morny, Dupuy Jamain, Caroline Kuster, Mme. Verdier, Sir Rowland Hill, and Merveille de Lyon (silver Banksian).

Messrs. J. Peed and Son, Norwood, had a group of Gloxinias arranged with Maiden-hair Fern, making a very good effect as a whole, F. R. Barnes, a pale red variety, and several good spotted forms being the most prominent; with these was a box of cut blooms (silver Banksian). Messrs. E. D. Shuttleworth and Co., Peckham Rye, had cut blooms of Narcissi and early hardy herbaceous plants. Of the former, Emperor, bicolor Horsfieldi and Queen of Spain were the best. Of other things, Saxifraga Camposi, Trillium, Phlox canadensis, Lithospermum prostratum, Gentiana acaulis and Crown Imperials were all worthy of note (bronze Banksian). Mr. T. S. Ware had a large group of Primula Sieboldi in variety, amongst which the type, Ruby Queen, violacea, Novelty, Miss N. Barnard and Bruce Findlay were the finest forms (bronze Banksian). Messrs. Pearson and Sons, Chilwell, had a very fresh and attractive display of cut Daffodils, which included such sorts as Goliath, Agnes Barr, Nelsoni major, Sir Watkin, Barri conspicuus, Princess Marie, P. R. Barr, Emperor, Mme. de Graaff (new, pale sulphur-white), Robin Hood, Model and Mago (bronze Banksian). Mr. Tasker had a group of Cannas, including Mme. Crozy, Edouard André, Antoine Chantin, Progression and Louis Thibaut; these were much the finest plants of this type of Canna that have yet been exhibited (bronze Banksian). A few other things were shown, remarks upon which may be made in next issue.

Fruit Committee.

There were some interesting exhibits before this committee, Strawberries, Peaches, and Melons being good, and showing earliness of the season. An award of merit was given to

POTATO SHARPE'S VICTOR as a forcing variety. The tubers of this are roundish-oval in shape with extremely shallow eyes and beautiful clear skin. It is a heavy cropper under glass and of good flavour, coming to maturity in nine weeks from time of planting. From Mr. Wythes, Syon House.

From the same source was contributed a score of well-grown Peaches, the variety being Amsden June the fruit highly coloured and of medium size. This variety received an award last year, and was now sent to show its earliness over existing kinds. It stands hard forcing, being ripe in eighteen weeks from time of shutting up the house. From the Royal Gardens, Windsor, Mr. Thomas sent six medium-sized fruits of a seedling Melon, a cross between Countess and Royal Ascot; the fruits were not quite at their best. Mr. Thomas also sent La Grosse Sucrée Strawberry, the fruits large and of good colour, and a very fine dish of Tomatoes called Brown's Invincible, large fruits, somewhat corrugated, but lacking flavour. A new seedling Melon of considerable merit, but not ripe, was staged by Mr. G. Smith, gardener to Mr. W. R. Inglis, Craigendowre, Reigate Hill. This the committee wished to see again. Very fine fruits of the new Strawberries Empress of India, Lord Suffield, and Gunton Park, certificated last year, were placed by Messrs. Veitch, Chelsea, before the committee to show their value for forcing. A new seedling Strawberry named Walker's Early Prolific was sent by Mr. E. Munday, gardener to Mr. W. A. W. Musgrave, Thame Hall, Thame, fine fruits, but too much like those of President to

merit a special award. Mr. Miller, Ruxley Lodge, Esher, contributed a nice box of Keens' Seedling and Bicton Pine Strawberries, the latter old variety claiming some attention on account of its being a white fruit. A small collection of Apples staged by Mr. J. G. Dean, Titsey Gardens, Limsfield, was past its best. Mr. Wythes also sent Asparagus cut from young plants in the open ground.

There was a large audience to listen to the lecture on "Alpine Plants" by Mons. H. Correvon, of Geneva. The Rev. W. Wilks read Mons. H. Correvon's notes, and at the commencement stated he did so at the desire of the author, who was present and would gladly explain any point required. Alpine plants in most instances were very dwarf or stunted, often being elevated over 6000 feet, and forming, as it were, dense carpets. Many were perennials, a few annuals, but all flower profusely. Many have bright colours, owing to pure air and freedom from fungus or disease. Owing to their high altitude, they have very short flower-stalks, also leaves. The close, thick growth or carpet forms a protection from drought, and their coriaceous leaves protect from frosts. During sunshine, growth is very rapid and the leaves lengthen, but in cold weather form a spreading tuft. It will often be found that some alpine plants which increase rapidly in this country are not vigorous in their native habitat. M. Correvon had seen at Kew much finer masses of Saxifraga oppositifolia than at home. Many plants thrive when the temperature is a little just above freezing point and only require heat in summer to bring them to perfection; but full light is necessary, and by a little warmth, far greater vigour is secured. In the Alps it may be said spring scarcely exists, as when the snows disappear, summer begins, causing a verdant growth and abundant bloom, as after seven or eight months of sleep, growth is more rapid than with plants always growing. The spongy soil retains water, and this supplies moisture in the summer. Alpine plants often difficult to propagate may be raised by using Sphagnum Moss. Choice plants in this country often did best in crevices of old walls and on rockwork; little soil was required; moisture was obtained from the stones by the roots going under and being kept cool. Alpine plants are best increased by seed and grow more robust than by other methods of propagation, but it must be borne in mind seedlings often take as long as two years before they come to any size. The seed should be sown in a cold frame in spring or November. He had placed pieces of turf in 1 inch of water and sown seeds on them, and with constant moisture there was great success. He entered a strong protest against the wanton destruction of beautiful alpine plants, some of the rarest having been almost exterminated. There was now, he was glad to say, a society to protect these gems in Switzerland, also in this country, and by their agency rare plants had been increased. Some seeds from the Lake of Como sent to Geneva had done grandly, thus saving the species. He would also invite all visitors to assist in this preservation and to visit the gardens founded to preserve such plants, as much pleasure would be experienced in doing so. The chairman, Sir J. D. Llewellyn, Bt., said Mons. H. Correvon had given them a great treat and thoroughly gone into the merits of these beautiful plants, and he had much pleasure in proposing a hearty vote of thanks on behalf of the council and Fellows of the society.

NATIONAL AURICULA AND PRIMULA SOCIETY.

It is not to be wondered at that the Auriculas, Polyanthuses, and Primroses at this exhibition on Tuesday showed signs of staleness, regard being had to the character of the weather for seven weeks past. These charming flowers are able to show themselves at their best in cool, moist, genial weather; but the remarkable absence of moisture in the air and in the soil, with brilliant sunshine,

not in any degree tempered by passing clouds and accompanied by drying winds, had a very serious effect upon the *Primula* family, and robbed them to a large extent of freshness and beauty. There was plenty of Auriculas, but few in their best dress. The presence of the Rev. F. D. Horner's flowers did much to redeem the character of the exhibition, but they, though brought from so far north, betrayed evidences of the effects of the warm weather and the efforts put forth to hold them over in presentable condition. The wonder is that so many flowers were shown, and the presence of the alpine varieties—which are later in flowering than the show types—in such large numbers was a satisfactory feature. But they also in many instances were past their best. Never perhaps before were five collections of fifty plants staged at one time. They helped to fill the tables it is true, but they were the least satisfactory from the point of view of quality.

In the class for twelve Auriculas, dissimilar varieties, five collections were staged. The Rev. F. D. Horner, Lowfields, Kirkby Lonsdale, was placed first, having four green edges, viz., Achilles (Simonite), the edge of green very bright, body colour, paste, and tube all good; Shirley Hibberd (Simonite), a variety of remarkably robust growth, having flat well formed pips with harmonious zones of colour, the edge deep green, black body colour, good paste and golden tube, a variety promising to take high rank if its character is maintained, and which worthily commemorates one who was a warm supporter of the Auricula Society; Monarch (Horner), a fairly good green, but weak in the tube; and Chloe, bright green edge, dark body colour, good tube, but the paste somewhat thin and narrow; grey edges: George Lightbody in good condition, and Alexander Meiklejohn, with a good truss of eight even-sized pips; white edges: Magpie (Horner), a particularly soft and pleasing variety, dense white edge, black body colour, good paste and tube; and of selfs: Doris (Horner), plum-purple, somewhat shaded upon the petal edges, which defect was no doubt owing to the warmth of the weather, good shape, the paste narrow, which is a defect in many selfs, and somewhat scalloped; a variety with the habit of Mrs. Potts; Dusk (Horner), a very dark self of good shape, a somewhat narrow paste and good tube; and Charmer, a bright red self of fine shape, and quite distinct in colour. Mr. T. E. Henwood, Hamilton Road, Reading, was second; third, Mr. J. Douglas, Great Gearies, Ilford; fourth, Mr. A. J. Sanders, The Gardens, Brookham Lodge, Cobham; fifth, Mr. James Weston, Ravensholme, Balham. There were five collections of six show Auriculas, the Rev. F. D. Horner being again first with green edge Rev. F. D. Horner, grey edge Grayling (Horner), a large variety of somewhat coarse appearance, and Alexander Meiklejohn; white edge Magpie, carrying some charming pips, and Rachel; self Mrs. Potts; second, Mr. T. E. Henwood; third, Mr. A. J. Sanders; fourth, Mr. J. Douglas. There were three collections of four show Auriculas. Mr. W. Smith, The Links, Bishop's Stortford, was first with green edge the Rev. F. D. Horner, grey edge George Lightbody, white edge Mrs. Dodwell, and self Mrs. Potts; second, Mr. Leonard Brown, Seven Arches, Brentwood; and third, Mr. Patterson, Ashbourne, Sunderland, with among others a bright-looking green edge named John Garrett. There were four lots of two Auriculas, Mr. L. Brown being first with grey edge Rachel, and white edge Mrs. Dodwell; second, Mr. W. Smith; third, Mr. C. Phillips, Reading; fourth, Mr. Patterson. Decidedly the best collection of fifty Auriculas came from Mr. Charles Turner, Royal Nursery, Slough, who had a few show varieties, such as green edge the Rev. F. D. Horner; grey edge, Sir J. Moore, William Brockbank, and A. Meiklejohn; white edge, Mrs. Dodwell and Ganymede; self, Mrs. Potts; and such fine alpine as Grace Darling, Charles Phillips, Mrs. H. Turner, Winnifred, a charming white-centred flower; International, Edith Wynne, Mabel, Jeannette, and some unnamed seedlings; second, Mr. J. Douglas, who had mostly overblown show varieties and a few alpine; third, Mr.

W. L. Walker, Dunolle, Reading; fourth, Mr. C. Phillips, Reading. For twelve fancy Auriculas, Mr. J. Douglas was first, having varieties of a showy character, but nondescript in regard to classification; and second, Mr. J. Weston, Ravensholme, Balham, with poor subjects. Alpine Auriculas, as before mentioned, were very numerous, though in many instances too far gone; but enough was seen to show the marked advance being made with new varieties, especially in the case of the white-centred flowers which came from the Royal Nursery, Slough. The best twelve were from Mr. C. Turner, who had of gold centres, F. Knighton, very fine; Dash, Charles Turner, very bright, and Hotspur; cream and white centres, Mrs. H. Turner, Roland, Winnifred, Patience (very good indeed), Countess, Hubert and seedlings; second, Mr. C. Phillips, Reading, with promising seedlings of his own raising; third, Mr. J. Douglas; fourth, Mr. W. L. Walker. With six alpine, of which there were several collections, Mr. C. Phillips was first, with Saturn, Mrs. Martin, Mrs. F. J. Blandy, Baroness Burdett Coutts, Mrs. G. W. Palmer and Mrs. F. Barrett; second, Mr. C. Turner; third, Mr. J. Douglas, with good showy varieties having large heads of bloom, but stale. For four alpine, there was but one exhibitor—Mr. Patterson, Sunderland, who was placed first with King of the Belgians, Diadem, Mrs. Dodwell and Philip Frost. The gold-laced section of Polyanthus was poor, the weather having proved too hot and dry. Mr. J. Weston had the best six, staging Napoleon, John Bright, Lancashire Hero, Cheshire Favourite, George IV. and Lancer; second, Mr. R. Dean, Ranelagh Road, Ealing, with seedlings. With three varieties, Mr. A. J. Sanders was first, having Napoleon, John Bright and William IV.

With twelve plants of fancy Polyanthus Mr. J. Douglas was first and Mr. R. Dean second, their plants showing traces of the effects of the hot, dry weather. In the class for Primroses Mr. Douglas and Mr. Dean were first and second, Mr. Douglas staging some bright specimens, having regard to the weather. The class for double Primroses did not bring a single competitor. In the class for a basket of Primrose plants arranged for effect, Mr. Douglas was placed first with a basket of Polyanthus, this being the first time that other than true Primroses were suffered to be shown, and as a distinct line is drawn in the schedule between Primroses and Polyanthus, it should have been observed in this class. Mr. R. Dean was second with a basket of true Primroses.

The Hardy Plant Nursery Company, Guildford, were the only exhibitors of twelve species of *Primulas*, and it must be admitted they were somewhat poor. They included *Poissoni*, *japonica alba*, *farinosa*, *Auricula-Balbisi* (?), *floribunda*, *sibirica*, *bellunensis*, *intermedia*, *Murettiana*, *rosea*, *cliliata*, and *marginata*. Mr. J. Douglas was first with a collection of six species, having *P. Sieboldi*, *laciniata*, *japonica*, *luteola*, *verticillata*, *intermedia*, and *obconica*, all in good character. The only group of any species or varieties of *Primulas* in a box or basket to occupy a space of 12 superficial feet came from Mr. J. Douglas, an excellent arrangement in stone and Moss, and comprised varieties of *P. japonica* and *Sieboldi*, with *verticillata*, *obconica*, *floribunda*, *Auricula* and varieties of alpine Auriculas of a showy character. The premier Auricula was the green edge Shirley Hibberd, shown by the Rev. F. D. Horner, and in addition it was awarded Mr. W. Smith's special prize for the best seedling green edged Auricula. Seedling Auriculas.—A first prize was awarded in the self class to Engineer (Sander) from Mr. A. J. Sanders, a dark self in the way of Black Bess with a broad paste and good tube, decidedly of a promising character. Of new alpine, gold centres, Mr. C. Turner was placed first with F. Knighton, the black ground edged with deep salmon, and second with Dora, of much the same character, but paler on the edge. White centres: Mr. C. Turner was first with Winnifred, dark ground with an edge of lilac-mauve, a very good variety. Mr. W. L. Walker was second with a seedling in the way of Winnifred, not so good, and with a creamy centre.

ROYAL BOTANIC SOCIETY.

APRIL 26.

ONE could form some idea of what this exhibition might be like from the display of the previous day at the meeting of the Royal Horticultural Society, but a quantity of fresh exhibits was forthcoming, whilst Orchids and Auriculas were not so numerous. The fresh attractions were chiefly the exhibit of early flowering and fine-foliated plants from Messrs. Veitch and Sons, an increase in the number of pot Roses by Messrs. W. Paul and Son, with *Pæonies* in pots from Mr. T. S. Ware. Some very good produce was staged in the competing classes, but the competition was not keen on the whole. The general opinion was that this was decidedly the best spring show that has ever been seen in these gardens during April. Certainly we have ourselves never before had the pleasure of inspecting such a fine and comprehensive display. For six Indian Azaleas in the amateurs' class Mr. Scott, The Holme, Regent's Park, was a very good first, the plants of medium size, the best being Charmer, Bernard Andreas alba, and a promising seedling white, with occasionally a flaked flower; Mr. Eason, Hope Cottage, Highgate, a fairly good second, with larger plants not so well flowered. In the corresponding class for nurserymen there was only one exhibit, that being of no special merit. For twelve pots of *Spiræa japonica*, Mr. Scott was first with large plants, freely flowered, of the old variety, and Mr. Morle, Fenchurch Street, E.C., second with smaller plants of *S. j. multiflora compacta*, more dense in the spike, but hardly so pretty. Messrs. Paul and Son were easily first for six pot Roses, showing in their usual style, Celine Forestier and Violette Bouyer being the two best, the latter extra fine, Mr. Rumsey, Waltham Cross, taking second prize with smaller plants. Mr. Scott was the only exhibitor of *Clivias*, showing large specimens of the old variety very freely flowered, he being in the same position with twelve *Dielytra spectabilis*, pale in colour. Messrs. Paul and Son were alone in the class of *Amaryllis* with twelve excellent examples, making a fine display, Enchantress, a robust light variety, and Cleanthus, a bright orange-scarlet, being the finest. The same firm were first for a collection of alpine, showing several fine masses of flowers, amongst which *Phlox stellaria* var. G. F. Wilson, *P. canadensis*, *P. amœna*, *P. Nelsoni*, *P. frondosa*, *P. setacea*, and *P. atropurpurea* were in first-class condition; *Gentiana acaulis*, *Cheiranthus alpinus*, *Bellidistrum Michelli* (with Daisy-like flowers), and *Anemone sylvestris*. The Guildford Hardy Plant Nursery Co. were second in this class with a most effectively arranged group, more attractive certainly than the first prize collection, amongst which the mossy Saxifrage were conspicuous, other good things being *Phlox divaricata*, pale lavender-blue; *Androsace coronopifolia*, *Dracocephalum grandiflorum*, *Adonis pyrenaica*, *Trollius napellifolius*, *Androsace sarmentosa*, &c., all tastefully set up. For twelve tuberous Begonias, Mr. Thos. Ware, Tottenham, was first, being the only exhibitor, but who showed surprisingly well for so early in the season; the finest of these were *Begonia Sunset*, a single variety, with large flowers of a bright orange-scarlet shade, and Bexley White, a pure colour, with large flowers (single). Of the doubles the finest were Princess May, white, with pale primrose centre, and Picotee, large, with distinct Picotee-like edging; these were a dozen of remarkably well-grown plants. From the same source came a fine collection of *Primula Sieboldi* in the best varieties, being the only competing exhibit, but worthily taking the first prize, *Admiration*, Ware's White and Magenta Queen, with the type, being the finest varieties. The only exhibit of *Cinerarias* was that from Mr. J. Douglas, who had large showy plants freely flowered and in good condition. *Mignonette* was best shown by Mr. Morle, who had *Machet* in very fine condition, the trusses large, the plants dwarf and sturdy. The best twelve show Auriculas were those from Mr. Douglas, the varieties similar to those exhibited the previous day at the R.H.S. meeting, Mr. Sanders, Bookham Lodge, Cobham, being a good second.

Mr. C. Turner, Slough, won easily with twelve alpine varieties, Winnifred and Charles Turner being two of the finest of these; Mr. Walker, Dunollie, Reading, came in a good second. In the class for twelve Polyanthus, Mr. J. Douglas was the only exhibitor, with large plants in fairly good condition. Mr. T. S. Ware had the only competing exhibit of hardy herbaceous plants, but these were in first-rate condition, the finest being *Doronicum plantagineum excelsum*, *Spiraea japonica multiflora compacta*, *S. astilboides*, *S. palmata*, *Silene virginica* (bright scarlet), *Trollius europæus* (extra good), *Polemonium repens*, *Iris pumila cœrulea*, *I. missouriensis*, *Primula Sieboldi* in variety and other good things, making a splendid display and easily taking the first prize.

Of miscellaneous exhibits there was a large quantity of first-rate things and diversified in character. Messrs. J. Veitch and Sons showed a magnificent group of forced shrubs and hardy foliage plants, comprising many most useful and valuable decorative plants. *Spiraea astilboides* in baskets was in grand condition; so were Moutan *Pæonies* and *Azalea mollis*, of which Anthony Koster, a rich self coloured bright yellow of great freedom, was one of the finest; this is one of the best things in its way that has been shown for a long time. Of the double kinds, *Phidias*, a straw-coloured variety, compact in growth, and very free, and *Le Titien*, slightly darker, were two of the finest; *Ribera*, another semi-double, a soft bluish, being a good variety of this race. Two noteworthy novelties were standards of *Genista anxantica* (yellow) and *G. præcox* (cream colour), both having dense, compact heads full of flower. Of the fine-foliaged plants, the Japanese Maples were conspicuous, embracing all the finest kinds, as *A. palmatum*, *septemlobum*, *elegans purpureum*, *palmatum dissectum*, and others with dark foliage, whilst of those with green leaves there were *A. japonicum* *Parsonsi* and *A. palmatum flavescescens*. Cut blooms of *Wistaria sinensis alba* in long racemes were also included (large silver medal).

Of new plants Messrs. Veitch and Sons had included with the above some plants of the rapidly improving race of hybrid *Streptocarpus* in great diversity of colour, and of Orchids two fine hybrids in *Lælia Latona* and *Lælia Cattleya Ascania*, *Rhododendron* Lord Wolseley, a fine hybrid, bearing an immense truss of orange coloured flowers; *Vriesia Morreni*, a dwarf variety; and *Strobilanthes Dyerianus*, previously noted. Messrs. W. Paul and Son staged a grand group of pot Roses (silver medal).

Messrs. H. Low and Co. staged a group of Cape and New Holland plants in profuse flower (silver medal). Messrs. J. Laing and Sons showed a miscellaneous group of Orchids, including a good plant of *Vanda tricolor*, *Clivias*, dwarf *Cannas*, *Ericas*, *Anthuriums*, new *Caladiums*, and other plants; also a plant of *Fuchsia triphylla*, a seldom seen species (silver medal). Messrs. J. Peed and Sons showed a very pleasing and attractive group of Orchids, including *Cymbidium Lowianum*, *Ericas* in season, as *ventricosa* varieties, with early *Pelargoniums* and other serviceable decorative plants (silver medal). Mr. Tasker, Middleton Hall, Brentwood, staged a large group of pot Roses and *Cannas*, as shown the previous day at the R.H.S. meeting, the *Cannas* and *Roses* together making a very effective group, the former having carried well (silver medal). Mr. Rumsey staged in the conservatory a group of pot Roses, which made a very pleasing exhibit; being arranged on the ground they were seen to the best advantage; cut blooms were also included, *Niphetos* being extra fine (silver medal). Mr. T. S. Ware had a miscellaneous group of tuberous *Begonias*, including some beautiful varieties, of which Lord Byron, bright reddish scarlet with white centre; Miss Jeannie Tell, rather small, but of fine form, deep scarlet; *Regina*, *Citrina*, and several other good kinds with extra large showy flowers (silver medal). Messrs. Paul and Son, in addition to their class exhibit of *Roses* in pots, had others also, both bushes and standards, all in good flowering condition (small silver medal). Messrs.

James and Son had a group of their finely-grown herbaceous *Calceolarias*, to which reference was made in the R.H.S. report (small silver medal). Mr. T. S. Ware had a very pleasing and showy exhibit of *Pæonies* in pots, which caused a large amount of interest; these were flanked with dwarf *Azalea mollis* (small silver medal). Mr. Douglas had an extensive miscellaneous exhibit of alpine and show *Auriculas* with *Primroses*, species and varieties (small silver medal). Messrs. Barr and Son showed *Daffodils* extensively in the best kinds, with other hardy herbaceous flowers, the former being in large variety and fresh condition. Another exhibit by the same firm of late *Tulips* was of unusual excellence. A small group of alpine plants came from the same source. Mr. Chas. Turner staged a number of *Auriculas* in the best varieties of each section, which, for the season, were in capital condition (large bronze medal). Mr. J. Walker, Thame, showed a fine lot of *Maréchal Niel* and other *Roses*, with cut zonal *Pelargoniums* in good variety (large bronze medal). Other exhibits comprised baskets of *Azalea mollis*, single and double of the best kinds, and *Rosa Polyantha The Pet*, a charming white variety. Mr. Pike, Park Road, Acton, showed his fine Tree *Carnation Uriah Pike*, a dark variety of great promise and delicious old clove perfume; the colour is a shade or two darker than in the old Clove. Mr. Knowles, Woking, exhibited a group of *Daphne cneorum*, and what was stated to be an improved form of the same. Messrs. Cutbush and Sons showed a few things, including *Leschenaultia biloba* major and a new variegated *Abutilon*, which was suffering from some cause that prejudiced its appearance.

A full prize list appears in our advertisement columns.

ROYAL GARDENERS' ORPHAN FUND.

THE annual dinner, as already announced, was held on Wednesday evening last under the chairmanship of Baron Ferdinand de Rothschild, M.P. The dinner was well attended by all the leading supporters of the institution. The chairman, before proceeding to the immediate business of the evening, proposed the usual loyal toasts, alluding to the fact of H.R.H. the Princess of Wales having become the patroness of the institution. The toast of "The Prosperity of the Royal Gardeners' Orphan Fund" was proposed by the chairman and advocated in a most earnest and practical manner, clearly setting forth the benefits of the institution to the orphan children of gardeners, showing the claims it has upon all interested in the pursuit of horticulture throughout the United Kingdom. The hon. chairman alluded to the fact of the profession of a gardener having its peculiar risks to health and the need of increased support for the orphan children of gardeners who may have been cut off in their prime before having had time to lay by a provision for their families. He strongly urged the increased subscriptions of small amounts towards the permanent building up of the funds. The toast was responded to by Sir J. D. Llewellyn, Bart., who, as one of the trustees of the institution, was in a position to strongly support the chairman in his practical remarks. He alluded to the progress made by the institution since its birth in jubilee year (1887); also to the continued increase in the number of children who had been placed upon the funds of the charity year by year since its commencement. He also drew the attention of the company to the munificent donation of £500 from Mr. and Mrs. Veitch in commemoration of their silver wedding. He stated that the institution had now the sum of £6570 invested, a sum which should be sufficient to inspire confidence in the benefits of the charity—a fact that is worth the notice of the gardeners throughout the country, and worthy of their increased support.

Sir Trevor Lawrence, Bt., proposed the popular toast of "Gardeners and Gardening," and in his remarks acknowledged the indebtedness of the community to gardeners in their professional calling. He contrasted most favourably the abilities of the

British gardener with that of others employed in the profession abroad. Mr. N. Sherwood, who replied in suitable terms, stated that, in his opinion, gentlemen should, where they were so charitably disposed, be solicited to support the charity in the further interests of the orphans by contributing annually to their education, prefacing his remarks in a practical manner by offering to provide for the education of an orphan who, under most distressing circumstances, had been bereft of parental support. The health of the chairman and thanks for his efficient services during the evening were proposed by Dr. Walker and suitably responded to afterwards. The health of the visitors was proposed by Mr. R. Dean and responded to by Messrs. Arnold White and J. Collinridge.

The following were some of the chief amounts promised during the evening and announced by the secretary, viz., Messrs. Hurst and Son, £100; the chairman, £50; Messrs. de Rothschild, £25; Sir Trevor Lawrence, £10 10s.; H. J. Veitch, £10 10s.; Mr. Monro, £14 14s.; Mr. Dean, £10 10s.; Mr. Wimsatt, £10 10s.; J. Wills, £10 10s.; Mrs. Wills, £5 5s.; F. Sander, £18 18s.; Mrs. Manning, £5 5s.; Thames Bank Iron Company, £9 9s.; A. W. G. Weeks, £8 1s., the entire proceeds amounting to upwards of £550.

The weather in West Herts.—The past week has been by far the hottest we have yet had this year. On four days the temperature in shade has exceeded 77°, while on no night did the exposed thermometer show more than 5° of frost. The day temperatures have been higher than those in an ordinary July. In fact, in only one of the last eight years has the weather during the daytime in July been as hot, taking the month as a whole, and that was in the Jubilee year. On Monday last the difference between the lowest reading at night and the highest during the day amounted to as much as 40°, and this in a thermometer screen 4 feet above the ground. During the last fortnight the temperature of the ground at 1 foot deep has risen about 10°, the lowest temperature at night being as a rule about 3° lower than that recorded during the daytime. Last evening (Tuesday) the temperature at this depth rose for the first time this year to 60°. The drought still continues. Indeed, not a drop of water has come through the 2½ feet of soil in either of my percolation gauges for nearly a month. On Tuesday the air was very exceptionally dry, the difference between the readings of a dry bulb thermometer and that of one with its bulb kept constantly moist during the afternoon exceeding 20°. On five days out of the seven the record of bright sunshine has varied between ten and twelve hours. A Lilac tree in my garden came first into flower on Friday, or twenty-five days earlier than its average date of flowering in the previous seven years.—E. M., Berkhamsted.

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All of our readers who are interested in the improvement of cottage homes are invited to help us to make Cottage Gardening known. It is published at the very lowest price to meet the wants of those for whom it is intended, and copies will be sent for distribution, free, by the publishers, Messrs. Cassell and Company, La Belle Sauvage, Ludgate Hill 3, O.

No. 1120. SATURDAY, May 6, 1893. Vol. XLIII.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare.*

ORCHARD AND FRUIT GARDEN.

FREE GROWTH OF PEACH TREES.

ONE of the principal hindrances to Peach and Nectarine culture under glass is the comparatively small amount of head room allowed to the trees. In some instances this is the fault of the cultivator, who tries to fruit four trees successfully where two would be quite as many as there is good room for. More often than not, however, it is the house or else the interior arrangement that is to blame. Low walls, short roofs, and small trellises are all more or less faulty, and sources of much labour and worry to those who have to contend with them. If the trees can only be allowed to have their head they will not exactly run away, but, on the contrary, form wood of the most productive description, and soon cover a surprisingly large area of trellis or wall space. Where, however, the trees have perforce to be much restricted they grow too rankly, especially if the border is new and moderately strong, this necessitating frequent partial lifting and root-pruning before they can be got to bear fruit satisfactorily. It is these much-checked trees that are the most addicted to shedding their buds prematurely, and instances have come under my notice where young trees have been partially lifted three times before they could be made to produce growth that would crop freely. It is a curious state of affairs when red spider is considered a good friend to a Peach grower, yet there are men who assert, with some reason too, that a bad attack of this little pest is the precursor of a good crop of fruit, more especially in the case of vigorous young trees. In this neighbourhood a number of fairly large and previously very clean, healthy trees were last summer, for the first time, badly overrun by red spider, and this season, for the first time, they are bearing grand crops of fruit. The red spider apparently has done more for the owner than repeated root prunings.

It has been repeatedly shown in these pages that much restricted trees, in addition to being the last to arrive at a profitable state, are not unfrequently the first to wear out. Even if this is only an imaginary point, there is yet much to be said in favour of large trees, especially if the surplus fruit is marketed. Much restricted trees, however well they may be cropped, rarely command the admiration of experienced fruit growers; whereas those who succeed in growing extra fine specimens have just cause to be very proud of them. I have more than once drawn attention to fine specimen trees met with in different parts of the country, and now add those to be seen at Canford Manor, Wimborne, to the list. The whole of a roof 36 feet by 14 feet has been closely covered by two trees in about four seasons, and they would have spread much further had there been room. They are standards with grand healthy-looking stems, and were planted straight from a nursery. A tree of Royal George is as near perfection as it is possible to be, the branches being remarkably well balanced, straight and cleanly grown, and it is bearing an

enormous crop. Mr. Crasp, the gardener at Canford, now regrets not having given the whole of the house up to this tree, and there is no doubt about its capability to cover the entire roof very quickly and well. The other tree is of the variety Raymakers, a Peach not much grown in this country, but said to be very popular in Belgium. Mr. Crasp considers it a handsome and in all other respects very superior variety. In order to see what can be done in the way of covering a large roof area rapidly, a tree of Hales' Early Peach has been planted in the angle formed by the junction of a house partly built against an east wall and partly against a south wall, and this promises to be a magnificent specimen. There is no grossness about it, but the young wood is long, of medium thickness, and perfectly straight, while the crop the tree is carrying is more than enough to steady it. Grape Vines are planted on each side of this tree, these being heavily cropped with a view to cutting them out as the Peach tree requires more room. Mr. J. Simpson, the pioneer of the extension system of training, would, I feel certain, be well repaid for a journey to Canford either during this or next season.

The one great objection to the growth of extra fine trees is the fact that these do not always afford a sufficiently long succession of fruit, gluts being undesirable and very difficult to prevent. Planting more trees in greater variety is the way out of the difficulty, but that is no reason why restriction should be unduly practised during their early career. Hard pruning, with a view to framing out a well-formed tree, if persisted in promotes the undesirable rank growth, with its attendant evils, already alluded to. In these go-ahead days we cannot afford to wait several seasons for good crops from young trees, but the aim should be to copy Mr. Challis's example at Wilton House, near Salisbury. In this instance a large Peach house was planted with maidens during one winter, and at the end of the second summer these had grown into fairly large trees, or capable of producing on an average three dozen fruits each, this actually being done the following season, or, to be quite understood, after only two clear seasons' growth from the time they were first cut down. Instead of the extra strong young growths being denuded of side shoots and thereby spoilt as far as fruiting capabilities are concerned, these latter ought only to be thinned out and those best placed laid in. The more these secondary shoots are pinched out, the more they are produced; whereas, if some of them are reserved and laid in, this checks the formation of more side shoots, the extra vigour being diverted to those reserved. Not only do the latter ripen sufficiently to bear fruit the following season, but last season some of the secondary shoots sub-divided with me; the third breaks were laid in thinly, also ripening and, with the first and second growths, flowering this spring. Extra rank, badly placed shoots are certainly undesirable, and these ought to be prevented from forming as much as possible. Occasionally, however, one or several moderately strong growths may be laid in and allowed to divide freely with advantage, and if there is not much width to cover, there is no good reason why one of them should not be in the centre of the tree. Only give the strong young shoots room wherever they are, and the secondary growths they produce will be of good service rather than otherwise.

W. IGGULDEN.

Strawberry Waterloo.—This I find a capital variety for forcing in such a place as a cool Peach house along with such sorts as President and Sir J.

Paxton. It sets freely, the fruit being, if not extra large, of good shape, and of really good flavour.—S.

Apple Blenheim Orange.—The fruit of this variety is such a favourite of mine, that I can assure "D. T. F." that all that I knew was done to promote fruitfulness in the way of lifting, replanting, and after attention to both the bush and standard trees. In doing this I did not find so readily, as "D. T. F." assumes should be the case, the cure for barrenness. I endeavoured also to force its roots along fertile lines, but without avail. I venture to think "D. T. F." has not had to contend with this variety in soil totally unsuited to its growth, or at least unsuited to the maturation of the wood made annually. In my case the trees never made those timber-like shoots as suggested. Whatever growth was made in the shape of shoots 1 foot long and not thicker than an ordinary cedar pencil decayed annually during the winter in spite of the lifting, &c., the trees received. I presume the soil in which "D. T. F." has been growing his baby trees was quite different to that he would find here.—E. M.

Apple Worcester Pearmain.—In answer to "E. L.'s" note I repeat that Worcester Pearmain should be largely grown. If "E. L." can recommend an Apple to take its place and beat Worcester Pearmain in earliness, quality, appearance, and cropping capabilities I shall be pleased, but to compare an early dessert Apple with a late cooking kind like Wellington, or even with the Blenheim which comes into use at Christmas, is altogether beside the mark. I do not consider Apple culture perfect until we can supply the table with good home-grown dessert fruit every day in the year. Worcester Pearmain is a good eating Apple when well grown, although, like King of the Pippins (one of the most profitable Apples in cultivation), devoid of the distinct rich flavour which characterises an Apple of first-class quality, and as a fruit grower for profit, let me tell "E. L." that our first quality Apples, such as Cox's Orange, Ribston, and Blenheim, are, unless in some few favourable positions or soils, failures from a business point of view. The perfect and profitable early dessert Apple has yet to come. At present we have to rely for any profits chiefly on such varieties as Lord Suffield, Ecklinville, Stirling Castle, &c. The market grower's first consideration, if he is to succeed with any kind of fruit, must be, does it crop well and does it sell well? I have very large thriving trees of Blenheim Orange receiving treatment and growing on land particularly suitable for producing heavy crops of most kinds, yet these Benheims have not borne a full crop once during the past seven years, and are certainly failures compared with other inferior, but heavily cropping varieties growing near.—E. W. B.

—"E. L.'s" protest against this Apple (p. 329) is well grounded. It certainly is not worth growing while we have so many infinitely better kinds. I look on it as one of those Apples which bring home-grown fruit into disrepute, showy and nasty. Of course it is a nice looking Apple, but there its merits end, and I am not sure that even this is a merit, as it is only calculated to mislead those who do not know its want of quality. I cannot agree in any way with what "E." (p. 311) says about it, for though full-flavoured early Apples are, as he says, scarce, there are plenty as early and better than this. When grown on good ground it is apt to lose the high colour which recommends it, and which it gets on a poorer soil, though it improves in size. In each case the quality is the same—bad.—J. C. TALLACK.

Peaches and Nectarines on open walls.—Whilst these were in flower this spring I noted there was an absence of bees paying visits to the trees. Now I observe that the set of fruit, although sufficient in most cases for a crop, is not nearly in proportion to the bloom, which of itself was vigorous enough. There must be a reason for a proportionately thin crop of fruit. It may certainly be attributed in some instances to the unusually sharp frosts—10°, 12° and 13° for some few nights in succession. Again, it may have been possible that in some localities, probably on the

chalk, for instance, lack of moisture at the roots would be an ulterior cause. But with good protection and sunny weather, as well as sufficient moisture in the soil, I am disposed to think the lack of bees, as in my case, would have something to do with it. Fortunately my trees were mulched some weeks back, one watering already having been given since then. I note that green fly, too, is making much headway, and before this is in print measures will have been taken, by the use of quassia and soft-soap extract applied through the garden engine, for its speedy destruction. If we have much more of this dry and sunny weather we may expect early attacks of red spider also; this, however, gives me no anxiety, for the trees are daily syringed as a preventive.—SOUTHON.

SYRINGING IN VINERIES.

THE comments on syringing Vines by "E. M." (p. 274) open up one of those phases in Grape culture under glass upon which all cultivators are not agreed. There cannot be any question, however, that good Grapes have been grown under each system. I have always been under the impression that no hard and fast line can be laid down, the internal arrangements, position of the structures, condition of the weather, and so forth being the best guide how to proceed. This season has been an exceptional one, so far as regards the abnormal amount of sunshine over what we generally experience, and, taking this into consideration, I have given all our Vines a gentle syringing at closing time, the water, of course, being clean and soft, therefore not leaving the least discolouration behind. If I had the same water to use as "E. M." has, I should not use it. Our water is off the limestone, but this I use for watering the borders and damping the floors. I do not think it can be claimed that syringing up to the time the buds burst, or until the shoots have grown 2 inches in length, can possibly affect the general health of the Vines, this depending entirely upon other phases of culture. To a certain degree the free bursting of the buds depends upon the general health of the Vines. Although I practise syringing the rods until the buds burst, yet I know the Vines here would break just as well without it, and I may say that I never saw Vines break more freely, whether early or late. In another garden that I am well acquainted with there is the greatest difficulty imaginable in getting the buds of the early Vines to break kindly, and yet syringing is practised freely and also the evaporating troughs kept filled. Yet good Grapes are produced. My impression is that the grower should use discrimination. I like to syringe the rods until the buds burst, and the base of the stems and which are near the hot-water pipes I syringe every afternoon. To syringe indiscriminately after the buds burst would obviously result in failure. On the other hand, I like to put a syringeful of clean soft water on a fine afternoon into any part of the lower laterals which may be out of the way of the bunches, and especially in corners. To treat a vineyard as if it were a fine-foliaged plant stove as regards syringing and damping down is sheer nonsense. A practice which I have carried out successfully is to give the foliage after the Grapes are thinned and before they commence to colour a thorough washing. This only if there is a suspicion of spider or the leaves have blacks on them. There is not the least fear of disfiguring the bloom. I fill the garden engine with clean, soft water, and on to the jet fix a length of pipe that will reach to all parts of the roof, this also having a rose attached to form a gentle shower. One man works the engine, whilst another, mounted on the top of steps, holds the hose, holding it close to the foliage, the water falling downwards over the bunches. Some people are so frightened about a little water going over the foliage, because either they do not believe in the practice or think the bloom would get disfigured, but yet they allow the foliage to be devoured by spider.

Evaporating troughs as a means of applying water to the atmosphere I have now given up for

some years, as being a very unnatural mode. My impression is that these are the main source of warts on the under sides of the leaves. Although these warts cannot be termed a disease, yet they check the proper functions of the leaves. Of course they may be present even where evaporating troughs are not used, and this through keeping the structure too close and warm, but nevertheless they aggravate the evil, and do not add to the health of the Vines. Y. A. H.

Mulching fruit trees.—With the promise of an exceptionally heavy crop of fruit and with almost a tropical sun day after day, the necessity for protecting the roots of fruit trees from drought becomes of pressing importance, for it is useless waiting until all the moisture has been extracted from the soil. Fortunately, although the surface is undoubtedly now very dry, there is a good reserve of moisture about the roots, as the heavy downpour in February came most opportunely to swell up the buds and carry the trees safely through the period of blossoming and setting the fruit. The swelling of such a heavy crop as is generally found on all kinds of fruit trees this year will tax them to the utmost, especially if dry weather prevails for any length of time. Mulching may be done in several ways, and does not always imply manuring as well. Doubtless there are few better plans than that of mulching with half rotten manure, as this answers a double purpose. It is not, however, always possible to find material of this kind for all the trees that require it, and as a substitute any kind of litter that will shade the soil and prevent evaporation may be employed. I find road sweepings a capital thing when put on as dry as dust, for they check evaporation about as effectually as any kind of covering, gradually work into the soil and do good in many ways. Ashes or sawdust may be utilised, but are better removed as soon as the necessity for their use has passed away.—J. G., *Hants.*

Frosts v. fruit.—Whenever the full story of the recent sharp frosts upon the fruit crops is told we shall probably hear of many incongruities. One of the oddest things I have heard of was an attack by sparrows upon the small set fruits of a Nectarine tree against a stable wall, and these pests were only driven off by netting the tree over. Then they transferred their attentions to an Early York Peach tree, stripping both fruits and leaves, until that also was netted, but a Royal George close by remained untouched. I saw an Apricot tree on which the frosts of April 13 and 14 had killed every fruit on the spurs, but there was a good crop, happily, left on the closely nailed-in branches. In one of the driest and airiest of situations Plum bloom on open trees seemed quite unhurt, whilst Pear bloom seemed to have suffered much. If that be a general type of the present condition of bloom we shall have plenty of Plums, but few Pears. Possibly on walls the case may be better for the latter fruits. Cherries, too, have suffered much in places. The best promise is on the Morrellos and on other trees with the bloom on the under sides of the branches. Some precocious Strawberry blooms have been blackened, but the harm done in this case would be trifling. Apples so far have not been appreciably injured. Very much hope for the bloom has been expressed because the nights have been so dry. On the other hand, it would seem as if no amount of dryness could protect the bloom from repeated severe frosts, especially in the low-lying districts, where Gooseberries and Currants have in many cases been much injured.—A. D.

Cropping Peach borders.—Permit me to assure Mr. Iggulden that, theoretically, I am entirely in accord with him in respect to the impropriety of cropping Peach borders, and admit that I ought to know better than to suggest anything about such cropping. Really we ought no more to crop a Peach border than a Vine border; still, we do so everywhere, and practice belies theory with remarkably successful results. At Swanmore Mr. Molyneux has a first-rate Peach wall, in front of which is a border full of herbaceous

plants, yet both trees and plants thrive splendidly. True, he has some 3 feet of mulched alley in front of the trees, but the Peach roots, it is certain, do not stop there. One of the finest walls of Peach and Nectarine trees I have seen anywhere—at Ditton Park, near Slough—has about a 3½ feet alley mulched in front of the trees, and then 10 feet of vegetable-cropped border, and so it is almost everywhere. The south aspect, indispensable to the Peach tree, is not less so to the gardener for flowers and vegetables. I venture to think that for one specially good Peach wall with non-cropped border, there may be found fifty as good with cropped borders.—A. D.

STONELESS BERRIES IN GRAPES.

THAT some varieties of Grapes are more prone to this evil than others is well known, and unless means are taken to artificially secure their fertilisation, the result is a plethora of small or stoneless berries, when, of course, the bunches are useless. The good or careful cultivator, knowing this, takes good care to lessen the evil as much as possible. Local conditions have much to answer for this want of fecundity. I have had experiences in this matter which have puzzled me not a little, and this with Black Alicante. I daresay some people would think it absurd to mention such a thing as there being a difficulty in setting Black Alicante, but I have as much trouble with this variety as ever I have had with Alnwick Seedling or Kempsey Alicante. With Lady Downe's in the same house, I also resort to artificial fertilisation, but with Mrs. Pince, a variety which in some cases fails to set freely, I take good care that the temperature does not fall too low during the night or early morning, or so as to cause a condensation of moisture on the stigma. I do not refer to the glutinous exudation which proceeds from such varieties as Alnwick Seedling, Kempsey Alicante, Royal Vineyard and a few other varieties I could name, but the natural condensation of moisture. I once saw a bad set of Foster's Seedling, simply through allowing the temperature to fall too low. At that time, too, the weather was dull and wet, so there was no possibility of counteracting influences during the day from bright sun. Syringing the bunches whilst in flower on fine days has a far different effect, as at this time the stigmas are dry, and the water applied through a syringe so as to cause a gentle shower over the bunches conveys the pollen direct and so assists fertilisation.

Local conditions, such as a want of a preponderance of lime in the soil, are also against proper fertilisation, but there are other causes at work, and which often puzzle the grower. I am very much of the opinion that the roots working in too cold a medium have much to answer for, but, of course, only in isolated instances. This occurred once with me, through the roots of one of our Alicante Vines escaping through an aperture into the cold subsoil. Directly the shades of evening came on moisture would commence to settle on the outer edges of the leaves (although a safe amount of heat was in the pipes), and whilst in bloom also on the stigmas. I am under the impression that a light soil favours fertilisation, that is, in the case of those varieties which are generally known to set well without extraneous aid, but even in these cases see that the temperature does not fall too low.

Those varieties which are known to have this exudation of glutinous matter must be assisted if fertilisation is to be perfect. I have had good results by drawing a soft hand over the bunches, and if other varieties are in bloom at the same time, first draw the hand over these so as to gather pollen. A camel's-hair brush is also useful. I use an ordinary "grainer's" brush, this being about 2 inches in width. With Alnwick Seedling and Kempsey Alicante, first draw the hand over the bunches to remove the glutinous matter, afterwards either drawing the hand or brush previously charged with pollen. By treating Alnwick Seedling in this manner the berries have set splendidly. It is impossible to get large berries without the full complement of stones. A. YOUNG.

FLOWER GARDEN.

A FISHERMAN'S GARDEN.

AMONG the many garden charms of our island home some of the most delightful occur on the seashore, especially to lovers of Carnations, Roses, Fuchsias, and good Peaches, which are very fine at the seaside, but the fisherman has not much chance of growing them. This is a little picture of a shore garden in Cornwall, from a water colour by Miss Marian Chase in our possession. The Fuchsia on one side of the steps and the Rose and tub on the other side are suggestive of how to make the best of small chances.

SOME GOOD ANNUALS.

THE NEW HYBRID ANNUAL CHRYSANTHEMUMS or Crown Daisies are very good, but they do not seem to be quite fixed, many of the flowers coming

plants that stand the winter will cover a square yard of ground at blooming time. It is wonderfully effective in the bright sunshine, and looks well covering a sunny bank. It stands dry weather remarkably well, and for this reason is well suited for light sandy soil.

COREOPSIS TINCTORIA is an old inmate of our gardens, and during the last few years some very richly coloured forms have been added. The variety called *atrosanguinea* is unique in colour among annuals. This being of slender growth and of a somewhat brittle nature, is best grown in clumps of a dozen or more plants together, as then with a few brushwood branches put round they sustain each other against rough winds and heavy rains, which when they are covered with flower do them serious damage when grown singly and unprotected. Some of the

GOETIAS should find a place in every garden. I do not know of anything more showy than a mass of Lady Albemarle when it can be had true. Inferior strains of this fine annual are, I find, common, the flowers being wanting in the rich crimson hue that should distinguish them. One great merit of this is that the growth is so robust and the habit so compact, that the plants do not get broken by stormy weather. Although groups of it have a fine appearance, I rather prefer to see

SALPIGLOSSIS, grown either in the open ground or in pots, are very beautiful. There are some shades of colour in them that one can hardly find in any other outdoor flower. Sown in autumn and brought along under glass in a genial temperature, they are very useful for spring decoration. The seeds come up freely enough in the open ground if the weather is warm and moist, but it is better to sow under glass, as the plants come into bloom much earlier. J. C. B.

Lily of the Valley.—This, although well and largely grown by many, is not generally seen in such good condition in private gardens as one would expect, a prevalent notion being that it does not like being disturbed at the root. This is only partially correct, for if left too many years in one place the soil gets exhausted, and the roots and crowns get so matted together, that it is impossible for the flower-spikes to be so fully developed as they are in beds where the crowns get space to grow to full size. My plan is to lift the most crowded beds during the winter, carefully pick out all the plump flowering crowns for forcing, and make new beds of all that are not strong enough for forcing. I do not think there is any better place than between rows of dwarf fruit trees planted about 12 feet apart, as this leaves room for a bed of Lilies in the space that is only slightly shaded by the trees. All they require is keeping free from weeds during the growing season and spreading a good mulching of rotten manure over the crowns in winter.—J. G. H.

Myosotis alpestris Victoria.—This new or selected form of a favourite Forget-me-not is likely to be a boon to all who have to keep their flower beds gay in spring. It has a very distinct tufted or rosette-like habit, which makes it specially valuable for edgings or anywhere where compactness is an object. The flowers are large individually and freely produced, each shoot bearing quite a rosette of short-stemmed flower-heads, in the centre of which is a large double flower almost hidden by the others until closely examined. The colour is a lovely azure blue with a yellow centre. The plant makes an excellent companion to that gem of the family, *M. dissitiflora*, with the advantage that it can be easily raised true from seed. J. C. T.

Sparrows and Primroses.—I quite agree with Mr. Wood (page 298) that it is thirst which causes the sparrows to work such havoc among Primroses and other things; but I think it is that insatiable thirst for mischief, for which the sparrow stands pre-eminent of all the pests the gardener has to contend with. I have to-day been obliged to put nets over some that are not more than 5 yards from the edge of the lake. In that case it certainly could not have been want of water that caused the sparrows to take the Primrose flowers for the sake of any drop of dew or moisture contained in them. I have not seen that sparrows make any distinction between the choicest Polyanthus and the commonest Primrose, but attack them all in the same manner, pecking and tearing them to pieces. One thing I have noted here, that wherever the Primroses are growing wild among the Grass they are scarcely touched; whereas, on beds or borders they are nearly all spoiled, whether near the edge of the water or quite away from it.—H. REYNOLDS, *Didlington Hall, Brandon.*

Bamboo canes for arches or pergolas.—Bamboo canes make handsome garden arches if the uprights are put in perpendicularly and the cross pieces tied across by wires. The ends should project both upwards and outwards in the shape of the corners of an Oxford picture frame. Side pieces can be tied along also. It remains to be seen how long such arches will last, but it is my opinion that they will do so longer than the so-called rustic work. It is to be regretted that brown Bamboos cannot be had of any size, as the light yellow tint of most of the larger imported ones is a little too pronounced. I have recently



A fisherman's "garden" in Cornwall. Engraved for THE GARDEN from a sketch by Marian Chase.

single. This no doubt in time will be rectified, and there is every reason to believe that they will be much improved. A brilliant future is undoubtedly in store for these annual Chrysanthemums, for where can we find anything that will give such a quantity of bloom for so long a period and with such a small amount of labour and expense? The old double forms are very showy, growing into large bushy specimens by the middle of the summer if sown early enough in spring. The flowers are very serviceable for cutting, and are produced in quantity all the summer and autumn, and even into November if the season is favourable. The early autumn frosts that often do so much damage in the flower garden seldom hurt them. I find it best to sow where they are to bloom, but this is, of course, not always convenient. Early-sown plants require to be 2 feet apart. They bloom much more freely if allowed plenty of space.

CLARKIA PULCHELLA and its white variety are very useful for cutting. Sown in September, the plants come into full bloom early in June. Successional sowings up to the middle of May will furnish bloom up to the autumn. The later sowings should be made in rich ground, into which the roots can strike deeply in a time of summer drought. Late sowing in poor or shallow soil is time wasted, as the plants perfect any quantity of blooms.

LIMNANTHES DOUGLASSI is one of the best annuals for early flowering. It is extremely hardy, and

this annual grown as isolated specimens. If the soil is good and the plants allowed plenty of room, the stems will come as large as the top of a fishing-rod, and the plants will individually take up a square yard of ground. The variety called *The Bride* is a lovely flower.

GERMAN SCABIOUS are classed as perennials, but it is better to treat them as annuals. In very light soils they will sometimes come through the winter fairly well, but in a general way they suffer too much from the damp and cold to be of much value the second year. The dwarf habited strain is of much worth employed in the same way as bedding plants. The seed should be sown early in warmth, so that strong plants are ready to put out in May. They come into bloom a month or more earlier than if raised later on in a cool temperature. These Scabious are very valuable on account of the capacity of the blooms to resist the frosts of autumn. One may gather good flowers from them quite up to November. If sown in April in the open ground they will not come into full bloom before the end of August, or even later if the summer is cool. It is a good plan to sow seed about the middle of August, so that the seedlings get fairly strong by the end of the autumn. Wintered in a cold frame, but keeping them quite hardy, they may be put into the open ground at the end of March. This is a simpler way of getting early bloom than by sowing in warmth in spring, and the plants individually will bear a much larger amount of flowers.

covered an uncompromising flight of stone steps in my garden with a rising arch or pergola on a small scale such as I have described, meaning to train running Roses over the Bamboos. The effect is satisfactory.—J. I. R., *London*.

FLOWER GARDEN NOTES.

THE weather we experienced in the week commencing April 9 arrested the growth of all herbaceous plants, and since the above date, with cold nights and no rain, things have grown slowly. I do not notice that anything is really seriously affected by the frosts, except the Plantain Lilies (*Funkias*) and a few clumps of *Spiraea japonica*. In both these cases foliage was developed earlier than usual, and, being tender, is somewhat crippled. This is on the open border in the pleasure ground, where both the above plants are growing partially sheltered by the spreading arms of a Lebanon Cedar; they are not in the least injured. It has not been a favourable spring for newly-planted stuff, and any such will be some time making headway. Beyond, however, a lot of the old double Chamomile and a few small plants from cuttings of white Antirrhinums and one or two good Pentstemons that were required, we have, fortunately, been able to dispense with any spring planting. From the first opening of flowers on the herbaceous borders right onward through the season notes should be taken not only, as previously suggested, of any wrong planting as to respective heights or the increase in size of clumps, but also whether there is an undue preponderance of any given colour, and to remedy this another season by the substitution of other things. This defect is generally noticeable in the centre and background of borders. In the front with a judicious selection of Violas, Carnations, Campanulas and the like there is generally plenty of variety, but in collections of larger plants we see sometimes too much white or yellow as the case may be, and as this is not owing to lack of variety in the materials, the deficiency can be made good in the autumn. Also plants of a similar flowering season should not be too much together, or a considerable portion of the border will be bare of flower at certain intervals through summer and autumn. It is, in fact, not too much to say that the planting of herbaceous borders should be carried out with as much care and discrimination as would be shown in dealing with the first general laying out of any place from a landscape standpoint. Again, it is often advisable to note any break in the supply of flowers for cuttings with the view of making good the deficiency during the coming autumn. The demand for cut flowers increases, to use a common phrase, by leaps and bounds, and as the supply from, say, the middle of March until November is largely gathered from herbaceous borders, one cannot be too particular in noting any improvement that can be effected towards furnishing such a supply. We get now such really beautiful outdoor flowers, that it is a question if in many instances their place in vases could be more worthily filled by even the best inmates of greenhouse, stove, or Orchid house. Respectively, for instance, for small and large bowls or for tall vases, what could possibly be better than a thoroughly good strain of Polyanthus in the many beautiful shades, the splendidly coloured double Pæonies, or the long spikes of the best of the Columbines or the Orchid-like Iris? Polyanthuses and Daffodils have been a great boon for vase work for the last month, all members of the Star family of Daffodils being special favourites. A mistake is made sometimes in overcrowding Daffodils in vases; they are seen to the best advantage if a handful, large or small as the case may require, of their own foliage is dropped lightly into the vase, and then a few flowers dotted easily amongst the same.

Work in the flower garden during the past week has been the knotting up of *Crocus* foliage whether in lines or clumps. Several places occupied by these bulbs are also tenanted with double Chamomile, and as this is now pushing its foliage, the additional light and air will be beneficial. This

herb is not often seen in the flower garden, but, like the variegated forms of Thyme, is a capital subject for a poor dry border. A dense mass of flower is furnished all through the summer months, and if a few taller things of graceful habit that will contrast nicely with the white are dotted here and there about it, the effect is very pleasing. It makes also a very fair green carpet plant if kept shorn of flowers and trodden firmly, and was, I fancy, first introduced into flower garden work for this purpose. Other work has been the carpeting one or two more beds with the common Musk. Attention has been previously directed to using this occasionally as a ground plant for permanent Rose beds, and I have now tried it on a couple of breaks of *Hydrangea paniculata grandiflora*. This is essentially a shrub demanding thin planting to show it off to the best advantage, and as there was a considerable amount of bare ground showing, it struck me this would be all the better for a Musk carpet.

Some deciduous flowering shrubs just now at their best besides Lilacs and Belgian Azaleas are the white and yellow forms of Broom and *Colutea arborescens*. I do not know, writing of hardy Azaleas, if any readers have tried the experiment of partially layering; if not, let me suggest a trial. A large break on one of our hills in the pleasure ground was partially covered with big old plants of the common yellow straggling bushes some 6 feet in height and proportionately broad, with a lot of bare ground intervening. The operation of clothing the bare spaces and altogether increasing the density of the break was started by working down and pegging all side branches, at the same time slightly heading back about half those that remained in an erect position. The following season witnessed the continuation of the horizontal process by another pegging and another slight heading back, also the planting here and there of small groups of *Lilium candidum*. The result is now a mass of colour nicely undulated and very effective when viewed from the top or bottom of the slope, with the bright green foliage of the *Lilium* showing to advantage in the flowery hollows, from whence also occasional Foxgloves and Delphiniums will presently make their appearance. These hardy Azaleas (standing, as they do, so well in water) are very useful for cutting, and now that the glory of the Polyanthus is on the wane, we find them valuable for filling up large flat bowls and glasses.

E. BURRELL.

Claremont.

SEASONABLE FLOWER GARDEN NOTES.

THE time of year is once again come round when one's attention is as it were naturally diverted to the flower garden. The flower beds and borders may possibly have lain fallow for the past six months, not a desirable method certainly when it can be so easily avoided; but still such instances are to be met with far too frequently. If the beds have been thus destitute no time should be lost now in preparing them once more for either seeds or plants. In doing this no rank manure should be introduced, spent hotbeds of last year or old Mushroom manure being far preferable. When this work is being done the edges should be neatly cut with the edging knife, and all irregularities in beds of formal outline be set right. This kind of work also applies to borders as distinguished from beds. Even if no plants or seeds be sown for a few weeks to come the appearance will be all the better and in accord with the surrounding attractiveness of the spring season. The flower garden when neglected looks bad enough at any time of the year, but methinks it is more distressing to see it so now than at any other period. The lawn must also be mown as occasion may require if its future good appearance is to be considered. I do not advise, however, that it be cut extremely close; it is a mistake to do this whilst we are having a few degrees more or less of frost nearly every morning. If this be done, the grass will assume a sickly appearance that is not at all desirable. As soon as this remarkably dry period changes and rain again falls, the lawn in nearly every case will require

rolling, it being almost impossible now to make any impression upon it. Weeds crop up now freely enough upon the lawn, Dandelions in particular being conspicuous in many places. These latter should be destroyed without delay; it can be easily accomplished by means of a little weed-destroying liquid as received and without dilution. All that has to be done is to dip the point of a stick (a meat skewer, for instance) into the poison and then pierce the plant in the crown, one dipping and one piercing being ample for each case. In the case of other weeds, it is better, on the whole, to remove them by means of a Daisy grubber. The paths, where in need of fresh gravel, cannot well be attended to until rain has fallen, but the gravel itself should be in readiness all the same. In many cases all that is needed is a turning of the gravel to give a fresh appearance; whilst in others it is only the weeds and mossy growth that are eyesores. These may be easily destroyed by means of one of the weed destroyers now in the market, but the work should be done by a careful workman to prevent injury to other vegetation beside the paths.

TULIPS AT KEW.

THE Tulips in front of the Palm house at Kew are very beautiful this year, but the Dutch varieties are practically over. It is the species and hybrids that now give colour to the elaborate arrangement, and we are pleased to see that such types, practically unknown a few years ago, except a few of the more common, are thus massed together in a conspicuous position in the Royal Gardens, Kew, teaching many good lessons in bold, artistic planting. The grouping together of the finer Tulips for colour is delightful. The chief kind, at least the one more largely planted than the others, is *T. macrospila*, which, like the majority of these later-blooming types, has fine robust leafage, which is of itself quite ornamental. On April 14 the bulbs were rapidly approaching the flowering stage, and the long-continued spell of brilliant sunshine has brought the flowers quickly to full beauty, but, unfortunately, they are of short duration. The flowers of *T. macrospila* are very fine, large, bold in shape and of a pleasing crimson colour. *T. elegans* was in perfection a few days ago. It is planted in the smaller beds and is considerably in advance of the others. The flowers are of the deepest crimson, not remarkably large, but the segments taper gradually and reflex in a charming way. Each bed presents an even surface of crimson, the flower scapes varying little in height, and the base of vigorous foliage is in rich contrast. Another very handsome Tulip, a little later in bloom, is *T. fulgens*, which has, as the name suggests, brilliant crimson flowers, effective in a mass. It would be well if these fine Tulips were planted in large gardens, as they are a relief from the ordinary Dutch kinds and prolong the season of the flower. *T. Billietiana* is late, but it is a fine type, and is distinguished by robust crinkled leafage, which quite covers the surface of the bed. Beds are also devoted to the Parrot Tulips, which seem to be getting popular in gardens. They are certainly strange flowers, possibly of hybrid origin, as in some respects they resemble those kinds with long segments, as *T. cornuta*. A good mass of the Parrot Tulip is a brilliant picture, the segments grotesque in shape and the colours vivid crimson against gold, mixed with greenish yellow. Uneven, strange, and tumbling about as if too heavy for the scapes to support the flowers, they yet possess a curious interest. A bed of *T. retroflexa* is worth a note. It is an uncommon and handsome species, the flowers bright yellow and the segments reflexed as in *T. elegans*. A bed of *T. acuminata* is interesting. The flowers are of a pale yellowish white, the segments tapering to a point and suffused with scarlet. Late in blooming is *T. spatulata*, which is freely planted, the two large beds on either side of the path leading to the central entrance to the Palm house being filled with this form in the centre, and outside are several rows of *T. macrospila*. A fine mass of colour results from this happy arrangement. The Darwin Tulips are just

opening, but there are too many kinds. One may easily reduce useful colours to twelve, as many of the flowers are uninteresting, too dull and leaden in tone to grow for effect. Small beds are filled with *T. Golden Eagle*, which has showy yellow flowers, the petals pointed and brightened with a crimson edge; the leaves are large, broad, of fine colour, and crinkled. Those who care for these later-flowering Tulips will find a number of kinds in bloom in the bulb border skirting the red brick wall near the rock garden. *T. viridiflora*, interesting for its green flowers, edged with yellow; *T. Schrencki*, bright crimson; *T. vitellina*, white and delicate sulphur; *T. australis*, *T. præcox*, synonymous with *T. Oculus solis*; *T. graveolens*, *T. sylvestris* var. *florentina*, and *T. Leichtlini*, a very interesting and beautiful species, are in bloom. The flowers of the last-mentioned are not large, but of dainty form, the segments white or pale sulphur, the outer surface flushed with coral-red. The species and hybrids mentioned merely indicate the extent of the Kew collection.

Tulipa Leichtlini is one of the more interesting of the rarer kinds of Tulip, and well represented in a coloured plate given in *THE GARDEN* of August 22, 1891. It is allied to *T. stellata*, and comparison may also be made between it and *T. Kolpakowskiana*. It is interesting to know that Mr. Gammie was the first to discover this dainty species, finding it at Sind, a beautiful Cashmere valley. We have seen it in bloom lately, and hope that it will be grown in good gardens. The coloured plate referred to was published so recently, that further description of this Tulip is unnecessary.

Marsh Marigolds are amongst the gayest flowers of the season and delight in the moist soil by the side of rippling brooks. We noticed a few days ago in the Royal Gardens, Kew, several kinds of *Calthas* in full bloom, revelling in the damp soil through which trickles a little stream of water. A good group of the several kinds in a damp spot in the garden would make an interesting feature, and the flowers vary in colour from yellow to deep orange, the doubles being, perhaps, the richer, especially in a good bold mass. A great advantage of the double varieties is that the flowers remain longer in condition and are less likely to suffer from storms of rain than the more fragile single kinds. *C. leptosepala*, *C. palustris plena* and the distinct monstrosa forms are all worth growing by the waterside. Many opportunities may be found in gardens for growing these brilliantly coloured spring flowers, as streamsides, as a rule, are left bare, although providing an excellent home for many moisture-loving things, as the *Calthas*, *Primula rosea*, &c.

Auriculas for massing.—Each succeeding season for years past I have intended sending to you flowers of a few of our best alpine Auriculas. Few other plants in the garden give more genuine pleasure to the true lover of flowers, and there are kinds to suit all tastes, from those who delight in looking into the delicate shadings of individual blooms to those who care more for general effect in the mass. Of the kinds most appreciated by the latter class there are several, especially among the pin-eyed varieties, which are well adapted not only by their colours, but by their habit and the ease with which they can be propagated, for massing. The more delicately-coloured kinds, though robust and strong, are not so easily increased, as they form offsets but slowly. I fear that the flowers will not reach you in exactly the same beauty as they are now, for they soon become tarnished if roughly treated, as they probably will be when travelling. Still, I hope there will be sufficient of their beauty left to show their value. All the varieties sent, and there are many others, were raised from one packet of seed, and there were probably quite as many thrown away, so that one packet of seed should produce enough to stock a large garden. Ours are grown nestling up to the foot of a wall facing almost north, so that they get no sun except after about 4 p.m. They

are in a single row of over 90 yards long, containing about 300 plants. I have numbered a few of the most striking for each purpose in case you care to give an estimate of their value. Auriculas were my first love amongst flowers, and when quite a small boy I used to cultivate about thirty plants in a hole in the face of a cliff at the north side of our cottage home, and since that time I have always retained my love for these beautiful and delicately scented flowers.—J. C. TALLACK.

* * They are certainly a step in the right direction in the rich and simple colours and also free and picturesque habit and form. Auriculas, unhappily, are still, from an artistic point of view, very poor and stiff, and much remains to be done in raising and increasing soft and delicate colours. The strong yellow and fawn-coloured forms are very good.—ED.

Primula Sieboldi.—A note may be made of a fine family of varieties of this *Primula* in the gardens of the Royal Horticultural Society at Chiswick. This class of *Primula* has been greatly improved by Messrs. Ryder and Son, Sale, near Manchester, who have raised many charming varieties. The finest kind at Chiswick is *Laciniata rubra*, the large potfuls of it showing that for colour and freedom it is one of the best varieties that can be grown. The flowers are brilliant purple-rose, quite self, and in rich contrast to the quieter shades of other kinds. There is danger in hybridists getting too many pale forms, washy tints which may have a certain delicacy and refinement, but are not very beautiful when compared to the fine deeply coloured self forms. Other good varieties at Chiswick are *grandiflora*, the flowers suffused with delicate lilac; *alba*, pure white, a lovely flower; *Obelisque*, rose; and *Elysée*, rich purple-violet. Some of the newer additions of Messrs. Ryder are delightful. *Maiden's Blush*, for instance, is a beautifully fringed flower, white, the outer surface of the flower rose, and Mrs. H. J. Jones is another kind of merit. The flowers are fringed, and white, tinted with soft rose, whilst such kinds as *Alba magnifica*, white, conspicuously fringed; *Mrs. Ryder*, blush; *Ruby Queen*, rich ruby colour; and *Charming Bride*, blush, finely fringed, are a few only of this distinct class that deserve to be grown well. The later varieties are distinguished not only by a greater range of colour in the flowers, but they are produced on sturdy footstalks, and the habit of the plants is remarkably compact. They are delightful to grow in greenhouses, and require no heat, this being in fact positively injurious, the flowers produced being limp and wanting in robustness. Therefore those who do not possess a heated structure may have them, and nothing is brighter at this season of the year than a good selection of well-defined colours. Bold clumps on the rockery also may be planted, and such a variety as *Laciniata rubra* would give welcome colour, far better than the paler tones, which require the protection of glass to develop their true character. A moderately sunny spot and a fairly rich soil will grow the plants well, and the stock may be readily increased by division of the roots.

Gay rock gardens versus cemeteries.—Many who have large or small rock gardens grow the plants in them not for effect, but as curiosities, labelling each plant so prominently that the whole looks like a stony cemetery for the greater part of the year, plentifully diversified with tombstones. Against the culture of alpine gems I have nothing to say, for, in fact, so far as is practicable, they should all be grown. It is by no means necessary, however, to grow a rare plant to one or two yards of stone or earth and to leave the rest bare. My argument is that the bulk of the rock plants should consist of common gay hardy things like *Arabis*, *Aubrietia*, *Phloxes*, *Saxifrages*, *Primroses*, *Cowslips*, *Auriculas*, *Violas*, and, in short, all our tried old friends that will, it is true, grow anywhere, but which at this season make the rock garden a blaze of beauty. In between the tufts of such things and in suitable soils and aspects, let us by all means grow *Gentians*, *Androsaces*, and all and every alpine beauty we can grow from seed or buy from nurserymen who may be depended on not to have

had them ruthlessly rooted up from their native rocks. In this way, with the help of early bulbs here and there and a little later on we can really produce something like the blaze of colour to be seen in the Alps. Excellent sites for such rock gardens can be found by utilising the hideous Grass fortifications or banks at an angle of 45° or thereabouts so common in our suburban gardens. The steep sides bounding lawn tennis or croquet lawns can thus be made beautiful and interesting, and the saving of the labour of cutting and mowing the Grass goes some way towards paying for the making of the rockery. Ample root-run behind is one of the first requisites towards the success of a rock garden, and this such sites afford, while our common spring plants will do in any soil. If good-sized bits of such places are made up some with peat, others with road sand, leaf-mould, or mortar, plants difficult to grow can be provided for, and quarry waste for stones can be had cheaply enough in southern London by rail from various places in Kent.—J. I. R., *London, April 28, 1893.*

OPUNTIA RAFINESQUIANA.

I HAVE grown this in the open air off and on for a period of twenty years, and can unhesitatingly say that, if accorded certain conditions, it is one of the hardiest things in cultivation. I was looking several years ago through the garden of an excellent grower of hardy flowers, and we came to some plants of this *Opuntia*. They were in a sorry plight, the greater portion of them looking as if the base of the stems had been dipped in boiling water. This was caused by the frost acting on them just as snow was melting away. This is the only way in which the hardy *Opuntia* is ever injured. The severest and most protracted frosts fail in any manner to affect it if dry. The plants above referred to were not so placed that superfluous moisture could drain away from them with sufficient rapidity. Shelter, I find, does not conduce to its hardiness. The more exposed the position the better, as the growth is not so succulent and is better able to resist cold. For ten years I had a plant growing on an old tree stump. During that period we had several very severe winters, but, although it looked rather shrivelled at times, and, of course, did not make very free growth, it was never in the slightest degree injured, and bloomed fairly well. This plant stood in the most open position in the garden, where it had no shelter from easterly and northerly winds. Everyone knows that last winter was one of the most trying for outdoor things that has been experienced by the present generation of gardeners. Anything that passed through it unscathed may be considered as really hardy, and my plants situated on a small rockery are now in good condition, and they were not in any way protected against 32° of frost that we had last January. The rockwork is at the end of a brick pit, the plants being set close to the wall, the ground sloping away very sharply from them. I covered the surface with stones, so that the young growths do not come in contact with the ground. This guards them in a great measure against the combined effects of cold and damp. Many failures to establish this hardy *Opuntia* are, I am convinced, due to employing quite young plants. It is the nature of the *Opuntia* to become in the course of time hard and woody at the base. In the case of young growths used for cuttings, this hardening process takes several years. In the meantime the succulent tissue is very liable to be affected by damp and cold, and this decay is frequently accelerated by the attacks of slugs and worms, which eat holes in the plants near the ground. I once had a couple of square yards filled with cuttings of this *Opuntia* which were dibbled in in spring. They were well rooted by the autumn, and stood the winter very well, but in the following spring I found on lifting them that a great proportion was eaten through at the base. The better way is to grow the plants intended for the open air in a sunny greenhouse, for a couple of years, keeping them rather short of food, but giving plenty of water in hot weather

This treatment will cause them to make short stout growths, and the stem near the ground will become as tough as leather. If plants are thus prepared and put out in April in a place where the water and melting snow cannot lodge round the base, there will be little danger of their being killed.

J. C. B.

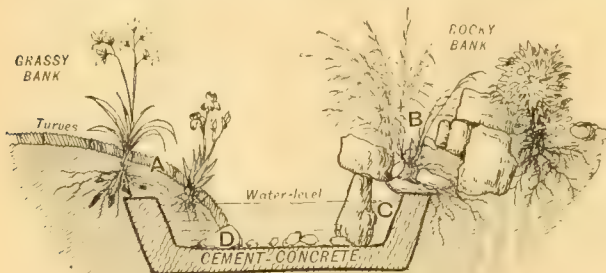
THE ROCK GARDEN.

WATER IN THE ROCK GARDEN.—II.

(2) THE STREAMLET.

THIS is, perhaps, the most pleasing form of water in the rock garden, and should be the natural continuance of the spring just referred to in the previous paragraph. A purling brook or any natural streamlet would be a most desirable acquisition for the rock garden, but as Nature's work needs no comment with regard to construction, I will confine my present remarks to the treatment of streamlets produced artificially, and hope to show that this can be done in such a way that no one would suspect the artificial origin.

If the soil consists of a heavy impervious clay and if the water supply is so copious that a little waste would be of no consequence, a winding trench might be excavated of the desired shape and depth, through which the water might be allowed to flow naturally without any artificial foundation. But, as a general rule, I would not recommend this course, as the water would continually undermine the banks and would nearly always be dirty in consequence. Moreover, the good soil and plants at the sides would be exposed to the constant danger of being washed away. They could be protected by stones, it is true, but the stones would have to be in a continuous line on either side, which is not desirable, as it would be extremely difficult to avoid a stiff and formal appearance. The banks of a streamlet, in my opinion, should be as varied as possible, in one place by projecting rocks, in another by grassy slopes and groups of plants. The water, too, should be clear as crystal and enable us to see distinctly the stones and pebbles forming the bottom.



No. 2.—Section of artificial streamlet, showing the masking of cement-work and roots of plants having access to the water.

With this view, I construct streamlets almost exclusively with cement concrete, which is afterwards hidden in such a way that no one would suspect its presence. An exception would, of course, have to be made with large streams flowing through a park and obtained by tapping a natural river, but this cannot come within the sphere of the present consideration of streamlets in the rock garden.

SHAPE OF THE STREAMLET.

For determining what course we should give to running water, we must again turn to Nature. On closely observing natural streams, we will find that in most cases the banks are approximately parallel with each other; we

will also find that the more slowly the water flows the larger and bolder are the curves it describes in its course. Rapid streams are less crooked because here the water has greater force to remove obstacles in its way, and a zigzag or slightly curved line is the result. When flowing water in Nature meets with an obstruction which compels it to change its course, there must naturally be a greater wash on the opposite bank, the outline of which would be hollow in consequence, unless the material composing the bank should be of a nature hard enough to withstand the force. This natural law is further explained by the accompanying sketch No. 1 (see illustration),



No. 1. Plan showing the natural course of a streamlet.

showing a plan of a portion of a streamlet. Water flowing in the direction indicated on the sketch by the arrows and coming into contact with the rock A would naturally diverge from its course by washing out the hollow space B on the opposite shore, and at the rocky point C this would be repeated, causing another hollow space at D (see sketch No. 1). In imitating Nature we must take care, however, to make these bends as varied as possible with regard to size and shape, and we must also show a reason for such alterations in the direction of the watercourse by placing the rocks in such positions that the bends in the streamlet look like the result of Nature's work. Generally speaking, therefore, all projections like A and C (sketch No. 1) should be furnished with bolder rocks and larger groups of plants than the recesses like B and D, which might be turned into grassy banks with pieces of rock and scattered plants occurring here and there at irregular intervals. I will now describe my method of

SECURING THE SIDES AND BOTTOM OF A STREAMLET.

First of all the streamlet is carefully marked out on the ground, which is excavated to the required depth, taking care that the bottom is level in a transverse direction and also approximately so in the longitudinal direction to prevent the water from flowing too rapidly. If the incline is considerable, it would be better to cut a step now and then in the ground for the water to fall over at irregular intervals rather than allow it to flow rapidly over the whole of its course, when the wash at the sides would be very considerable. The preparatory excavation for the streamlet should be at least 2 feet or 3 feet wider than actually required when finished, so as to allow room for the necessary cement work and the masking of the same with rocks, &c.

The dotted lines in the plan (sketch No. 1) indicate approximately the width of the excava-

tion required for a streamlet such as represented by the illustration. The sides should be excavated not upright, but slightly sloping, so as to allow the concrete to be packed firmly against the banks, which would thus be secured on either side by a little concrete wall, say, 6 inches to 12 inches above the bottom level according to the volume of water at command. Cement-concrete about 4 inches to 6 inches in thickness should be sufficient for the bottom as well as for the sides. In loose soil where there would be no firm foundation for the concrete, the sides might be secured by brickwork $4\frac{1}{2}$ inches thick and set in cement, but concrete is preferable where it can be used. For mixing the concrete I

generally allow five parts of broken stones and sand to one part of cement. When this has been spread to the thickness mentioned and has become fairly hard, the whole is made perfectly water-tight by a thin, but smooth coating consisting of Portland cement and fine sand mixed in equal parts. When the water supply is not a constant one, but amounts sometimes to a mere dribble, and is perhaps occasionally turned off altogether, the above suggestion of providing steps here and there will be found especially useful, as it will enable us to prevent the streamlet from becoming quite dry. This is done by keeping each step a few inches above the bottom adjoining it on the higher side, so that the bottom would be always covered by a few inches of water, which would flow over and form a miniature waterfall when the supply is turned on. At the bottom of these steps the concrete should form a little pit, say 6 inches to 12 inches deep, to enable the falling water to produce that purling or murmuring sound mentioned under the heading of "The Spring," and effected only by water falling on water.

Continually flowing water in the more massive part of the rock garden, where the banks would consist of rocks on either side, may be allowed a more rapid flow, as there could be no danger of washing out the banks. But even here we should not trust to the porous stones to keep in the water, but provide water-tight cement-work first and place the stones in position afterwards, so as to form a little ravine or any other picturesque arrangement.

That all this cement-work is extremely ugly to look at, I am quite willing to admit; but it must be remembered that not a single inch of it will be seen when the work is completed.

MASKING THE CEMENT WORK.

When hiding the cement work, the covering of the bottom should be left until the sides have been completed. As already stated, convex or projecting banks should be masked with rocks and the concave ones with turves. The latter might be set up in the same way as described previously under the heading of "Grassy Banks." Sketch No. 2 (see illustration) shows a transverse section of a streamlet constructed

after my method. At the point A thick pieces of turf have been used as recommended, and in such a way as to allow room for soil between the turf and the concrete at the side. To prevent the turf from being washed away, a little rough concrete has been placed at the bottom, and this is represented on the sketch (No. 2) by the little wedge-shaped piece D. A small portion of this turf would, of course, be under water as well as some of the soil supporting it at the back, and water-loving plants, like many Irises, *Astilbe rivularis*, *Spiraea palmata*, the double Marsh Marigold (*Caltha palustris* fl. pl.) and many others, if planted on this bank, would be able to send their roots into the liquid. The sketch (No. 2) also shows the other side of the bank, which has been hidden with rocks, but in such a manner as to provide now and then spaces like C, which, though confined by stones and filled with soil, would be partly under water, and likewise make an excellent home for plants loving an extra degree of moisture.

When the arrangement at the sides has been completed in the manner described, the cement

NOTES ON HARDY PLANTS.

Saxifraga luteo-purpurea, **S. Malyi**, and **S. Frederici Augusti**.—I believe that all these names are borne by one and the same plant. With this opinion I have grown and watched different specimens procured under each name, and I have seen as yet no reason to fix upon a permanent feature of distinction. That one plant flowers much before another may be true, as that may be the case with different plants of the same name and same stock in other genera; it may be owing to position, soil, or age of plant *in situ*. The other day I looked at plants of luteo-purpurea, and some parts of the plant had flowers that have been past their beauty quite three weeks, while other portions of the same plant at the outer edges are pushing fresh flowers. It is the same with Malyi. I can believe that sancta, one of the parents, or supposed parents, of these hybrids, is distinct and free enough for hybridising. Still it is very near to the present plants, and anything produced by sancta blood should not be too hastily given a new name.

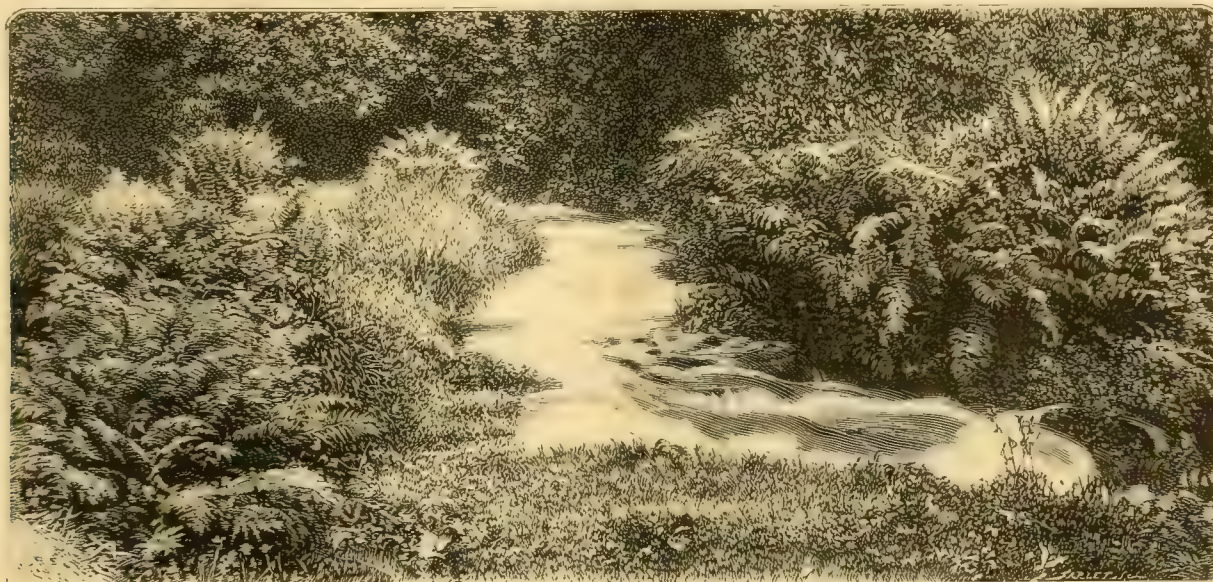
Chionodoxa Alleni.—I had a nice batch of this, but until now I have not seen anything superior to or scarcely differing from gigantea. I

cately blanched foliage were perfection. The further test proves all this to be practicable. Sandy soil is most suitable, and it should not be done with more than a thin covering, and not until the buds are well developed in, say, January. I am aware we have a white variety of this Erica, but the very much smaller flowers and the coloured anthers render it totally different from what you get by this artificial process, and besides I find the white kind anything but vigorous.

Tulipa sylvestris should be grown in broad patches in the woodland and wild garden. By its bounding stolons it soon makes wide masses, and it is otherwise vigorous and capable of holding its own. The spicy odour of this distinct species with scarlet streaked deep yellow flowers renders it a most desirable kind. A dozen bulbs planted three years ago now form a patch 5 feet across in light, rich soil. I do not think the progress would be so free in stiff land.

Lathyrus splendens.—I fear we may not claim this as a hardy species; it stood well last winter in a cold frame, but having open-air quarters in the past winter, even with a year's more strength the whole batch has succumbed.

Inula glandulosa and **I. Hookeri**.—At this



A stream in a Devonshire garden.

bottom should be carefully cleansed of all dirt and loose soil which might have accumulated during the progress of the work. The bottom should then be coated to the thickness of half an inch or so with a layer consisting of one part cement and three parts of coarse sand. While this is still wet, a quantity of river gravel, shingle, and water-washed roundish stones or pebbles should be thrown in at haphazard so as to look as careless and natural as possible, thus covering every trace of the cement. If slightly pressed in before the cement begins to set, this covering will be sufficiently firm after the cement has hardened to prevent the stones and gravel from being washed away. In a streamlet constructed on this plan the water would, of course, be perfectly clear after the first flush, and the stones and pebbles at the bottom would be clearly visible, adding greatly to the natural effect.

I have made many streamlets on this principle, and their effect is so natural, that even during the first season no one would suspect the presence of the ugly cement work forming the foundation.

F. W. MEYER.

Exeter.

(To be continued.)

now, however, see two plants that have much bigger flowers with a deeper colour, and several on the scape. The flowers are quite 2 inches across, having red-purple lines on the face of the segments and a paler shade of blue in the centres of the flowers, and yet not of such degree as to form a so-called "eye." It is, I therefore think, evident that we have another, either species or well-marked variety of *Chionodoxa*.

Shortia galacifolia.—A three-year-old plant in the open air is in bloom. From its age and treatment, I should consider March and April the normal flowering period. It is hardy and free, and coming into blossom at the same time as the wood Anemone it must be classed with useful early spring flowers.

Erica carnea.—It may not be generally known, and it may not by all be considered worth knowing, that the flowers of the Winter Heath can be had beautifully blanched to a pearly whiteness. I found it out by accident, and afterwards by intent verified the fact. In planting some bulbs next a line of the Erica in the early part of the year, some earth went over the outer parts of the Heath then in a well-developed state of bud, and they remained so until the other parts flowered in March. The covered twigs were then liberated and beautiful to behold. The flowers were white, and capable of withstanding a rinse to remove all dirt. For button-holes or bouquets the sprigs with deli-

period of growth the distinctions of these kinds can be better seen than perhaps at any other. The latter is more compact as a stool, and shorter and more obtuse in its young leaves, and the former has the more glandular or grey foliage. It may be useful to note this, as later, even in the foliage, the distinctions almost vanish. There is a little difference in period of bloom, but in the features of the heads hardly any—at any rate no more than can often be accounted for by local conditions of soil and culture.

Iris lacustris.—This is a gem of the first water, only 2 inches to 3 inches high here, free and hardy; flowers delicate blue.

Myosotis pygmaea.—This is the nearest thing I know, and otherwise similar to *Eritrichium nanum*. It is flowering freely at a stature of but an inch, and will last a long time. It revels in a rich soil composed almost entirely of leaf-mould, and, of course, there should be no lack of moisture at the growing season, say in this climate from the middle of March. Like other things with a dense covering of soft hairs, it is the better for its head being kept dry in winter, then it proves a good perennial.

J. WOOD.

Woodville, Kirkstall.

Dielytra spectabilis.—For several years past large clumps of this handsome spring-flowering

plant have come through the severe winters unharmed and without any protection. Perhaps the position is a favourable one—along the foot of a west wall about 5 feet in height. This is a position that admirably suits the plant, and helped with a little water during the present time of drought, the charming effect produced by a large clump when in full bloom is maintained for a long season. In good soils, such as a light rich loam and with an occasional top-dressing of manure, clumps grow into a large size and flower freely. A can of water is greatly appreciated, especially of soot water, or water in which a little guano has been placed, stirred up briskly immediately before being applied. Increase can be had by dividing the roots, doing this in autumn as early as convenient. The roots will bear severe division, and every portion showing a crown will make a plant, but it is unwise to divide all the large clumps at once. It is a much better plan to divide one half one year and the remainder twelve months or two years afterwards. A year or two is required for the divided crowns to make growth and grow into blooming size, and they make all the more progress if well looked after in the matter of water during summer and treated to some top-dressing.—R. D.

STOVE AND GREENHOUSE.

FRANCISCEAS.

A FEW plants of this family will possibly be seen at the leading shows during the summer, but the exception is the rule more often than not. There must be a reason for this, and I do not think it is far to seek. The flowers do not carry well, and what is applicable to plants is equally so to cut flowers when packed for transit, unless carefully carried by hand. These reasons, however, should not preclude them from use at home either upon the plants or in a cut state, and it is for such purposes that I wish to recommend them more particularly. Having grown them myself and tested their utility, I have all the more confidence in bringing them to the notice of others. One marked feature in their favour is the lovely colours of their flowers—various shades of purple, soft blue and lavender, and in addition thereto there is the fragrance of the same, which is most pleasing, without any overpowering odours. The flowers last a good time, and in more than one instance a succession of bloom is kept up. *F. calycina* is one of the best in this respect, but *F. confertifolia* and *F. eximia* can both be strongly recommended. When required in a cut state, those with the larger flowers and less branching habit should have each blossom detached separately; others may, where the shoots can be spared, be cut in trusses. In this way I have used the flowers very effectively with those of *Dipladenia boliviensis* in shallow dish-like vases with Moss in the water to hold the blossoms erect. We have none too many flowers in these shades of colour for vases until outdoor flowers are plentiful; even then there are but few things to surpass the Francisceas in their way. This genus is chiefly a Brazilian one, but in spite of this fact it is possible to grow them in what may be termed a cool stove temperature. A night temperature during the winter that ranges from 50° to 60°, the lower point only being touched during severe frosts, will suit them well. I have seen specimens wintered in a lower temperature, but it is hardly advisable, as the foliage is thereby disposed to lose its deep green colour. The two best kinds for a lower temperature than that given above are *F. calycina* and *F. confertifolia*, but when so treated the plants should be kept correspondingly

dry at the roots. This plan is followed by exhibitors who wish to retard them for particular shows.

GENERAL CULTURE.

Cuttings, which may be safely struck in sandy soil in a moderately brisk heat, but not in an excessively moist atmosphere, should be chosen from half-ripened wood, which is best secured during the summer months. A handlight would be a good place for them, bottom-heat being hardly required. Each cutting had better be inserted singly in a small pot so as to preserve the roots intact. Another mode of propagation, is by grafting, a free-growing kind, as *F. calycina*, being chosen as a stock. I do not think, however, that this system is generally followed, unless it be for specimens. The object for one season at least should be to secure shoots rather than flower—in fact I would advise that this be followed for two seasons in every possible case, a good plant being thereby formed. As to soil, I have never found the Francisceas to be over-particular. They will thrive very well in good loam and leaf mould, or they may be grown in nearly all leaf mould. On the other hand, peat suits them admirably, and is, all things considered, the best from an enduring point of view, although it may not excite the growth quite as much as leaf mould does. About one-third of loam (turfy and fibrous) with two-thirds of peat of good quality will make a good mixture for them; to this there would be no objection to a small quantity of leaf mould worked through a fine sieve; it would assist root-action for a time until the roots were working well in the new soil. Potting as firmly as possible is certainly desirable from a permanent point of view, for shaking out every season and reducing the roots cannot be recommended. Some years ago I had charge of a plant that was not potted more frequently than every second or third year. This plant used to stand the year round in the vineries, save in the hotter weather of the summer, when it was stood out of doors for a time. It thrived well under this treatment, the variety being *F. calycina*. In order to keep these plants free of such insects as the mealy bug, the syringe may be used freely when the growth is hardened, it being hardly possible to injure the foliage in a reasonable way. In addition to the above variety as being stood out of doors, I have also seen *F. uniflora* treated in the same way. This was where *Poinsettias* and *Thysacanthus rutilans* both stood outside for a time, thus indicating a favoured locality in the south of England. When the plants are positively at rest less water should be given them, but it must not be withdrawn to such an extent as to cause the foliage to flag. Weak solutions of liquid manure will greatly assist them when in active growth, but it need not be given during the flowering period. The best kinds to grow are *F. calycina*, with purple flowers freely produced, and *F. confertifolia*, a spring-flowering plant with a soft blue shade of colour. *F. eximia* also flowers in the spring, but continues well into the summer, colour deep purple or violet. *F. latifolia* has really handsome foliage; it flowers in the early spring, colour lavender, fading to nearly white. *F. uniflora* has the smallest flowers, but they are freely produced in winter, first violet, but changing with age to pure white.

GROWER.

Propagating show and regal Pelargoniums.—The article on this section of Pelargoniums by "H. P." (p. 294) comes as a reminder as

to the best season for propagating. As a rule this is done too late, gardeners waiting until the plants have flowered and the wood has become hard, thinking no doubt that that is the best time for such work to be done. This is certainly wrong, for the best season is the present, before the plants advance into bloom. At this time shoots suitable for cuttings may be seen clustering about the base of the stems, being in a green, but yet firm stage. These, if taken off and inserted singly in small pots, using sandy soil and placing in a warm greenhouse or pit, will, if kept fairly moist, soon form roots, and in the course of twelve months make fine plants.—A. YOUNG.

Tree Carnation Uriah Pike.—This variety, recently certificated by the floral committee of the Royal Horticultural Society, was exhibited again this week in remarkably fine condition. On this occasion it was at the Royal Botanic Gardens, Regent's Park, when some eighteen or twenty plants formed an attractive feature. In growth this variety is evidently very free; it is essentially a Tree Carnation, the plants ranging from 4 feet to 5 feet in height, carrying a dozen and more flowers upon each, with numbers of buds to follow. No thinning down to obtain extra fine flowers had apparently been practised. Amongst all the flowers I did not note one with a burst calyx—in itself a strong recommendation. The perfume is quite that of the old Clove and as strong; the flowers are finely formed, reminding me of those of Mrs. Hemsley, another first-rate variety; the colour is intensely dark—darker than in the true old Clove. Uriah Pike will undoubtedly be a decided acquisition to its class, in which there are none too many that possess such a vigorous constitution combined with free-flowering qualities. At the Regent's Park it was awarded a floral certificate (unanimously) by the judges. As it did not come from the same source as on the former occasion, it is possible there is already a good stock of it.—H.

THE DWARF CANNAS.

THESE have never been exhibited in better condition than on Tuesday, April 25, at the R.H.S. meeting, the same plants appearing the following day at the Botanic Gardens, Regent's Park, none the worse for extra travelling. This one fact of travelling so well is an important one, for if this be the case upon the plants, the same should hold good in a cut state. There is no disputing the utility of this race of Cannas. They are undoubtedly splendid acquisitions for many purposes. They may not, I admit, be what are termed market plants, nor their flowers be sought after by the florists. These facts, however, do not militate against their extended culture in private establishments. Something of this kind is what is really needed, for we see quite enough of certain things (let them be ever so good) here, there and everywhere whilst in season. When, however, we can grow such plants as these Cannas, and that with comparative ease, we shall have an additional attraction, and one not to be seen in every florist's window. The spikes of flowers upon the plants exhibited on the above occasions were unusually fine, each carrying a good number of blooms. It should be borne in mind when dealing with these flower-spikes, that if cut with any length of stem the plant is shorn of a great part of its beauty. A few inches below the lowest flowers will be found another growth ready to push away and flower in due course. If the spike already in flower be therefore cut below this growth, it can be readily seen what injury has been done. These spikes are in a measure continuous; this I have tested myself in more than one case, as many as six and even more successive lateral spikes being formed. In the culture of these Cannas, therefore, guard against cutting with a long stem. The plants in question had evidently received the very best attention, the growth being stout and sturdy, the foliage healthy and the individual flowers large and fine. I hope to see these Cannas more and more grown as their merits become known. They are the *beau ideal* of a good conser-

vatory plant from any point of view, being quite at home when associated with Palms and Ferns. In houses of any kind where a good amount of moisture can be maintained, they will thrive well. They do best in a temperature rather above that of an ordinary greenhouse, save in the summer months. The sorts shown as above were Antoine Chantin, Progression, Edouard André, Mme. Crozy and Louis Thibaut.—GROWER.

—An interesting collection of dwarf Cannas is grown in the Royal Horticultural Society's Gardens at Chiswick. They are of the dwarf type, and although very few are in bloom, we make a note of the more important, as this class of Canna is rapidly superseding the tall kinds once grown largely in gardens. They still hold their own for certain positions where bold effects are desired, but for pots especially and to form a foreground to taller things the dwarf varieties are especially useful. They are robust, free, easy to grow, and a few are distinguished by exceptionally fine leafage. One named Doyen Jean Sisley has deep chocolate leafage with a silvery midrib, outside which is bright crimson. Such a kind apart from its flowers is worth growing for the sake of its handsome leaves. Flamboyant has deep crimson flowers of great richness; François Crozy, bright salmon-red, margined with yellow, a brilliant contrast; Antonin Crozy, crimson, a rich set off to the deep green leaves, which have a margin of purplish colour; and Amiral Courbet, the flowers of which are large and yellow, enriched with red spots. The newer kinds of dwarf Cannas have remarkably fine flowers, the segments broad and splendidly coloured, the outcome of patient work in hybridising on the part of M. Crozy. A very fine kind is Felix Crousse, the flowers of which are orange-red, large, and the leafage is deep green, whilst another excellent type is Francisque Morel, the flowers quite of a carmine shade and the leaves deep green. It is this fine contrast between leaves and flowers that increases the value of this class of greenhouse plants. A few more varieties may be noted with profit. Souvenir de Asa Gray has flowers of a red tone, touched with salmon; Ulrich Brunner, red, tinted with orange; Victor Hugo, orange-red, very striking against the purplish foliage; and Mme. Crozy, which has a remarkably compact habit, and bears flowers of an orange-scarlet colour.

Phylica ericoides (Lubeck).—This is the name of the specimen sent, brought from S. Africa you say by a friend. Some years ago I used to grow this and a few other species of this genus, but unfortunately now they are never seen growing in our gardens. It is called *Bruyere du Cap* by the French, and it belongs to Rhamnaceæ.—W. H. G.

The showing of early-flowering alpine and herbaceous plants.—At a recent metropolitan show I noted quite a contrast in the arrangements of two competing exhibits of alpine plants, which were, I consider, quite object lessons, worthy of notice as to what should be avoided in the one case and what in the other was a pleasing exhibit. Nothing could be said against the quality of the former, many of the kinds shown being a profusion of flower, making a much more brilliant display than the other, whilst the collection comprised several first-rate things. The object in this case was to comply with the terms of the schedule, which stated that the exhibits were to be in pots or pans; these were of various sizes, making it difficult to arrange them in an effective manner. In the other instance the terms of the schedule had in a measure been complied with, but these terms were further added to by the introduction of several mossy and other dwarf Saxifrages, which greatly enhanced the effect, although there was not, on the whole, one-fourth of the flower to be seen in the other case. The most fortunate exhibitor was he with the most flower, the most charming exhibit was the other, the plan adopted by the latter being that of arranging the pots in long baskets, and then adding between these as a groundwork the aforesaid Saxifrages,

&c., of dwarf growth, with here and there small bits of stone in addition. The moral of this contrast evidently, in my opinion, is to leave exhibitors more scope. A good plan would be to allot limited spaces, as in the case of groups, leaving the exhibitors to exercise their own ingenuity in making their respective spaces as effective as possible. I hope this idea may be adopted.—G. H.

KITCHEN GARDEN.

THE DRY WEATHER AND STATE OF CROPS.

THE abnormally dry weather for the time of year, and this coupled with a high temperature and parching east winds which we are now experiencing, cannot but have a very prejudicial effect upon the majority of the kitchen garden crops, that is unless rain falls very quickly and copiously. In fact, the dry weather will have a much more harmful effect than if it occurred later, at least for the smaller seeds and seedlings, which require refreshing showers if only to freshen up the ground, so that the various subjects might become well established. Slugs certainly can do but little if any harm during weather like the present. The worst enemy to contend against is the fly, which preys upon the young Turnips and the various Brassicas almost as soon as germinated. It is with such subjects as these that extra care must be taken or valuable time will be lost, especially if it is found necessary to sow again. The Pea crop must receive prompt attention if it is to prove satisfactory. I refer more especially to the earlier crops, grown perhaps on raised sunny borders and also forwarded in pots. These latter are more apt to suffer than others sown direct in their permanent position, as the roots are more confined. Up to now the haulm looks wonderfully healthy on our heavy soil, William Hurst being in full bloom, also Chelsea Gem. On lighter soils, however, this crop will soon suffer if means are not taken to keep the roots amply supplied with moisture. By the time this appears in print the pods will have commenced to form, and this is the time that support is needed. If the rows have been well moulded up, as they should have been, there will be ample space in which to pour the water with the certainty of its reaching direct to the roots. Give a thorough soaking, and if possible follow on with liquid manure, the intermediate space between the rows being mulched with straw litter. Unless rain falls early and copiously the early Pea crop will undoubtedly be very light, that is unless precautions such as I have just pointed out are attended to. The haulm will also be shorter than usual. The dwarf and better-quality earlies are also certainly much better able to withstand the dry weather than the more inferior rounds. Cauliflowers, again, will have to be kept freely watered, or the chances are that they will button. The advantage of planting in deeply-drawn drills is this season very evident. After watering, a little of the drier surrounding soil may be drawn about the plants, so as to conserve the moisture, but not so as to fill up the drills, as these will be still required for the application of water and later on for giving liquid manure or sewage. Cauliflowers—at least, the earlier types—suffer so quickly in time of extreme drought, that every care must be taken to keep them moving freely, especially after being first planted. Let them once flag, and the chances are that they will not re-

cover. It may seem to some people a lot of trouble to cover each plant over with a flower-pot for a few days or until it can stand erect, but in extreme seasons like the present some such system must be adopted to ensure success.

Seed-sowing is another difficulty to contend against, at least in the case of the smaller kinds, as with these the drills do not have to be drawn much below the surface. Want of adequate moisture also tends to very feeble germination, and, as previously instanced, the seedlings are more liable to the attacks of fly. The best course is to see that the soil is in a fairly rich and friable condition, so as to ensure a quick growth after germination. Draw the drills over-night and well moisten them. The seeds should be sown early the following morning; the drier soil, after being drawn over the seeds, will conserve the moisture to a surprising extent. If the soil is at all lumpy, as it very likely will be on heavy or clay land, fill up the drills with sifted old potting soil. Watering, if the above course has been carried out, will not be needed after the seeds are sown, this having a tendency to bake the surface; besides, the rapid evaporation caused by watering during a very dry and sunny time keeps the young seedlings in a starved state. After the seedlings appear, it is well to keep the surface soil gently stirred with a small hoe, this being a good antidote against the ravages of fly; in fact, hoeing cannot be too freely indulged in for any class of crop during a time of drought, so as to conserve as much moisture in the soil as possible. It is surprising how well this helps on the crops in a time of drought. Early Potatoes came through the soil very quickly, and it is to be hoped that no late frosts will intervene to stop their growth. In fact, the earliest at the time these notes are being written, April 25, are already fit for moulding up. The season is remarkably early, and some steady rains would now help on growth considerably, but without this the crops on light land cannot be but very light. On our heavy clay land the sun's warmth has raised the temperature of the soil considerably.

Abberley Hall.

A. YOUNG.

Forcing Potatoes in pots.—Some cultivators are of opinion that the culture of Potatoes in pots does not pay. On this point I do not agree. In fact, I doubt, all points considered, if they are not quite as profitable as when grown in hot beds. My first supply I take from pots, and these are generally ready for use from March 15 to 20. When the pot ones are over I begin those in frames, and these continue till they are ready in the open borders. I plant these in pots about the middle of December, using 8-inch or 9-inch pots. These are placed in a cold vinery with bedding plants in any dark corner till they are up, when they are removed to a house where the temperature is about 45°. From some of these pots I lift from 1 lb. to 2 lb. of Potatoes.—F. A. C.

Buda Kale.—In a warm and bright season like the present, when most of the Kales have quickly shown flower and the Turnip-top season was over in a few days, the value of the above mentioned has been very apparent, especially as spring Cabbages suffered far more than usual during the past winter. I have had fewer losses among the plants of this Kale and of the Scotch Curled Kales than with any others, though it is claimed for some of them that they are hardier than these; but during the past three years these have been our best, and for midseason work the curled kinds are especially liked, their colour being so much brighter when cooked than is that of the Cottagers' or any other purple-tinged kind. The Buda Kale is our latest kind, and is usually available quite up to May

yielding till then frequent pickings of succulent and uniformly good sprouts. Read's Hearting is recommended for the latest pickings of all, but it always suffers badly here, and those which come through safely scarcely pay for growing, for by the time the Buda is over, Cabbages are becoming plentiful and good. The present is an excellent time for sowing seeds of all kinds of Kale. I usually sow about the end of April, and this is quite soon enough for any purpose, particularly if they are to be grown between rows of Potatoes, &c. If sown earlier, they are apt to stand in the seed-bed too long and get too big before being planted out, this being detrimental to their future well-doing. They should also be sown quite thinly on a rather poor seed-bed, or be pricked off into a nursery bed as soon as big enough to handle well.—J. C. TALLACK.

FORCING LETTUCES.

THERE is often a great scarcity of Lettuce in the early spring, no matter how carefully the winter or early autumn plants may have been tended. There can never be too much Lettuce, so that when we have good kinds that will force quickly a note as to their good qualities may not be out of place. The wintering of the autumn-sown Lettuce entails much time and anxiety, and there is often considerable loss through damp. When a good-sized full-hearted Cabbage Lettuce can be grown in three months, there will be less cause to depend upon early autumn-sown plants, and frames will be at liberty to house vegetables, such as Cauliflowers, Broccoli, and others that would give a better return for space occupied and less labour. When I give three months as the time required for the plants to come to maturity, it must be remembered I am writing of the first three months in the year, when there is less sunshine and therefore a shorter period of growth. When Lettuces can be grown in such a short time, the question arises whether it is worth while to trouble about the autumn sown, which takes eight months to come in, and then only in small quantities. I have only tried a few kinds for forcing. Of these I place Veitch's Golden Queen at the head of the list. This is a decided acquisition, as it is a rapid grower, of close compact habit, and being of a light colour every portion of the leaf appears blanched; it hearts quickly, is very close and of fine flavour, and being of compact growth may be planted closely, and if close to the glass the plants will be ready in about three months from time of sowing. Another good variety is Early Paris Market, of rapid growth and hearting very quickly. I have grown it for early work till this season, when I was advised by a well-known cultivator in these pages to give Golden Queen a trial. Golden Queen is the better and earlier of the two, though Paris Market possesses sterling good qualities, and is one of the best for early forcing. Harbinger is another variety of great merit and very quick growth. This is distinct from other kinds, being much like Endive, with curled leaves of a light colour. The leaves are crisp and tender and admirably adapted for the salad bowl. Last season I grew this variety in boxes in cold frames with great success, it being one of the best forcers I have grown. There are other kinds sent out as forcing varieties, which no doubt are trustworthy, but those named I have tried and can thoroughly recommend them.

A few words will suffice as to culture, as when grown under glass the chief points are thin sowing, early pricking out, airing and moisture, keeping near the light and free of green-fly and other pests. If dryness is allowed, a check is given, growth is arrested, and a crop of insects follows. Seed may be sown in boxes or pans or in the frame broadcast, but early in the year I advise the boxes if only a small quantity is required. In all cases thin sowing is essential to get sturdy plants. Sow in rich compost, as a quick growth is required, and water sparingly till the seed germinates; indeed, in moist soil none will be required. Prick off early, lifting each seedling carefully to pre-

serve the roots intact, with a small portion of soil, if possible, attached to the roots, plant firmly in good ground near the glass, and protect at night by covering the glass with mats, litter or such like. By sowing in a little heat and transferring to cold frames when the seedlings are above the soil, time is saved; but I do not think the plants are so robust as when grown cool from the start. Feeding with liquid manure as the plants increase in size will be beneficial, and in dull or damp weather occasional dustings with dry wood ashes will arrest damp and prevent decay. Time will be saved by sowing in the frames and thinning out, but it is not always possible to have sufficient frames to devote a large space in this way, and when planted in rows out of the seed-pan or box, there is no waste and less seed is required. The above varieties are also valuable sown in boxes or pans, to cut in a small state in the same way as Mustard and Cress are used. Harbinger is admirably adapted for this purpose, as it is a larger grower with more leafage.

G. WYTHES.

HARDINESS OF BROCCOLI.

Planted.	Alive.
280 Snow's	none
240 Model	175
210 Portsmouth or Sulphur.....	54
310 Penzance	63
194 Knight's Protecting	45
194 Perfection Late White Broccoli	127
388 Leamington.....	193
1816	657

The above figures will show that although we had a severe winter here, having had 25° and 26° of frost on several nights with no snow to protect the Broccoli, we must consider ourselves fairly fortunate, and find over 650 heads very useful indeed at this time of the year, considering how other crops have failed in more favoured parts. All of these but Model are grown in what I may call an open field with south aspect, and no protection but Hornbeam hedges. Model is planted on a sunny bank in kitchen garden following early Potatoes. I make two and sometimes three sowings, but I find the greatest part of the above was planted from the late sowing on May 21 on stiff, hard, not over-rich ground. I tried laying or heeling over several years back, but could not notice any benefit from it, the stalks not being so dry as when left standing. I prefer if the plants are growing too sappy to cut round them with a spade and leave them standing. The above figures will cause me to alter the numbers a little and possibly drop out some of the worst offenders.—J. LAMBERT, *Powis Castle Gardens*.

—In reply to the inquiry (p. 333) of Mr. Strugnell as to the procuring of Broccoli heads at various times from seed sown March 20, I commence by cutting Michaelmas White at the end of September and during October. At the same time I have Veitch's Autumn Caulidower in frames, lifted from the open, of course, well into November. In consequence I found it was not necessary to grow Veitch's Autumn Protecting. I then get the intermediate supplies from Mammoth, Pearl, and a few Vanguard. I then have Leamington, Knight's Protecting, and Late Queen for the end of April and May supplies. During the fifteen years I have been here I have never yet had Broccoli in June, in spite of sowing the seed at various dates, as late as May in some years. No matter how small the plants may be, the heads turn in before the last-named month. I have therefore abandoned all sowings but the one named, but will, perhaps, for curiosity make one of Late Queen this year in May. In this neighbourhood we have generally had a spell of hot, dry weather some time during the spring months; several times of late the thermometer has stood over 80° in the shade. This, accompanied with great drought, hurries on the Broccoli heads somewhat out of their ordinary season, and renders exceptionally late heads out of the question—here, at any rate.—E. MOLYNEUX, *Swanmore Park*.

—Mr. Young's remarks (p. 304) come at a very seasonable time. If a few more readers of THE GARDEN would give this year's experience with Broccoli, giving also the locality, it would be very useful. In this county Broccoli seems to fare no better than in Surrey, although most people speak of it as favourable for the growth of that plant. I have had good patches of Snow's Winter, Cattell's Eclipse and Late Queen. Although Late Queen turned in ten days before Eclipse, I consider all the same it is by far and away the best late I have grown.—ARTHUR HALES, *E. Devon*.

GARDEN FLORA.

PLATE 903.

HABENARIA MILITARIS.

(WITH A COLOURED PLATE. *)

It is now about fifteen years since this plant was first described by Reichenbach under the name of *Habenaria pusilla* from specimens submitted to him by M. Godefroy-Lebeuf, of Paris, which he had obtained from the mountains of Phu Quoch, in Cochinchina. These were weak and small, hence the term *pusilla* was very applicable. In 1886 M. Regnier, of Paris, brought to France some living plants, and it soon became evident that the name of *pusilla* was no longer correct, and it was rechristened *H. militaris* because of the brilliant colour. *Habenaria militaris* belongs to a section of the Orchid family which has hitherto obtained but very little favour with English growers. Several species have from time to time been grown in our gardens, amongst them being *H. salaccensis*, *H. blephariglotis*, *H. margaritacea*, *H. Lindeni*, *H. candida*, *H. ciliaris* and various others, but they have always vanished in a mysterious manner. The flowers of none of the kinds named above were so showy as those of the species represented in this week's plate. Mr. White, who has charge of Sir Trevor Lawrence's collection at Burford Lodge, Dorking, grows and increases this species better than any other person I know. He seemed to cast a doubt upon a statement made by me in these pages upon the question of keeping this cool in the winter when at rest, for he said it was never taken out from the house in which it grew. This may have been, but was not the heat of this house some 20° lower in the winter than it was when the *Habenaria* was growing and flowering in it? I believe *H. militaris* will stand a temperature as low as 50° without receiving the slightest injury. When growing, the plant requires strong heat, and it likes a good moist atmosphere. The pots, which should be small at first, must be well drained, using for soil good light yellow loam and brown peat in about equal parts with some chopped Sphagnum Moss and sharp silver sand. In potting, good-sized tubers may be buried an inch below the surface, but for smaller ones a less depth will suffice. After the plants have well started into growth they may be shifted into 4-inch or 5-inch pots, according to the strength of the plant, but no other shift will be necessary. The plants should stand up near the glass in order to prevent them becoming drawn and weak. When growing they like an abundant supply of water, and they should also be frequently syringed overhead to keep down thrips and red spider. The plants, although standing close up to the glass to enjoy the light, must be shaded from the strong rays of the

* Drawn for THE GARDEN by Gertrude Hamilton in Sir Trevor Lawrence's garden at Burford Lodge, September 16, 1892. Lithographed and printed by Guillaume Severeys.



HABENARIA MILITARIS

sun, or the leaves will soon be spoiled, for they are thin and soon get burned. As the strength of the plant declines, which occurs soon after the flowers fade, gradually withhold water until the stems fall away; the pots may then be removed to a shelf in a temperature not lower than 50° or 60°, keeping the soil in a fairly moist condition. If allowed to become too dry the tubers will suffer from the dry rot.

WM. HUGH GOWER.

THE WEEK'S WORK.

PLANT HOUSES.

FORCED SHRUBS, &c.—The majority of these will now have passed the flowering stage, but, all the same, they should not be treated as if of no further use or importance. It is waste, to put it in the mildest term, to cast them aside or to treat them in what amounts to the same thing in the end. If it is never contemplated to force them again, relying rather on fresh material, still they will serve many a useful purpose out of doors. In such a case, if not yet quite hardened, no time should be lost in seeing to this point of culture, and then let them be planted as soon as possible, for if deferred it only means additional labour in watering. By taking care of them, however, the same plants will continue to do good service in numbers of instances. *Deutzia gracilis* can be flowered for a certainty every spring by allowing the plants to complete their growth under glass, treating them generously even after they have flowered. *Azalea mollis* and the Ghent varieties are also cases in point where a good return may be had for several years even without repotting. Unlike the *Deutzia* aforementioned, however, these only flower profusely every other year, but then with care they can be had as good as newly-potted-up plants, with one marked advantage, viz., that of more enduring properties in the flowers with hardly any disposition to cast their flower-buds prematurely. I am inclined to think the Guelder Roses will come under the same category as these *Azaleas*. *Spiræa confusa*, on the other hand, will flower every spring; so will the double white Chinese *Prunus*, *Rhododendron* Early Gem and others of this type will be satisfactory also if retained in pots; whereas the larger forms will not pay on the whole for extended pot culture, nor will *Kalmias* and *Andromedas*. In any case, however, it pays to take care of the plants after flowering, gradually hardening them off rather than consigning them to any out-of-the-way corner immediately after flowering. The *Deutzias* and *Azaleas* will soon be fit to stand outside, at least the earliest of them, where the growth has nearly or quite been completed. When first taken out a slight protection should be given; if nothing better in this way can be provided, let them stand in the shade, as under trees, for a week or two. My plan then is to plunge them a few inches over the rims of the pots in a bed of coal ashes, thus largely saving the labour of watering the summer through.

FORCED BULBS, &c.—What applies to shrubs has equal bearing upon the majority of bulbs. I have never done any good, however, with Roman Hyacinths or the early Roman and Paper-white Narcissi. Other Hyacinths and the later of the Polyanthus and Daffodil sections of Narcissi will amply repay for any care bestowed upon them. All of these can be made of much service for planting in mixed borders or the margins of shrubberies; thus treated they will continue for years to do good service. Or if relifting in a year or two be found expedient in the case of Daffodils, then plant these singly in rows, keeping each sort separate. Forced Lily of the Valley, clumps in particular, are exceedingly useful for planting out for future use. If these be given good attention for water during the season they will become well established by next spring. These clumps should be planted in

various aspects; if in a warm sunny spot they will form a good first succession to the last of the forced ones, whilst in a cool position they will, on the other hand, aid in prolonging the season. In any case a good top-dressing of decomposed manure should be applied immediately they are planted, the clumps being allowed a surfacing of soil as well. *Dielytras* and *Spiræas* also should be planted, these being given good rich soil so as to encourage a fresh growth another year. Nothing that is hardy in fact need be cast aside, all serving a good purpose in some way or another, whether they be plants or bulbs.

BULBOUS PLANTS IN POTS.—Of these, belonging to the harder section, the *Agapanthus* should not now escape notice; where these have been kept dry through the winter some water should now be given, whilst now they will be perfectly safe out of doors. If any have cracked their pots, as they will often do, no time should be lost in repotting, keeping to nearly all loam, adding road scrapings if sand be short and potting moderately firm. Callas that have ceased to yield any spathes should have a slight rest for a time, after which they may be planted out, where this plan is adopted, allowing them to be rather below the ground level or, at any rate, not on a sloping plot, the object being to secure all the moisture possible. Those who may be growing the newer forms of yellow-spathed Callas will act wisely if they keep them rather warmer than in the case of the old kind afore quoted. The dwarf form, or Little Gem, may, however, be treated the same as the old white. Now would be a very good time to break it up for stock; in doing this, however, I would if possible plant it out in a pit or frame. Lilliums of all the hardy kinds in pots should now be freely exposed; they will be quite safe outside upon a bed of ashes, exception being for a time made in the case of late-potted bulbs, which will not yet have made many roots. Care must be taken that these do not receive an undue amount of water. *Gladiolus* The Bride can be treated according to the circumstances for either early or late flowering, either being left in the houses or stood outside also. *Lachenalias* now drying off should not be allowed to get excessively dry. As soon as the foliage has died down, a surface dressing of cocoa fibre will serve to prevent too much drought. JAS. HUDSON.

FRUIT HOUSES.

YOUNG VINES.—These do not always grow very strongly during the first season after planting, but if freely cut back at the winter pruning and the roots have the benefit of a well-made border, the progress made during the second season is frequently most satisfactory. There is also the probability of their growing even too strongly, and in this case, instead of eventually being hard and durable, the canes will be pithy and of a character that will not long stand any strain. If only moderately strong, the plan of stopping the leading growth at the length it will be left at the next winter pruning, or say at from 6 feet to 9 feet from the old wood, stopping the laterals and sub-laterals at the first joint, is to be recommended. The foundation of long straight Vines is best laid by the avoidance of any shortening at the winter pruning, three seasons' clear growth being sufficient to reach the highest point of all but exceptionally long roofs. Much harder stopping is somewhat risky, especially if the growth is somewhat rank, this being liable to force out the back buds. There is not much likelihood of this occurring to an injurious extent after cropping the Vines has commenced, and in the case of quite young Vines allowing the tendrils to develop has also a very steady effect; it is, in fact, a good practice. On no account should the laterals on this season's young rods be cut or pinched out, stopping at the first leaf being the usual practice, allowing them unrestricted growth to the extent of reaching, and even clothing, the back wall with young growth being advocated by those who are in a hurry to have their borders crowded with roots. Avoid over-cropping young Vines, as this

may unduly check both top and root-growth. In particular remove all bunches showing on those planted last winter and intended to remain permanently, supernumeraries (if any) being cropped to their full extent. Give strong young Vines the benefit of fire-heat on cold nights and dull days, the aim being to get the wood thoroughly hard and well ripened. Quite newly-planted Vines do not always grow very strongly at first, and are apt to come to a standstill after the first flow of sap is exhausted. While they are waiting for fresh supplies, keep the house warm, the atmosphere well charged with moisture, and syringe overhead frequently; but avoid saturating the soil at the roots, keeping the border somewhat on the dry side being the surest way of promoting early and strong root-action. Stop the leaders when from 5 feet to 6 feet in length, and the laterals may be allowed to extend with advantage.

PLANTING VINES.—When newly raised Vines are 5 feet or rather less in height and are well established without being root-bound in 7-inch pots, they plant out well, especially if the borders are inside. Not unfrequently those planted in May, or not later than the first week in June, quickly surpass those put out during the winter. A border 4 feet wide and 30 inches deep is ample for the first two years, and this may either be composed principally of the best fresh turfy loam procurable, or loam and good garden soil in equal proportions, old mortar rubbish, "burn-bake," and half-inch bones being freely added. Make this rather firm, unless it has been thrown together long enough to settle down considerably. Permanent Vines should go one to each rafter, or say not less than 4 feet apart, supernumeraries or those intended to be cropped heavily for one or two seasons and then cut out, being located either midway between in the same line, or, better still, 3 feet or more away from the front, but still between the permanent Vines. They would also succeed in the body of the house and against back walls till the permanent Vines shaded them badly. See that the soil about the roots is thoroughly moist before turning out of the pots. Keep the balls intact and plant firmly, surrounding with a little good soil. If the soil is left in the form of a basin, it will be an easier matter to keep the plants properly supplied with water till the roots have spread well out into the border, the first supply being given at once and warm water used. Mulch those planted outside with a little good leaf-soil. Train the Vines either up stakes or the wires, and stop when from 6 feet to 8 feet in length, the side shoots being kept pinched to a single joint. Maintain a fairly brisk heat and moist atmosphere, as the growth cannot well be made too early.

VINE BORDERS.—The great heat and long protracted drought have necessitated a freer use of the watering-pot generally than usual, outside borders in particular not often requiring to be freely watered before June. Even those heavily mulched or protected ought to have been examined long ere this, and if found to be approaching dryness have been given a moderate soaking of water that had been well exposed to the full sunshine for a few days. Ordinary rainfall does not penetrate to any appreciable extent through a mulching or covering of fresh manure or leaves, and if not already done, the borders, whether covered or not, should at once be examined. If they require or are in a fit condition to receive water, give it them, this affording a good opportunity of washing down whatever manure has been previously applied. It is not such a great amount of water that is required if only it is applied before the soil becomes very dry. Where heating material was early placed on a border, or even a heavy covering of leaves only, this will most probably have attracted many fresh roots to the surface. Instead of returning the old covering, let these surface roots have some good fresh compost in the form of top-dressing, and in any case substitute a mulch of decayed manure for the leaves, surfacing this over with straw litter. This will keep the roots busy near the surface, and also save the watering-pot considerably. Inside borders not being so much exposed to sunshine and drying

winds need not be mulched, but would be all the better for it, not forgetting the strawy litter, as this keeps the manure from drying or caking badly and presents a tidier appearance. There ought to be no fixed times for watering inside borders. Water, if possible previously warmed, should always be given before the soil, when tested, crumbles in the hand, as then one gallon does more good than four gallons would do later on. When the soil is in a semi-moist state is also when liquid manure can be more safely and effectively supplied. Heavily-cropped, well-established Vines should have plenty of this, but little and often rather than in strong doses occasionally. PRACTICAL.

THE KITCHEN GARDEN.

DWARF BEANS.—The present being such an exceptional season, many people have, no doubt, been tempted to sow dwarf Beans in the open ground; but with these there may yet be a risk, that is, unless precautions are taken to afford protection. But taking all points into consideration, the end of the first week, or even the 10th of this month, will be a safe period, and the Beans will be very little, if any, behind those sown earlier. Select a warm border for this first crop, the soil being in a well-enriched condition. Draw out fairly deep drills, arranging the seeds in double rows 3 inches or 4 inches apart. The rows should be drawn quite 2 feet apart. On dry soils, and if no rain should have fallen by the time this appears in print, well soak the drills with water overnight, this ensuring more regular germination.

SCARLET RUNNERS.—Being equally as tender as the dwarf Bean, the date for sowing runner Beans may be the same. In the smaller gardens, where but little space can be afforded vegetables, this crop is a veritable sheet anchor; therefore see that there is ample preparation of the soil, so as to ensure their holding out well. On heavy land, if well manured and in a fertile condition, drills may be drawn 6 feet apart and the seeds placed alternately in double rows 6 inches or even 9 inches apart, this allowing for a double row of sticks placed crosswise. On light soils trenches should be formed, these being the same distance apart as above stated. The manure being placed directly under the rows, the roots derive full benefit. The trenches must be filled up almost level, there being only a shallow depression so as to hold water or liquid, of which they will take a good supply in a dry time. Use new seed if possible, but any two years old should be soaked over-night, sowing only that which is plump. Runner Beans may also be grown as dwarfs, that is, if there are no stakes. For growing without stakes, dibble the seeds in in single rows 9 inches asunder, the rows being 4 feet. When they commence to wire, nip out the points, which will also be needed again whenever the plants begin to run.

TURNIPS.—The dry weather is not very beneficial to young seedling Turnips, but as these are in such constant demand means must be taken to prevent any break in the supply. An east border, of course, not shaded by overhanging trees or buildings, is a good site, or, failing this, between rows of Peas where these have been set wide enough apart. The soil must also be in a well-pulverised and well-enriched state so as to force an early growth, and enable the young seedlings to grow quickly out of the way of fly. Draw the drills 15 inches apart and water them beforehand by pouring water gently into the drills, afterwards drawing in the soil. If at all lumpy fill up with sifted potting soil. The Snowball type is the best for sowing now.

SPINACH.—This makes slow progress in a dry and poor soil, the seeds in very dry soil often failing to germinate. A slight shade is very beneficial, preventing the seedlings running early to seed. For this reason select an east border, taking care also that the soil is in a highly enriched state and also well pulverised, this being far more important towards ensuring success than sowing in poor and badly worked soil, and having to have

almost daily recourse to the watering pot. Draw the drills about 1½ inches in depth and 15 inches apart, watering previous to sowing if the ground is dry. Sow thinly, using the thinnings as they become large enough, the remainder also being drawn as required after a few gatherings of the main leaves. Instead of making one large sowing make smaller ones at intervals of ten days or a fortnight, the supply being therefore more regularly maintained. If so desired for a hot weather crop, a few seeds of New Zealand Spinach should be raised in 3-inch pots, being placed on a gentle hotbed to germinate, afterwards hardening off the seedlings and planting out early in June.

VEGETABLE MARROWS.—For planting in prepared stations the present is a good time to sow the seeds.

RIDGE CUCUMBERS.—These may be raised similarly to Vegetable Marrows, or where the plants are to remain. In either case, whether raised in pots to be planted out or sowing direct, a suitable station must be prepared. What is wanted is a ridge of fermenting material put together firmly, this being surfaced with 9 inches of fertile soil, being altogether about 30 inches in height. The plants must be set out 3 feet apart and under handlights for the time being, or until the growth made is a signal for their removal. Keep them well supplied with water, taking care also that the site is sheltered, but well open to the sun.

A. YOUNG.

ORCHIDS.

THE exceptionally fine weather experienced during the last few weeks (six weeks, in fact) still continues at the time of my writing these notes. In all our Orchid houses ample provision was made for catching the rain water from the roofs of the houses, and now we have the benefit of it in a full supply, which will last several weeks yet. There are tanks for the hard water pumped up from a well in the garden, and I am careful to use this for damping down under the stages, swilling out the paths, &c. The rain water is used for nothing else but watering the Orchids, and even for that no more is used than is absolutely needed for the purpose. Young cultivators of Orchids, and other plants as well, should be taught to carefully husband the water and not use more than they really require for the plants. I have watched gardeners watering their plants, and in the process as much water flowed over the rims of the flower-pots as passed down amongst the roots. Even if an unlimited supply of water was at hand, the labour of dipping up and applying a double quantity of it would be a serious waste of labour. We must consider the minor details of the work, for it is by attention to those that success is attained in any branch of gardening as well as in Orchid culture.

The tropical temperature in the warmest house is easily maintained without the aid of artificial heat on most days, but we do not allow the fires to go out altogether, and the temperature is easily kept up by stirring up the embers and adding fuel according to the state of the weather. The nights are yet cold, and danger from sharp frosts is not yet over. Those who have plants of that rather remarkable Orchid *Grammatophyllum Ellisi* would do well to pay attention to the plants. The young growths push out at this season, and may rot off if water settles in the centres of them. Water is required rather freely as the plants make their growth, but this is really one of the plants that we have not yet quite mastered the culture of. The flower-spikes come up with the young growths. It is epiphytal on the branches of trees in its native habitat in Madagascar, and when first found by the Rev. W. Ellis the plants were attached to branches hanging over the water. It is very difficult to provide the natural conditions for every class of Orchids in the same house. Under cultivation the plant in question makes much longer and broader bulbs than those in its native habitat. Mr. Ellis flowered it in August, 1859, and his plant produced bulbs 11 inches long and 2 inches wide, as against 7 in. long and 1½ ins. wide upon the native

bulbs, but they would continue to grow and thrive in the tropics, while in our hothouses they speedily degenerate. *G. speciosum* is a gigantic species now to be found in several collections. There is an immense specimen in the Burford Lodge collection, and as it is well established we may expect to hear of this specimen producing its flowers. Fancy a plant of this Orchid in our hothouses such as is described by Mr. Jas. Herbert Veitch from a plant he saw growing in the Botanic Garden at Penang. It is 42½ feet in circumference, the stems are 6 feet to 7 feet long and it produced thirty racemes, one of which measured 7½ feet in length. It has not flowered recently in England, but a good coloured plate is to be found in the *Botanical Magazine*, t. 5157. The plant will require a good resting period, and an intermediate temperature at that time is best. Orchid flowers are opening earlier than usual, owing to the forcing weather, and it is difficult to keep them long in good condition. We are not doing much in the way of repotting any plants, for the reason that other work presses; but all Orchids that needed repotting were seen to during the months of February, March and April, but, of course, any plants needing repotting should be seen to. When Orchids of any kind get into a bad condition and the soil in the pots is in a state of rotteness, the plants will also be unsteady and rather shaky in the pots. In that case it is better to repot at once in the soil or compost most suitable for the genus to which it belongs. All such feeble specimens as may be in the above condition should be repotted now in preference to being done earlier, for if they are repotted too early, it will be difficult to get them to start freely into growth, but they will do this now, and after the roots have laid hold firmly of the fresh potting stuff, they are likely to do well.

One of the numerous causes of Orchids getting into bad condition is dirt upon the leaves caused by parasites of one kind and another upon them. The most injurious are the yellow and black thrips, which work at first unseen upon the more tender part of the leaves before they are fully developed, and as they (the leaves) increase in size the traces of the pests are plainly visible, and there they will remain for years. It is not easy to exaggerate the importance of keeping these insects from the plants, and this can be done only by dipping them in the solution I have previously advised. Fumigating with tobacco smoke will kill thrips and all kinds of the aphid tribe, but tobacco is very dear and tobacco paper sold in the trade is too dangerous and uncertain for the best Orchids. I have used Campbell's fumigating material as the more recent attempt to solve the question as to which is the best material to use for fumigating. It may not be the best, but it is the safest I have used up till now. White scale and sometimes mealy bug will get upon the Orchids in the warmer houses, but I cannot conceive of any fumigating material that could destroy such parasites without at the same time killing the plants on which they feed. Probably the best thing is to carefully wash these off with soft soapy water. It is at this season, when work is pressing on all sides, that plants get neglected, except in such gardens, of course, where Orchids are under the care of men who have no other details of garden work to think about. It is not so with me, and the larger number of places are similar; gardeners fail not because they cannot do the work, but because they cannot find time to do everything at the right time. The temperature now should be well kept up, especially where the *Dendrobiums* and such plants are making their growth. J. DOUGLAS.

Slugs.—When, a short time since, speaking to some cottagers on the management of their allotment gardens, I found that in the way of garden vermin, slugs appeared to cause them the greatest trouble. That the dry weather is keeping slugs in check there can be no doubt, but when rain comes the growth of vegetable matter of all kinds will be something astonishing, and then they will revel among it. All that one can do is to carry

out a vigilant system of trapping, particularly by hunting for them at dusk and after a shower of rain. Little heaps of brewer's grains make excellent traps, and can be employed with great advantage now when green crops of all kinds are practically standing still for lack of rain, and a Cabbage leaf of any size is a rarity. When a capture is made a speedy means of destruction should be employed. The value of lime dusted about their haunts is great.—R. D.

ORCHIDS.

PHAIUS TUBERCULOSUS.

THIS truly beautiful plant, which was introduced in a living state from Madagascar some thirteen years ago by Mr. Sander, of St. Albans, has hitherto been difficult to manage successfully, and I am much obliged to Mr. Maidmont for detailing his treatment by which he has produced some sixteen flowers upon three spikes. This species was figured in THE GARDEN, July 19, 1884, and a reference to it will at once reveal the beauties of the flower.

The plant has a somewhat decumbent growth, the pseudo-bulbs being rather closely jointed, and bearing upon the apex several leaves, each upwards of a foot in length. The scape, which is 1 foot or 18 inches long, is erect, springing from the young growth when nearly fully formed, and bearing usually from three to six of its large and richly coloured flowers. The sepals and petals are pure white, the petals being somewhat the broader of the two; the lip is of curious shape, the side lobes large, the ground colour orange-yellow, profusely spotted and blotched with crimson-purple. The front lobe is smaller, the ground colour white, blotched and spotted with rosy purple, and on the disc are three fleshy ridges of a deep orange-yellow, the edges of the middle lobe being prettily frilled, making up a novel and grand flower. This plant has hitherto been very difficult to cultivate, although several growers have succeeded fairly well with it. I have seen the plant in Mr. Sander's nursery doing well, but then it is not in every place where a tank of water can be provided for the plants to hang over. Mr. Maidmont says his "plants have been grown with the *Phalænopsis*, where the temperature never falls lower than 65°," and this house being shaded, of course suits the *Phaius* also. The plants, hung up in shallow baskets near the roof glass, have an abundance of air, and during the growing season are frequently syringed, whilst water to the roots can be given at pleasure. In the winter, its resting season, water is never entirely withheld, the baskets are well filled with drainage, and the soil used is a mixture of good brown peat fibre and chopped *Sphagnum* Moss, upon which the plants are firmly potted. This then is a system simple enough, and one which should commend itself to many of our Orchid growers. One of the principal items is never to dry off the plants, and to give them, although a cooler treatment in the winter season when at rest, yet the highest temperature that we maintain in any of our Orchid houses.

WM. HUGH GOWER.

Cattleya Mossiæ chiriquensis.—I have received a series of forms of *C. Mossiæ* from M. Linden, of Brussels, who thinks they represent a very fine type and early flowering. As far as early flowering is concerned, however, one is not safe in expressing an opinion, for the unusually warm and bright weather we have had this spring would seem to have brought *Cattleyas* and many other Orchids

along out of all season. I consider the flowers very fine, and I have seen the great majority of this variety which have flowered in this country and many abroad for the last forty-three years. It is a form of *C. labiata*, which has a special charm for me, but I do not see why these flowers require the special designation of *chiriquensis*.—W. H. G.

Phalænopsis casta.—J. Edmonds sends for my opinion a flower from a plant which he purchased for *P. amabilis* (*P. Aphrodite*), and which he says when not in flower looks exactly like one of that species. As far as I can judge, the plant is *Phalænopsis casta*, a supposed natural hybrid between *P. Schilleriana* and *P. Aphrodite*, but it does not partake of any of the former parent in the markings of the leaf. In many respects the flower sent is very much like that of *P. Aphrodite*; the sepals have a very faint tinge of rose or rosy purple at their base, the lateral ones tinged with a stain of yellow, the petals being pure white, lip dotted with crimson at the base, where it is also tinged with yellow, having a pair of recurved tendrils at the apex. This is a very beautiful plant and I think, too, it continues rare. It first appeared from amongst plants introduced by the Messrs. Low from the Philippine Islands.—W. H. G.

Odontoglossum Roezli.—C. Judd sends me an exceptionally good form of this plant, saying he now has a plant bearing fifteen such flowers. Each flower measures some 4 inches across, and is pure white, the petals in addition being stained at the base with a blotch of reddish purple and a large yellow blotch on the lip at its base. This plant, which is included with the *Miltonias* by the most recent authorities, is found at a lower elevation, and consequently it requires more warmth than is accorded the *Odontoglossums*. At the same time the plants require to be stood upon a damp, cool bottom if the thrips are to be kept from them. I had for several years suffered from this vile pest when the plants were stood upon the stage in the *Cattleya* house, so much so, that at this season when in flower the plants were leafless; but having observed how well the small plants of *M. Phalænopsis* had wintered in the East India house on the ledge of brickwork supporting the roof, I had it enlarged to take bigger plants of this kind and its near relative *M. vexillaria*. By keeping the plants just moist and the brickwork well watered both morning and evening, the plants passed the next winter and were not troubled with thrips. In the summer I moved them to the cool house, and it is by adopting a similar system that Mr. Judd appears to have reaped his success.—W. H. G.

Cattleyas at Syon House, Brentford, are well worthy of note, and we have never seen them finer. Although the collection is not large, it comprises well-grown plants of choice things, and particularly beautiful was a variety of *C. Schroederæ*, which, as well known, varies considerably in the size and colour of the flowers. Those at Syon are of large size and excellent form, the sepals and petals of a delicate rose shade and the lip rich orange in the centre. Note was also made of *C. gigas Harrisoni* (a variety of attractive colouring) and forms of *C. Mendelii*. Whilst writing of the Orchids here we may mention that other things in bloom comprise *Dendrobium macrophyllum*, *Oncidium spathulatum* (very beautiful), and *Cypripedium barbatum grandiflorum*. This Lady's Slipper is remarkably well grown by Mr. Wythes, and represents a very fine variety. The plants carry on an average over thirty flowers, each of rich colour, resembling those of *C. Lawrenceanum*. The variety *grandiflorum* is a great advance upon the type in every way.

SHORT NOTES.—ORCHIDS.

Lælia elegans (*A. Cunningham*).—The flower sent is an exceptionally good form of this plant, and when open and in its prime it must have looked lovely, the lip being exceedingly rich and dark in colour.—W.

An *Angræcum* from Llandudno.—Mr. Broome sends from his collection some flowers of a

curious *Angræcum* which I fail to recognise. He says it is a small plant, and I trust he will succeed in growing it bigger and in flowering it again another year, and give me an opportunity again to name it.—W.

Dendrobium Findlayanum.—C. Horquet sends flowers of a very fine variety of this plant, saying, "It has shut up all its flowers in the course of a day or two. Why is this?" I can only suggest as the cause, dryness at the root, or the effects of an over-dry atmosphere, or both combined.—W. H. G.

Phalænopsis speciosa.—J. Edmonds also sends a very deeply coloured large flower of this species, which belongs to the brush-lipped section. If I mistake not, we are indebted for its introduction to Major-General Berkeley, who found it growing in several islands of the Malay group. This plant, like all the members of this genus, enjoys a hot temperature, and indeed I think it is one that requires more heat and moisture than the majority of this now large genus.—W. H. G.

Phalænopsis Luddemanniana is a charming species, a native of the Philippine Islands, and in bloom in the Orchid house at Kew. It is of note for the rich and attractive colouring of the well-shaped flowers, the sepals and petals thickly barred with a chocolate colour on a white ground, and the centre of the lip is deep violet-magenta, richer in some varieties than in others. The leaves are of considerable length, and a plant when in full beauty and well grown adds interest and colour to the Orchid house. It is grown at Kew in the warmest house and in a basket suspended near the light.

CHRYSANTHEMUMS.

NEW HAIRY CHRYSANTHEMUMS FOR 1893.

FOR little more than a century past the history of the *Chrysanthemum* has been a rapid succession of surprises and new departures from established tracks. The present exceptional popularity of this flower must almost wholly be attributed to the remarkable achievements of the raisers in so continuously setting before us year after year novelties possessing characteristics that have not distinguished their predecessors, thus exciting and stimulating afresh the enthusiasm of the admirers and exhibitors of the *Chrysanthemum* when their ardour might otherwise have flagged. The incurved type has remained and seems likely to remain almost stationary both in form and colour. For the past twenty-five years no progress worthy of the name has really been made with the varieties belonging to that class, and if the *Chrysanthemum* had had to depend upon them, its hold upon the public here and elsewhere would in all probability have been very slight compared with what it is to-day. The truth of the matter is that this very limited section appeals only to a few, and those mostly of an older generation. A special floral education is necessary to appreciate and thoroughly understand this form of florists' flower, and this is not easily attained to by the majority of visitors to the exhibitions, and upon whom their success depends. The present widespread craze for the autumn queen in England, as well as in America, is the direct outcome of the popularisation of the Japanese varieties. In that group there have been more wonderful changes of form, size and colour than in all the other sections put together. It is with the Japanese that the raisers at home and abroad seem to have given the greatest scope to their skill and ingenuity in cross-fertilisation and in producing such marvellous variations, that we might have been justified long since in assuming that they had exhausted the mine of floral wealth upon which they have been so long and patiently working. But the capacity of the *Chrysanthemum* is apparently inexhaustible, and just when we think the limit has been reached, some new type is put into commerce, and then for a time everybody, be he trade importer, amateur grower or exhibitor, runs after the most modern

novelty until his attention is attracted by another and still more wonderful new comer.

Almost all the favourite Japanese show flowers of twenty years ago have been pushed aside in the march of progress. Even the leading flowers of ten years ago may be regarded for all practical purposes as extinct. At that period there would have been scarcely a winning stand at any exhibition that did not contain examples of Fair Maid of Guernsey, Mme. C. Audiguier, Peter the Great, Comte de Germiny, Elaine, Meg Merrilies, M. Ardène, Baronne de Prailly, Criterion, Hiver Fleuri, Album plenum, Sarnia, Fanny Bouchardat, Soleil Levant, and others now no longer considered absolutely necessary to ensure success.

The latest developments of the Japanese Chrysanthemum are undoubtedly the Japanese incurved varieties, although I am aware that a few varieties of the kind have existed since the days of Robert Fortune, and the hairy-petalled Chrysanthemums now so strong in numbers as to demand in the next issues of the National Chrysanthemum Society's schedule and catalogue a special section to themselves.

In the eye of the florist, whose code of properties is precise and inexorable, these new comers will be regarded as usurpers of a monstrous race. They are in many cases neither incurved nor Japanese, but an ugly sort of compromise between the two. Without the curious glandular outgrowths which make them remarkable, the whole collection would be thrown aside with an exclamation of contempt by those who have been brought up in the fancy. It is just this peculiarity of hairiness, however, that saves them from destruction, for as it appears to have captivated the eye of those who like curious flowers, and the general public care not a fig for properties, so there seems to be good ground for predicting a future for hairy Chrysanthemums, although it will, I believe, be a merely transient one.

Most of the French growers have taken them up and are sending out a rather large number, considering what a short time the originals have been in cultivation. M. Simon Delaux, M. de Reydellet, M. Crozy, M. Lacroix, and M. Sautel are among the principal contributors from the other side of the Channel. In America Mr. T. H. Spaulding, Messrs. Pitcher and Mandt, and Messrs. Nathan Smith and Son are also distributing some new seedlings belonging to the hairy section, and there is no doubt that when the novelties of 1893, which number between sixty and seventy sorts, are shown in the autumn there will be no small degree of interest excited in them.

Most of those enumerated in the list appended to this note are seedlings, but there are a few that have been introduced into America from Japan via California. It will be useful for purposes of future identification to record the names of these. They are King of Ostrich Plumes, Golden Ostrich Plume, Oriental Beauty, Pacific, and Virginia.

Lovers of floral curiosities will, I am sure, keep a keen look out for these new competitors for public favour, and if they are presented to the public in anything approaching good condition and prove to be of good size and substance, for large flowers will tell in the hairy section as in all others, they will no doubt sell freely, and be quite as remunerative to the introducer as any that have gone before. Whether they have come to stay is another point, and one upon which it is premature to offer any decided opinion.

Adam de Craponne.—Incurved petals, velvety dark carmine, reverse silvery.

Ami Ch. Rabutot.—Long incurving petals, bright carmine, coppery reverse.

Ami Cl. Buisson.—Carmine-amaranth, reverse mauve.

Bailly de Suffren.—Lilac-mauve-rose, shaded silver.

Baronne d'Hercourt.—Incurved; darker in colour than Louis Boehmer, reverse silvery white.

Belle Arlésienne.—Globular form, incurved petals salmon-white, striped and speckled light carmine, tipped gold.

Belle Maguelone.—Globular incurving bloom; purple-carmine, reverse silvery grey.

Blanche de Castille.—Japanese; long petals, pure white.

Bouquetière.—Fine petals, light yellow, passing to white.

Chanoine Eysséris.—Broad petals, velvety carmine-amaranth, reverse silvery.

Champs Elysées.—Japanese; red, centre crimson, petals tipped dark yellow.

Cheveux d'Or.—Long fine petals, golden yellow.

Chrysanthémiste Delaur.—Japanese incurved; dark crimson-red, reverse old gold.

Don Binelli.—Globular flower, incurved petals rosy white, edged light violet, shaded silvery grey.

Edith Walton.—Incurving petals, clear pink.

Empress of Russia.—Incurved, snowy white.

Enfants des Gaules.—Incurved petals, golden-yellow tinted light chestnut.

Etoile des Baux.—Long petals, snowy white.

Faveur Rose.—Long fine petals, amaranth-rose, centre yellow.

Fil d'Araignée.—Fine petals, lemon yellow.

Fil d'Or.—Long fine petals, ochre-yellow.

Fils de Provence.—Golden yellow, striped purple.

Fillette Provençale.—Pearl white, centre cream, passing to light carmine.

Fleur ensoleillée.—Japanese; light violet-rose, tipped silvery white.

Fleur Lyonnaise.—Purple-red, reverse bronze.

Fusel Aublet.—Incurved petals, white striped carmine-amaranth, reverse golden bronze, passing to silvery white.

Garten Inspector Umlauf.—Long incurved petals, citron-yellow.

Golden Ostrich Plume.—Bright golden yellow.

Grand-père André Sautel.—Light violet, reverse silvery.

Jeanne d'Arc.—Globular form, big incurved petals, milk-white.

King of Ostrich Plumes.—Chrome-yellow, shaded buff and orange.

L'Abbé Aubert.—Globular flower, purple-carmine-rose, reverse silvery.

Le Troubadour.—Light lilac-rose, marbled white, greenish centre.

Mme. F. Bertin.—Broad incurved petals, cream.

Mme. Ferdinand Cayeux.—Japanese, seedling from Louis Boehmer, ruby-red, tipped gold, greenish centre.

Mme. J. Maureau.—Globular flower, incurved petals light carmine amaranth, reverse silver.

Mme. la Vicomtesse de Gardanne.—Greenish canary yellow, reverse striped carmine.

Mlle. Marie A. Sautel.—Long petals, creamy white.

Mlle. Poupée.—Fine petals, carmine-rose, darker centre.

Maman Suzanne.—Milky white.

Mignonne Fleur.—Fine petals, salmon flesh colour, edged amaranth-rose.

Mireille.—Buff and light rose, shaded carmine.

Monarch of Ostrich Plumes.—Japanese incurved; chrome-yellow, shaded buff and amber.

M. Fernand Bertin.—Light red, marbled with white, reverse slightly silvery.

M. Henri Jacotot.—Globular form, incurved petals, salmon-white, striped violet-carmine, reverse silvery.

M. Hovyn de Trauchère.—Big globular flower, incurved petals, rosy lilac, reverse silvery grey.

Mgr. Gouthe-Soulard.—Dull white, striped velvety carmine, reverse ashy white.

Mgr. de Cabrière.—Incurved petals, carmine-violet.

M. R. Leadbetter.—Japanese incurved; bright golden yellow.

Mrs. Dr. Ward.—Long broad petals, bronze-yellow, shaded red at tips.

Mrs. Wm. Trelease (syn., Miss Baldwin).—Long broad petals, deep rose.

Nacre.—Broad incurved petals, delicate pink.

Oriental Beauty.—Pearl white, shaded pink.

Pacific.—Incurved; white, shaded silvery pink.

Queen of the Hirsutes.—Ruby-crimson.

Reine des Gaules.—Globular form, incurved petals, light lemon-yellow, passing to white.

Sapho.—Same colour as Louis Boehmer, but petals tubulated.

Sautel.—Bright velvety carmine-red, reverse golden bronze, shaded silver.

Séduisante.—Carmine-magenta-rose, edges lighter.

Souvenir de Brienne.—Velvety dark purple, reverse straw-yellow.

Souvenir de l'ami L. Coxe.—Salmon-white, passing to pure white towards the centre, outer petals bright carmine.

Soyeux.—Long fine petals, pure white.

Vaucanson.—Japanese; dark violet-amaranth with lilac reverse.

Vierge de Provence.—Long petals, milky white.

Virginia.—Bright purple, globular flower,

Ville de Nîmes.—Carmine-lilac-rose, tipped salmon, passing to silvery white.

Zambesi.—Yellow.

C. HARMAN PAYNE.

NOTES CONCERNING HORTICULTURAL SOCIETIES.

THE season is now coming round once more when the various societies, both large and small, will be holding their exhibitions. Possibly a few practical hints may not be out of place to amend what are weak spots in the management in some instances, whilst in others support needs to be given to the executive in their praiseworthy efforts to make their respective shows a success. Suggestions concerning the compilation of the schedules come now too late, I am fully aware. It suffices, however, to say that no schedule is a complete one that does not contain classes for cottagers, a community that deserves all the support that can be accorded them. True, they can presumably exhibit in what are termed the amateur classes in local shows, but they rarely do this. To encourage the cottager, he should be admitted as a subscriber upon the payment of a minimum amount. Half-a-crown to a cottager is infinitely more, comparatively speaking, than half-a-guinea to the average run of subscribers. An omission that is made frequently by the executive committee is that of delaying to appoint judges in good time. These appointments should be made at least three months in advance, so that the gentlemen invited have time to make their arrangements. Short notices, although they may possibly be accepted, at the same time may cause inconvenience to the parties themselves. Concerning the judging itself, an all-important fact must be borne in mind. It is that of commencing the work punctually to time. Some schedules specify 11 o'clock, but this hour is more honoured in the breach than the observance. It would be far better to say 10.30 and let the judges commence at 11 o'clock punctually. It matters not what time the judging is begun, it is expected to be finished at a certain hour when the subscribers and others (with the exhibitors also) are admitted. This is altogether at variance with what it should be, for if the work of the judges is to be done in a proper manner, with all possible care, it cannot be hurried through. Exhibitors who are late in staging thus cause the judges an inconvenience which they should ponder over with profit to themselves. It is rarely done, but, nevertheless, it is a good plan to ring a bell as a warning of the time, at the second peal a general clearance being made.

Exhibitors do at times, as it were, hinder the progress of preparation—in an unconscious manner no doubt—by staying to examine and decide upon the respective merits of their exhibits, thus doing ex-officially what the judges are appointed to do. Hindrances, on the other hand, are caused by want of proper management in the disposition of the exhibits. This subject should engage the serious attention of the officials in charge of the work, for nothing is more trying to exhibitors than having to wait or to have to re-arrange their productions the second or the third time. To summarise these shortcomings, both the executive and the exhibitors should bear in mind that one hour before 6 a.m. is worth two after 9 o'clock. One other note should be taken by the committee—it is what has often struck me as requiring a radical remedy, viz., the unsightliness of empty boxes, pots, hand-barrows, &c., all of which should be for the time put out of sight. There should be nothing left either in the show room or marquee, or outside of either, that would contrast unfavourably with the productions shown. In some instances, through want of management, the exhibitor leaves too much to be done at the exhibition that might have been accomplished at home previously. Dirty flower-pots are an abomination, and ought not to be tolerated. Improvised boxes of nondescript forms, in which to arrange cut flowers, should not be admitted at all. Another point the exhibitors should pay closer attention to is that of

sending in all entries in good time, before the day fixed by the rules being far better than after it, for it is utterly impossible to make proper arrangements within the time without the entries to hand. As far as practicable, plants should be admitted over-night; the staging is thereby greatly facilitated in the morning.

The executive committee should comprise amongst its members at least a few practical gardeners or nurserymen, men who are in a measure conversant with the probable exhibits. A few such helpers will be a great boon on the morning of the show day in arranging the staging. Where there are two, three, or more marquees one should if possible be cleared before the rest; this will permit of the judges commencing in good time. I have seen this carried out, and can strongly recommend its extended adoption. Too much work should not be expected from the judges; in this respect I have noted a decided contrast between one show and another. Supposing three are engaged to work together, it would be a deal better to engage the fourth and let them work in pairs. The expense in doing this may be looked at, but it should be borne in mind that unless the adjudications be done in a proper manner, the show itself

Apricots claiming almost our first attention. With a change before long there is every prospect of a remarkably productive year, and the spring of 1893 will be a time to remember and on a par with the summer of 1887. The very heavy rainfall throughout February was a splendid preparation for the weather experienced since, and the fine weather has given an equally splendid chance for cleaning off weeds in the garden. The old folk are saying that the "Apple blossom wants christening," and probably they are right. Everyone would welcome a genial rain, which, however, at this moment seems as far off as ever.—J. C. TALLACK.

ROSE GARDEN.

THE AUSTRIAN BRIERS.

(ROSA LUTEA.)

AMONG all early Roses the Austrian and Persian Briers are some of the most showy. Their deep golden yellow tints are so different from all else in the garden at the same time of year

best pale yellow variety. Persian Yellow is much more double, larger and fuller, while the colour is several degrees deeper, and approaching to golden yellow. Grown as standards upon tall Briers is by far the most effectual method of cultivating this charming section of Roses. They make long and slender growth, which droops with the weight of blooms produced upon such wood during the early part of June. For some years one of the most pleasing features upon a lawn I am acquainted with has been a few good standard specimens of the Austrian Copper and Harrisoni Briers. Pruning is best carried out during the summer months, removing the wood as it has flowered, and so securing longer and better matured shoots for next year. The growths should be well thinned, as a few really strong shoots are much more valuable than a mass of weak ones. I have frequently seen growths of 5 feet to 8 feet, which have been completely covered with blossoms, in trusses of from three to seven flowers, these extending the whole length of the shoot and causing it to droop in the most graceful manner imaginable. As dwarfs they are too slight, and do not stand up with sufficient boldness to show off to advantage.

RIDGEWOOD.

ROSES ON WALLS.

THERE seems a fair prospect of a good crop from plants upon sheltered walls and fences, the last few warm days having helped them and brought them on apace. It is remarkable how much difference there is among Roses grown on a wall and the same varieties in the open border. Bouquet d'Or, Sunset, l'Idéal, Gloire de Dijon, &c., are in bloom in some places; while the same varieties away from the wall have only made growths of 4 inches or so, and are not showing their buds yet. On a house in my neighbourhood a grand plant of Sir Joseph Paxton has existed for over twenty years, invariably producing a good crop of blooms. It is an early variety and is generally the first out. This season, however, it seems fully three weeks behind my plants of Mme. Falcot, Sunset and l'Idéal.

When we note what a wonderful effect the slight shelter of a wall or fence has upon Roses, one may well wonder at their being so little cultivated in cool or unheated houses. It is only the cold, changeable and unkind weather that needs keeping from Roses under glass, and with the slight protection generally afforded Peaches and Nectarines in the way of copings, &c., Roses may be had fully three weeks to a month earlier than usual, and with much better colour and substance than are usually obtained under greenhouse culture. Not only do we get our earliest outdoor Roses upon sheltered walls, but we also secure the very latest from the same plants. The Tea-scented and Noisette sections furnish our best wall Roses, and these invariably make a lot of wood late in the autumn, oftentimes only to be cut down by early frosts when grown in the open. On a wall, however, they receive the same invaluable protection as in the spring, and consequently this late growth matures into some very acceptable blooms.

As a rule, also, the wood of such plants gets much better ripened, and is able to withstand winters which often cut back a great deal of the growth upon Roses in the open border. More than once I have gathered a full crop of Caroline Kuster, Mme. Falcot, Mme. des Tartas, Safrano, &c., during "chill December" from a favourably situated wall, the same plants having produced early blossoms as well. It is no more harm or greater strain upon the plants to mature their late growth into blossoms than to have it crippled and rendered useless by frost; of the two I think it is less, the frost being such an unnatural and injurious check. However high and good a wall may be, I would not advise all climbing varieties being used. Nothing can be prettier or more profitable than a few of the shorter growing Roses



Flowers of the Austrian Copper Brier.

will eventually suffer through the abstention of exhibitors. Finally, it must be duly considered that the work of the executive committee is a labour of love and not one of remuneration, save in the case of the secretary. Every allowance must, therefore, be made where errors occur which do not seriously embarrass the exhibitor or run contrary to the rules and regulations.

F. R. H. S.

The weather.—For eight weeks, or since February 27, we have been practically without rain. On March 16 we had two fairly heavy showers, each of which lasted only a few minutes. On April 13 we had a shower lasting about five minutes, and again on the 17th some very light rain fell. These are the only occasions on which any rain has fallen since the date given above, and now, April 24, there is not the least appearance of a change; the sky is bright and the barometer high and steady. Last week, even when distant thunder was heard and thunder-clouds seen, the barometer never wavered, and this has been its condition for weeks. In spite of this phenomenal weather, the like of which no one remembers, all kinds of crops have been looking remarkably well, and yesterday, for the first time, some things showed signs of suffering, so that watering has to be fairly taken in hand,

that few can help admiring them, even if these miniature and semi-double Roses should not be their prime favourites. The variety represented in the accompanying cut is one of the finest in this section. A good and vigorous grower, flowering very freely upon ripened wood, the Austrian Copper Brier is one of the most unique Roses we possess. This variety is single, and has a very pleasing tint of reddish and well-burnished copper throughout its petals; the stamens are very prominent and increase its beauty. This Rose cannot fail to please all who have the true type, but, unfortunately, a good many of the Austrian Yellow have been distributed under the name of Austrian Copper. Both are single or semi-double only, varying somewhat in this respect, and possess the same habit of growth, but the former is a pure yellow only, and by no means so unique and pleasing as the latter. We have no record of the date Austrian Copper was sent out; it is probably a sport from the Austrian Yellow, introduced by Willock in 1833 or 1838; authorities differ respecting the date. Harrisoni was introduced from America in 1830. This also is semi-double, but it is the

among the more rampant climbers. Anna Ollivier, Marie van Houtte, Sunset, Elith Gifford, Luciole, Mme. Hoste, Perle des Jardins, &c., planted alternately with strong climbers will be sure to give satisfaction. This method of planting will clothe the wall quicker and avoid the unfurnished bottoms often found where strong growers only are used. Besides this, there is another great advantage derived from this system. The extra vigorous growers only produce one good crop a season, and are almost minus any flowers during the summer and autumn, and while they are developing growth for next season's bloom. On the other hand, the varieties named above produce a succession of flowers during five or six months. Even while one crop is being realised, young growths are pushing out for a successional show of bloom. P.

CLIMBING ROSES UNDER GLASS.

THE present is a most important time among these both among established plants and also where new plantations are contemplated. It is well known that climbing Roses must possess good wood and be well established if a pleasing and satisfactory crop is to be realised. Plants that are well established will already have finished flowering for this season. Last year's wood should be cut out, and all the energy of the plants thrown into the vigorous growths which promise to develop into long rods during the present spring and summer. No other wood is of much service among the strong climbers, and every encouragement should be afforded it. In the production of bloom and growth the roots have got into full working order, and it would not be wise to remove too much of the wood at one time. In a previous note I mentioned as the result of observations that canker frequently attacked many strong Roses like *Maréchal Niel*, &c., from a too sudden and complete check of the sap rapidly being formed by the roots, which are naturally at high pressure at present. To further confirm this, let some reader take the trouble to lift a portion of the roots from a plant so treated, say about a fortnight after all of the wood has been cut hard back. He will almost invariably find the points of the growing roots either dead or semi-ripened. This shows conclusively how severe a check they received. If the wood from a strong plant is removed in two operations, this evil is avoided.

When the young growths are well at work again, apply plenty of weak liquid manure. At this stage Roses require a lot of water, and if this be slightly charged with stimulants, it is far more beneficial than the same amount of manure applied at stated intervals. Do not try to secure many of these long rods; two or three good ones to a plant will give much more satisfactory results both as regards quantity and quality of blooms. Following out this same idea of established plants and well-matured wood, it must be evident that it is much better to turn out a young plant now and secure its establishment in the border for next season's use. Plants that were scarcely strong enough to flower well this season will make the best for planting out now. In any case let the border be well prepared, being deeply moved and liberally manured. A mixture of manure and soil is preferable. You then afford the Rose a choice, and the plants invariably do better under such conditions. Take care to incorporate a fair amount of manure deep down in the soil. When the Rose roots arrive there they will need more nourishment than generally exists in a sub-soil, however good it may be; while the surface roots may be fed annually, it is impossible to get at the lower ones unless provided for at the time of planting. These newly-planted Roses may be cut back hard at the time of turning them out, as their roots will be some weeks before they take to the fresh soil. Climbing *Perle des Jardins* is a grand Rose that should not be omitted where one contemplates turning out fresh plants; nor should W. A. Richardson, *l'Idéal*, and *Reine Marie Henriette*. The last is by far the most profitable red Rose to grow under glass. The colour is much

more vivid under glass than out of doors; it is an excellent grower, equally free blooming with *Maréchal Niel*, and more reliable. The flowers last a long time, and do not put on that dull appearance so soon seen when this variety is cultivated in the open air. Climbing *Niphetos* is another comparatively new variety that deserves recommendation to intending planters; nor should Mme. Berard be omitted where room can be afforded. I would place these varieties in the following order: *Maréchal Niel*, W. Allen Richardson, *Reine Marie Henriette*, *l'Idéal*, Climbing *Perle des Jardins*, Climbing *Niphetos*, and Mme. Berard.

RIDGEWOOD.

Rose Caroline Testout, sent out by MM. Perret and Ducher, is one of the very best of the La France type. It is more highly coloured than La France and does not reflex its petals quite so much. As a pot plant it has been superb with me this spring, and was also one of the best light Roses in the open last summer. Its habit of growth, freedom of flowering and size leave nothing to be desired, and when known it will be one of the most popular Roses we have.—R.

Among the Roses.—On the whole, Roses move more by the calendar than fruit trees and other flowering shrubs and bushes; hence, while not a few fruit trees and such as the May or white Thorn are fully a month ahead of normal time on this 25th of April, the Roses have moved by the calendar rather than the forcing, and to such good purpose, that many of them are but little forwarder than usual. Of course, *Maréchal Niel* and other Roses on hot walls and in hot borders may be seen in an unseasonably early state; but, nevertheless, they have not leaped forward with such rushes as fruit trees and bushes. Roses have not run away from time so fast and so far as fruit trees, and on the whole they are still clean and full of promise of a good Rose time just a week or ten days earlier than usual. But May may make or mar the Rose as well as the fruit harvest, and it is to be hoped that it may prove propitious. Never were April tears, or showers more missed or more desired. It may still be hoped they may come in such measure and time as to ensure a full fruit basket and save our Roses from serious risk of failure or of blooming imperfectly out of season.—D. T. F.

Roses and Clematises.—To plant Hybrid Perpetual Roses and Clematises together is not, I think, a good suggestion. To plant Clematises with the stronger growing Teas and Noisettes, or indeed any of the rambling Roses, produces much the best effect, and is, I think, the better way to utilise them. One of the most pleasing floral pictures we have in the pleasure grounds here is that produced by Rose *Gloire de Dijon* and Clematis *devoniensis*, one of the patens section. Both ramble together over some old tree stumps.—A. YOUNG, *Abberley Hall*.

Rose foliage.—The beauties of Rose foliage, especially in a young state, are so great, that I propose naming a few of the handsomest and most pleasing varieties. With the exception of Captain Christy, Duke of Connaught, and a few more, most of the fine-foliaged varieties belong to the Teas and Noisettes. First among these must come *Perle de Lyon*, introduced by Ducher in 1872. The bloom of this Rose is not good except in a very dry season, but the foliage is so exquisitely handsome, having a dark crimson and metallic shade with a beautiful gloss over all, that it is well worth cultivation for this feature alone. Sunset is another grand foliaged variety, and also one of our most reliable Roses for autumn flowering. Duke of Connaught, Earl of Dufferin, Fisher Holmes, and Comtesse d'Oxford are all grand both for foliage and bloom. I have several old and strong-growing plants of Mme. Dennis and Marie Opoix that seldom produce blooms of any merit, but they are well worth the ground they occupy simply to provide cut foliage to go with other Roses which cannot cut so freely without the loss of many valu-

able blooms. For example, there is nothing more in keeping with a choice little bud of Mme. Falcot, *l'Idéal*, Isabella Sprunt, or W. Allen Richardson when used as a coat flower than a little young and highly coloured foliage. It is far beyond Fern or any other material for backing a button-hole of Roses, and when frequently cut as new growth forms, strong growers like Mme. Dennis produce a large quantity of suitable growths, which stand remarkably well. *Souvenir d'Elise Vardon*, Edith Gifford, pegged-down plants of Mme. Berard, and in fact almost all of the Tea-scented section form quite a showy feature independent of their blooms. Grown healthily and kept clean, I do not know of a more pleasing sight to the rosarian than these and similar varieties. Then there are the deep and cool greens of the rugosa section. These are so free from diseases and insect pests that they are sure to be pleasing, and to my mind worthier of cultivation than many other deciduous shrubs that are much more extensively planted.—R.

NOTES ON ROSES.

SOME few weeks back I mentioned that my Roses were rather backward. In the same issue one of your correspondents gave an opinion almost opposite to mine, and since that "A. H." has remarked upon the forwardness of his plants. In my article I was speaking of my Roses generally, and I still consider them backward. But upon a warm wall I have several that are showing colour, while my neighbour actually cut a fine bunch of blooms on April 20. The plants were in the warm south-west corner of two buildings, and consisted of *Maréchal Niel*, *Gloire de Dijon*, *Rêve d'Or*, and *Reine Marie Henriette*. Recent frosts following warm days have been very trying to Roses with much young growth upon them. In such a position as east or south-east, where the sun bursts upon the growth in full power while frost is still upon it, serious crippling has already resulted. A south-west aspect, on the other hand, avoids this. The sun has also been so bright of late, that warm walls have been able to radiate sufficient heat through the night to avoid any injury from late frosts. This applies more especially to those with a south-west aspect, and which catch the sun's rays until the last, at the same time avoiding the sudden change early in the morning at sunrise. Excepting in these favourable positions, I do not think Roses are particularly forward considering the weather we have been experiencing in mid-Sussex. Newly-planted Roses are undoubtedly backward with me.

Maggots have already put in an appearance here and there, and must be warred against at once, pinching the leaves and careful hand-picking being by far the surest and most simple remedies. In sheltered places, too, the green-fly is very prevalent, and again bears out the belief that it is more troublesome during the prevalence of cold winds. By all means commence cleaning your plants as soon as the aphid or maggot appears.

Many of my readers have doubtless planted some stocks for future budding in July or August. In the case of standard Briers especially it is well to look these over frequently and cut out any eyes growing from above or below the desired height for your future plant. I would not leave more than two or three of the most likely shoots, these, properly budded, being quite sufficient. It is much easier to remove surplus shoots as they break, and you also concentrate the full strength into those to be budded later on. In the case of Roses budded last season, whether dwarfs or standards, no time should be lost in carefully securing any young growth that may be forming. Wind,

especially if accompanied with a little rain, will be apt to break out the young plants wholesale. Such aids to support are not necessary after the first or maiden season, as by then the plants have attained robustness and are thoroughly set to the stock. Dwarf stocks, if properly looked over at the time of planting, will not be throwing any suckers yet; when they do, these also must be removed immediately and in a thorough manner.

Earlier in these notes I spoke of Roses being cut back by frost. In some cases where the foliage has not been turned black the check has been sufficient to stop the growth and cause such to turn blind. I would recommend that most of this growth be cut away at once, or at any rate well shortened back. This will induce other dormant eyes to push into growth more surely and strongly than they would otherwise do, and as we may now reasonably expect warmer and more seasonable weather, as far as nights and mornings go, such second growths ought to produce good blooms fairly early.

P. S.

SHORT NOTES.—ROSES.

Rose Ma Capucine (Levet, 1871) is an indifferent grower. It is almost single, but in the bud state it is one of the prettiest copper-coloured Roses we have.

Rose Dulce Bella (Bennett, 1889) is very sweet-scented and a grand button-hole Rose. It is not particularly strong in growth, but very free-flowering and of a most exquisite coppery peach, and flesh colour.

Rose Colonel Felix Breton is a grand dark Rose of the Abel Carrière type. It does not burn in the sun to the same extent as A. Carrière and Pierre Notting, and although not quite so strong a grower as these, with me it is a more useful Rose than either.—N.

Rose Elie Morel (Liabaud, 1867) has been passed by such grand varieties as Mme. Gabriel Luizet, Mrs. John Laing, &c., but it is still a great favourite with me. It is one of the very earliest to flower, and seen early in the morning, has a most exquisite soft silvery colour entirely its own.—R.

Rose Duchess of Bedford (Postans, 1879).—Although a very poor grower, this Rose produces some extra grand blooms. No other Rose possesses the same bright and glowing scarlet-crimson shade, which is often peculiarly mottled and striped with a lighter shade. It is undoubtedly a delicate Rose and requires a warm position.

Rose Duke of Connaught (Paul and Son, 1876) is one of the prettiest foliaged Roses among the true Hybrid Perpetuals. It is not so large as some, but every bloom is perfect, and as the flowers are produced more freely in the autumn—a time when pink Roses predominate—the bright velvety crimson colour is most acceptable.

Rose Captain Christy (Lacharme, 1873), now classed as a Hybrid Tea, and one of the most satisfactory Roses for a town garden, is worth cultivating for the beauty of its foliage alone. It requires the seedling or cutting Brier stock, rather hard pruning and generous treatment. It is quite distinct from other Roses and possesses a peculiar and pleasing shade of flesh colour.

Rose Docteur Andry (E. Verdier, 1864), described in the National Rose Society's list as most reliable, is another of the uncertain Roses with me. Like Comtesse d'Oxford, it is quite a different Rose on one quarter of my ground. Both of these are really grand Roses and quite distinct, and in the majority of cases may be depended upon to produce quantities of good blooms.—R.

Rose Comtesse d'Oxford (Guillot père, 1869) is another Rose that seems to have almost equal claims to the Hybrid Tea section with Captain Christy. Its foliage shows a great deal of the Tea and China blood. This Rose is described as most reliable, but I find it peculiar upon some soils. In one portion of my ground it is far from a good Rose, while in another it is all that can be desired. A magnificently shaped flower, colour shaded carmine, with a tinge of violet.—P.

TREES AND SHRUBS.

AZALEA MOLLIS.

THIS Japanese Azalea and its beautiful varieties and hybrids are rapidly getting well known, and it is only until quite recently, so to speak, that this charming class of hardy early-flowering shrubs has been seen to any extent in English gardens. There is a wealth of beauty and character in the race of A. mollis, and the idea that they are in any way tender is being gradually exploded. Shrubs that in even moderately exposed positions will live through such peculiarly trying winters as those of recent years cannot be tender in the least, faring better than many things that are considered more hardy. A group in the foreground of dark-leaved shrubs makes a splendid picture of various colours, and a good selection of the varieties of A. mollis comprises a great range of shades, from straw colour to intense scarlet, peculiarly brilliant when lit up by the sunshine of a spring day. In planting bold groups in the garden the chief thing is to give them shelter from early frosts, which are apt to injure the buds and expanded flowers, but except for this precaution little need be said concerning their treatment. Many spots abound in all good gardens where the hardy Azaleas (A. mollis in particular) may be placed—shady quiet corners, away from winds and the influence of early frosts, just the positions that agree with this delightful class of early spring-flowering shrubs. The soil that suits them best is peat, but fibry loam will produce good plants. In such gardens as Dropmore, where the Rhododendrons attain great luxuriance, the varieties of A. mollis are quite at home, and in the best tree nurseries they now make a brilliant mass of colour, a welcome sight when there is an abundance of dark-leaved shrubs for contrast. Hybrids have been obtained by crossing A. mollis with A. pontica and the Ghent varieties, and many beautiful things have resulted, raised often and seen in high perfection in Continental gardens. This year A. mollis is flowering remarkably well, due to the sunny weather, and a large group in full bloom is almost dazzling to look at through the rich variety of brilliant colours displayed in a good selection. The race is gradually improving. The flowers are not only very charming for their extensive variety in colouring, but individually they are of large size, full rounded form, each segment broad, robust, and firm.

One great use, however, of the plants of the A. mollis type is their value for flowering in pots under glass, and at the exhibitions both in England and abroad they make a conspicuous feature. A variety named Anthony Koster, after the great Dutch grower and raiser, was shown by Messrs. Lane and Son, Berkhamsted, at the meeting of the Royal Horticultural Society on April 11 last. This was of the A. mollis type, and represented a very fine variety, the flowers fully 2 inches across, well shaped, and brilliantly coloured, deep orange-yellow, in which one could detect a suspicion of rose. Every twig was smothered with bloom, and in regard to the hardy Azaleas a great feature of the shrubs is their freedom in flowering, bold clusters of flowers unrelieved by leafage. There are few, if any, shrubs of greater value for early blooming under glass than A. mollis, and either small or older specimens are a mass of flowers. When under glass all risk of injury from late frosts is removed, and the finest groups may be formed in the greenhouse or

conservatory with them, mixed with a judicious selection of other subjects. Hard forcing is injurious. The plants require to be brought on gently in heat, and then the flowers last a considerable time in beauty both on the plants and when cut for vases. A few sprigs of the quieter coloured flowers mixed with Ferns or other suitable foliage are very charming. In many gardens much waste occurs through the Azaleas, after they have been forced, being indifferently treated afterwards; but if they are required again for the same object, they should be well attended to. After blooming in a warm house, it is not policy to remove them at once to the open, where they are exposed to the vicissitudes of the early spring season. When the flowers are over, prune back the shoots and remove the plants to a cold frame. It is quite unnecessary to coddle them, so give as much air as possible when the weather is not too cold. When they have got hardened and frosts are over, plant them out in a well-prepared bed in a moderately shady position, the soil of a good fibry loam, or, better still, peat, and in dry weather give water. During the summer they will make moderate headway, not much, perhaps, but the year after they will be in full health and strength. Even those who have only a conservatory or greenhouse may grow A. mollis to perfection if the plants are potted some time in the autumn, and the many varieties can be strongly recommended for this purpose.

Although there are many named kinds distinguished by their well-shaped flowers, a good selection of unnamed seedlings will give a great variety of the most refined and showy colours. F. G.

Vitis heterophylla humulifolia.—J. Otto writes me saying he has received some plants of the Hop-leaved Vine from Japan. Do I know anything of it? I believe the plant to be the variety named above; at least this is the only Vine I know which is called the Hop-leaved Vine, and this plant is a native of Japan and China. The plant is not new, having been in cultivation some years, but is not much distributed in this country. It is a slender climbing plant, growing some 6 feet in height, clothed with good-sized leaves, which are usually three-lobed, with serrated edges; but in some instances five lobes are developed, and it bears freely bunches of soft blue globular berries, which from their colour are very ornamental. It will grow in the open air and does best on a south wall.—W.

Magnolia Soulangeana was in splendid bloom a few days ago at Syon House, where, perhaps, is the finest specimen of this in the country. The snow-white Magnolia conspicua had also been very fine. M. Soulangeana has white flowers, flushed with purple, and they appear later than those of the type. It is usually regarded as a hybrid between M. conspicua and M. obovata, and the many points of similarity in the hybrid to its supposed parents favour this theory. A large tree of it is very beautiful, the flowers bold and diffusing a sweet strong fragrance. The Syon House tree has attained considerable dimensions. It is planted not far from M. conspicua, and provides a succession of the cup-shaped fragrant flowers.

The Japanese Maples.—We have noticed lately the beauty of the Japanese Maples in gardens, and they seem to be finer this year than usual, doubtless owing to the sunny character of the present spring. The species, *Acer palmatum*, is a feature at Syon House, and it does not require many plants to make a brave show of intense crimson colour. But although this type, also known as A. polymorphum, is the best known, there are many charming varieties displaying delightful shades of colour, and the leaves are delicately cut, as, for instance, in such a variety as dissectum

Septemlobum, *elegans*, *linearifolium*, and its deep crimson-leaved kind named *atro-purpureum* are also good forms. But if only one kind is required to form a bold group, the type (*A. palmatum*) is as good as any, and the leaves as they get older deepen in colour. The Japanese Maples make slow growth, but they spread out into dense heads and have a fine appearance when grouped together on the outskirts of the lawn. They may be recommended especially for small gardens, as the several kinds occupy little space and contribute a rich variety of colours from deep crimson to light green. Even a single specimen of such a kind as the type looks well, the young leaves being remarkably bright, but they deepen in shade towards the summer. Little comparatively is seen of the finer kinds of Japanese Maples in gardens, but the reason is that they are usually thought tender. This is happily not the case, verified well by their behaviour during the past trying winter, when things usually considered quite hardy were killed.

The Judas Tree (*Cercis siliquastrum*) was bursting into bloom a few days ago in the gardens at Syon House, Brentford, where there are several fine trees, which, when in full bloom, are a sheet of purplish colour. The *Cercis* is a picturesque tree, not tall, but spreading out into a head of quaint aspect, and the flowers are produced profusely on the old wood. One specimen stands out singly, and makes an interesting picture. It is under these conditions that the full character of the tree is revealed, not when crowded up amongst a host of other things, deprived of light, air, and space to make proper growth. For several hundreds of years the *Cercis* has beautified English gardens, as it was introduced from Southern Europe in 1596, and to get the tree in full character, it must be left to grow to old age, as then it assumes its picturesque character. Unfortunately, growth is not very rapid, but flowers are plentifully produced on young specimens. The *Cercis* grows readily on all ordinary soils. *C. canadensis* is the American Judas Tree. It has an irregular rounded head and cordate leaves of a fine green colour, whilst the flowers are pink, borne profusely, and appear before the leafage. A popular name for it, besides American Judas Tree, is Red Bud, in allusion to its flowers. This species is not common in English gardens, but it makes an attractive feature, especially when planted singly, to show off its characteristic features. The Japan Judas Tree (*C. japonica*), which is synonymous with *C. chinensis*, is a useful, small tree, the head rounded, and the cordate leaves of deep green colour. The flowers are deep rose and larger than those of the other kinds. *C. siliquastrum* is the best known, and many fine specimens occur in the older gardens. A coloured plate of the Judas Tree was given in THE GARDEN, October 15, 1892.

Rhododendron arboreum, we noticed, was very beautiful recently both at Dropmore and Syon House. It is a splendid species for imparting rich colour to the garden, the deep crimson flower-heads in fine contrast to the abundant dark green leafage. The finest effect is gained when a shrub in full bloom is planted with a background of trees, and at a point where its mass of brilliant flowers comes clearly into view. This species is also a noble subject for the winter garden, and is always worth seeing in the spring in the temperate house at Kew. It varies in colour, but the type is the richest, the flowers intense crimson—a brilliant set-off to the abundant leafage. Roseum has rose-coloured flowers, and there are other interesting colours.

A beautiful bed at Kew in the open near the greenhouse is well worthy of note. A few things of much beauty are the free-flowering *Pyrus floribunda*, which is covered with bloom, the brightly coloured leafage of *Cornus Spathi* adding to the attractions of the bed; also a variety of *Spiræas* in bloom, and the beautiful Japanese Maples, the foliage of which is now of a fine crimson, peculiarly bright when the sun shines full upon it. This reminds us that a plant of *Acer polymorphum atro-purpureum* is very beautiful in a conspicuous position, backed with dark green-

leaved shrubs at Syon House. The plants make little growth, but are perfectly hardy, and light up the scenery with their showy leafage. We remember that in the exposed garden at The Denbies, Dorking, they succeed well. In such a bed as that at Kew their crimson foliage is a great gain.

The Lilacs at Syon House, Brentford, are in full beauty, and they are interesting as a good collection is grown. We noticed that the Lilacs of good colour only are used, and considerable variety in shade may be got, varying from white to the deepest purplish tone, one, which seems to be *Souvenir de L. Spath*, being of rich colour. A large spreading mass of *Syringa Josikæa* (the Hungarian Lilac) is pretty. It is a distinct shrub, not finer certainly than our common Lilac, but worth planting for its distinctive character. It grows over 6 feet in height, and bears a profusion of delicate lilac flowers in rather stiff spikes, thus not presenting the same graceful aspect as the common *S. vulgaris*. Notwithstanding the many new Lilacs introduced of recent years, the ordinary kind is difficult to beat. The soft colour of the heavy clusters of flowers and the graceful aspect of the bush are in their way quite unique. It is rather the fashion to praise flowers in which magenta tones prevail, but these are poor things in the garden.

Arbutus Andrachne is a well-known tree, but it is not often near London that one can see a finer specimen than at Syon House, and it is now in full flower. When in bloom this tree, about 14 feet or more in height, has a fine appearance, the profusion of flowers making a brave show of creamy white colour. They are produced thickly in racemes, and individually are like little bells, in contrast to the deep green leaves. Even when not in bloom the tree is interesting, the handsome foliage and smooth silvery bark adding to the attractiveness of the garden.

An interesting corner at Kew just now is where the *Ledums*, *Vacciniums*, and allied plants are in bloom. They will be found near the arboretum, and not far from the temperate house. *Ledum latifolium* is a mass of bloom, the white flower-heads covering the dwarf shoots, and in rich contrast to the dark leafage. A form named *nanum* is conspicuous for its much dwarfer habit. *Kalmia glauca* is also in bloom, but the finest effect got from this plant is near the greenhouse, where two large masses are in full bloom, the plants covered with the bright crimson flowers. *Vacciniums* are flowering freely, *V. corymbosum* and its many varieties, so that this sunny corner possesses much interest for those who care for these plants.

The Snowdrop Tree (*Halesia tetraptera*) is blooming very early this year, as in the case of the majority of things, and at Syon House is now in its best dress. There are several examples of this pretty tree here and well placed to show off to the best advantage the distinct Snowdrop-like flowers; hence the popular name. They are usually borne in threes, and at first are quite green in colour, but this changes with age to white, whilst the curiously winged seed-vessels give a tinge of brown. *H. tetraptera* is the most popular of the genus, but it is not seen so often as it should be in English gardens. But it is possible that with the increasing regard paid to early-flowering trees and shrubs, it will be more freely planted. The specimens at Syon have attained considerable dimensions, and this tree is not particular as to soil, but prefers rather a moist position than otherwise. A very appropriate English name also for it is Silver Bell, suggesting the silvery colour and campanulate form of the flowers, but Snowdrop Tree is better. One good common name is sufficient, and it is wiser to adhere to the name by which it is more widely recognised. *H. tetraptera* was introduced from South Carolina as far back as 1756.

Cytisus biflorus.—Leguminous plants with yellow blossoms are very plentiful during the spring months, and among the best of them this *Cytisus* (referred to on p. 340) must have a place, for it is of a neat pleasing habit of growth and very free-flowering. It is seldom much more than

a yard high, and the long slender shoots are studded with golden blossoms for some considerable distance. The flowers are by no means invariably in pairs, so that the name of *biflorus* appears to be somewhat of a misnomer. This *Cytisus* is a native of the eastern portion of Europe, and is known in our gardens by several names. Like many other of the smaller shrubby Leguminosæ, it becomes exhausted after a few years, so that the best results are attained by an occasional renewal. As most of this class produce seeds freely, a stock for replacing exhausted specimens is easily kept up.—T.

Ceanothus rigidus.—The number of outdoor shrubs with blue flowers is very limited, being principally confined to the different kinds of *Ceanothus*, and as this is the first of the genus to unfold its blossoms, it is for this reason especially noticeable. This *Ceanothus* is not so hardy as some of the others, but is well worth the protection of a wall, where, favourably situated, it will often flower before April is past. It forms a neat, freely-branched bush, thickly clothed with small deep green leaves, while the flowers are of a deep purple-blue. This *Ceanothus* is a native of California, from whence it was introduced in 1848. I have seen it employed for flowering under glass in the shape of neat bushes profusely bloomed, and in this way it was widely removed in general appearance from the whole of its associates. All the different species of *Ceanothus* are very pretty shrubs, while the numerous garden varieties claiming parentage from *C. azureus* and *C. americanus* yield several distinct shades of colour.—H. P.

Caragana arborescens.—Where the soil is dry and gravelly, this (the Siberian Pea Tree) is seen during the present season under especially favourable circumstances, that is, by contrast with most of its associates, for where the conditions are as above indicated, the present hot and dry weather with sharp frosty nights has affected many of our hardy shrubs, which is shown by the poor cramped foliage and limited display of flowers, that quickly drop. It seems, however, to have little or no effect on this *Caragana*, whose pretty pinnate leaves are of a very bright shade of light green, while the yellow flowers, which nestle among the leaves, are borne in great profusion. This *Caragana* in its ordinary form assumes the character of a large shrub or small tree, but it will flower with great freedom while small. While this may be regarded as the type, there are many varieties, one of which (*nana*) is a smaller compact-growing form, while *pendula*, if grafted standard high, is one of the prettiest of this class of weeping shrubs, and on its own roots it forms a procumbent specimen that as a rockwork shrub has much to commend it. That these *Caraganas* will thrive in dry, gravelly, or sandy soils is at once apparent when it is borne in mind that they are natives of the arid plains of Siberia, from whence the typical kind was introduced in 1752. It will also succeed better than most shrubs in smoky districts. *Halimodendron argenteum* (the Siberian Salt Tree) is another shrub from the same region that will thrive under similar conditions to the *Caragana*. The usual habit of the *Halimodendron* is to form a much-branched bush, whose slender shoots are clothed with small pinnate leaves, which are covered with silky hairs, and thus present quite a silvery appearance, which is more pronounced as the leaves mature than it is at the present time. From the character of the regions they inhabit, it will be at once understood that all of the above are thoroughly hardy in this country.—H. P.

Laurels in flower.—The different Laurels are usually cultivated for the sake of their foliage alone, but when in full flower they are certainly very ornamental. The Colchic Laurel is by far the most free-flowering of the several forms, and from its style of growth the spikes of blossoms are more prominent than in any of the others. This variety differs from the common Laurel in the leaves being larger, thinner in texture, and of a lighter green, as well as by the more horizontal arrangement of the branches, while it is also less liable to be injured during severe winters. When

laden with blossom, as I recently saw some examples, the Colchic Laurel is decidedly a good flowering shrub. The Portugal Laurel, too, deserves mention from a flowering point of view, and so does that distinct variety *azrica*, which is by no means common.—T.

NOTES OF THE WEEK.

Pyrus cardinalis.—Mr. Waterer sends us again his cardinal Japan Pear, which certainly is distinct and lovely in colour.

Iris Oncocyclus atropurpurea.—M. de Graaff, of Leyden, sends us a beautiful flower of this. These Irises are very beautiful and singular; the unfortunate thing is the use of the terrible term "Oncocyclus," which certainly ought to be replaced by a simple English name—if the people who write about these Irises would help us to a term. After all, it is of very little use in gardens as a term for the group, because each species must be referred to individually and by its own name.

Rose Climbing Niphetos.—The great white drooping flowers of Niphetos Rose are very beautiful even upon dwarf plants, but on the wall they look more lovely and are better seen. The climbing counterpart of this good Rose ought, therefore, to be planted by all who can give it wall space. When pruning in March I noted the fact of buds being visible upon this as well as other kinds, and during the last week in April a flower of fine size and purity of tint expanded, whilst several buds are in an advanced stage.—A. H.

Phlox amœna.—Amongst some hardy flowers sent us by Messrs. Laing, of Forest Hill, occurs this beautiful and thoroughly hardy little Phlox, which we think is, if anything, better than the mossy alpine Phlox (*P. subulata*). It is a very hardy little thing and does on borders, banks, walls, rocks, or anywhere even in poor cold soil, and bears myriads of pretty flowers in spring. They also send Phlox stellaria, which is a delicately coloured kind. But the first for general work should appeal to every rock gardener and hardy flower grower.

Notes from Liphook.—*Cratægus Oxyacantha obtusata* is now a lovely sight in the grove. Loudon calls it the French Hawthorn. It blooms much earlier than our May, and is now like a tree covered with snow. *Lonicera alpigena*, by no means often met with, is an interesting shrub now in bloom. Though not showy, its crushed strawberry-coloured blossoms attract even unobservant passers-by. *Cytisus purpureus* var. *incarnatus* is now charming on the rocks. *Abies nigra* stands out prominently among other conifers from the marked blue tinge of its new shoots.—M. A. R., Liphook.

Rose Lamarque.—It is a great pity that this Rose is not as hardy as Gloire de Dijon and others, but, nevertheless, although a lot of its wood is often killed by frost, enough generally remains to give some early blooms, whilst the later growths always throw fine trusses. This year, however, a great display is promised in May, whilst some of its lovely buds opened during the last week in April, an occurrence of itself noteworthy and contrary to all previous experience. The half-opened buds are lovely in form, the colour is very pure, and the scent delicious. Houses and arches wreathed in this lovely Rose are dreams of beauty that, unfortunately, few can realise. It would be worth trying it near the seaside in the south. It gives us all the profusion of the old cluster Roses spread over a much longer season.

Rosa acicularis.—This is almost as fine as and has so much resemblance to the Japan Rose that it might at a glance be mistaken for that kind. It is, however, quite distinct, a very fine species, and not nearly as well known as it deserves to be. The shelter and extra heat of the wall are accountable for the April blooming of many Roses that have opened this season, and

which appears to be general in the north, south, east, and west. But of this species it must be recorded that a large group was blooming freely during the last week of April, though situated quite in the open on a bank of cold, heavy, and usually wet soil. Many other species are thereabouts, but not one approaches this for earliness. It makes a bush almost as large and dense as the Japan Rose; its stout shoots are fiercely armed with closely set long straight thorns, the leafage is abundant, of a glaucous tint, and the flowers, which are borne singly one to each shoot, are of a soft, clear rosy pink colour and sweetly scented.

Pinguicula.—There are three species of the curious little Butterworts flowering now in the annexe to the Orchid houses at Kew, and so charming are they, that one wonders why it is they are so much overlooked by horticulturists. First among them both in size and showiness is *P. caudata*, which has beautiful deep carmine-purple flowers, borne on a stalk 9 inches high; the flower is more than an inch across. This species is illustrated by a coloured plate in THE GARDEN, August 22, 1881. Six years later, on February 17, 1887, the second species, *P. grandiflora*, was also figured. This is a perfect little gem, whose flowers, on scapes about 4 inches high, are like large Violets in colour and shape. The third species is *P. vulgaris*, our common British representative, which is simply, so far as general appearance goes, a smaller addition of *P. grandiflora*. *P. grandiflora* is found in the south-west of Ireland, *P. caudata* in Mexico, but it requires greenhouse treatment.—B.

Caragana frutescens.—Although not so well known in gardens, perhaps, as *Caragana arborescens*—the Siberian Pea tree—this species is equally well worth growing, more especially if the superior forms be obtained. Like most other outdoor things, it is flowering much earlier this year than usual, for whilst May is the normal month, it was in full bloom at Kew during the last two weeks of April. It is very distinct from *C. arborescens* by reason of its leaves consisting uniformly of four leaflets and in the petiole having a short spine at the apex (what is really the terminal leaflet modified); whereas in the other species the leaves are distinctly pinnate and the petioles unarmed. The flowers, produced singly from each leaf axil, are bright yellow, shaped like Pea blossoms, and are borne very freely on the long slender shoots. It makes a rounded shrub usually 3 feet to 5 feet high, but occasionally much higher. It is a native of Siberia, whence both it and *C. arborescens* were introduced in 1752. Another species of very striking appearance is *C. Redowski*, somewhat like *C. arborescens* in leaf and flower, but with remarkably long and slender snake-like branches. It is nevertheless of graceful habit, and admirably suited for planting as an isolated specimen on lawns, &c.—B.

Gardeners' Royal Benevolent Institution.

—On Friday, April 28, a meeting was held at the Redland Park Hall, Bristol, for the purpose of advocating the claims of the Gardeners' Royal Benevolent Institution. Mr. J. H. Lockley (late High Sheriff for the county) presided. It was explained that Mr. Harry J. Veitch (treasurer of the society), who had been announced to give an address, was unable to be present through pressure of business. The chairman in his opening remarks said Mr. Veitch had shown his sympathy with the society in a practical way, and they had his wishes for a very successful meeting. He pointed out the advantages offered by the society in its provisions for old age pensions. He said he admired the thrifty man who endeavoured to make provision for old age without assistance, although, of course, they knew there were many people who had not really the power to set aside sufficient to procure for them at an advanced stage of life an old age pension. The Gardeners' Institution stepped in and did a good work. The sum of £20 a year, at which old age pensions were fixed, meant 8s. a week, and the majority of societies in Bristol, some of which had been in existence for 150 years,

rarely apportioned to a man or woman who had reached the eligible age a larger amount than this. If this society could be induced to open a branch in Bristol and the neighbourhood, he felt quite sure of this, that by the gardeners themselves showing they had an interest in the institution which was established purely for themselves, there would be no lack of outside interest to help them. Mr. George J. Ingram (secretary) followed with an exhaustive address on the principles, objects, and needs of the institution, after which it was unanimously resolved to form an auxiliary for Bristol, Bath, and neighbourhood. The chairman consented to be its president, to become a life member, and to subscribe annually to its funds. During the evening several annual subscriptions were announced as well as promises to support the work.

PUBLIC GARDENS.

An open space for Birmingham.—It is stated that a sum of £4000 will be expended in laying out as a public garden and open space the churchyard of St. Paul's, Birmingham.

Opening of the Home Park.—Information has been received in Kingston that the opening of the Home Park, Hampton Court, to the public will be officially announced by the First Commissioner of Works in the course of a few days.

Park for Northampton.—By twelve votes to seven, the Town Council of Northampton have decided to acquire Abington Abbey and Park, about a mile from the town on the Kettering Road, at a total estimated cost to the ratepayers of £12,150. The abbey buildings and 20 acres of ground around them are a free gift by Lord Wantage, V.C., and, in addition, 42 acres adjoining will be purchased at £225 per acre, and the whole enclosed with unclimbable wrought iron fences. The abbey has no claim to the title, never having been a religious house, but merely a mansion containing a few Tudor fragments, but chiefly rebuilt by one Thursby, who bought the place from Shakespeare's granddaughter and last descendant, Lady Bernard, in 1669.

Open spaces.—The Parks and Open Spaces Committee reported that they had had under consideration the question of the acquisition of the pieces of garden ground in Highgate Road, and had conferred with the representatives for the district. In January, 1891, the Vestry of St. Pancras called the attention of the Council to the desirability of obtaining possession of the strips of land referred to in order that they might be retained in their present state. These Grass plots, upon which some fine trees are at present standing, are enclosed at some places by pale fencing and at others by a hedge, and are not available for use by the public. A certain portion of the ground has a market value for building, but it is a question whether any sums derived from its sale would not be more than balanced by the depreciation of the property at the immediate rear of the strips. In the Council's General Powers Act, 1892, words were specially introduced by the Parliamentary Committee to provide that the land should be "preserved as ornamental or garden ground," and not as an open space in the ordinary sense of the term. The members of the Council representing the district who joined in the conference were unanimously of opinion that the ground when acquired should be kept in its present condition, and that the public should not have access thereto. Indeed, the space was not required for the purposes of recreation, it being but a short distance from Parliament Hill, to which place an entrance from Highgate Road exists a few yards to the north of the land. As a first step towards the acquisition of the land, they had to ask the Council to determine that the ground should be kept as at present and that the public should not be admitted. This will considerably affect the terms on which the Council would be able to obtain possession of the land. They believed that if this view be adopted, at least one of the owners

would transfer free to the Council his interest in a large portion of the land provided the Vestry will maintain the road between the land and the houses adjoining, which it was understood the Vestry was quite prepared to do. The transfer of this ground at the first might incline the other owners to a similar course, or at least to ask but a nominal sum for their interests. A scheme had been put forward for the formation of a timber yard on a portion of the land, and this would involve the cutting down of the trees and the destruction of what was one of the notable features of the locality—the Grass plots alongside the high road in a district which is being rapidly built over. A letter was now read from the Vestry of St. Pancras intimating their intention to maintain the pieces of land out of their rates if the Council would acquire the land.

At the monthly meeting of the Metropolitan Public Gardens Association, 83, Lancaster Gate, W., Sir William Vincent, vice-chairman, presiding, it was reported that the Committee of the House of Commons had rejected the Paddington and Clapham Junction and the Edgware Road and Victoria Railway Bills, which proposed to tunnel under Kensington Gardens and Hyde Park respectively. Progress was reported with regard to the laying out of several recreation grounds, and it was announced that leave had now been given by their respective owners for beginning work at St. Thomas's Square, E., and Victoria Park Cemetery, E. It was agreed to grant seats for St. Bride's Churchyard, Fleet Street, E.C., and Southall Churchyard, W.; to assist the Rosherville Vestry in the planting of trees in thoroughfares; and to lay out St. Olave's Churchyard, Silver Street, E.C., and the site of Craven Pond, Clapton Road, N., provided their maintenance was duly secured. Amongst large numbers of schemes under discussion at the meeting were those in connection with the Epsom Downs, the Alexandra Palace and Estate, N., the Hilly Fields, S.E., Lincoln's Inn Fields, the Hon. Artillery Company's ground, and additional land Highbury Fields, N. A request for the addition of the name of the association to the list of the supporters of the Society for Checking Public Advertising was assented to.

The weather in West Herts.—The principal points in which the weather of the last two months has been most exceptional have been the high. Dry temperatures, the unusual depth, considering the time of year, to which the heat of the sun has penetrated the ground, the extremely small rainfall, the great dryness of the air, the remarkable duration of bright sunshine, and the absence of anything like high winds. For instance, taking March as a whole, the highest temperatures in shade were as high as those at the beginning of an average May, and during April what might be expected during the last week in May. The total rainfall for the two months amounted only to one-sixth of the average quantity, making them the two driest consecutive months of which there is here any record (1856-93). The present drought has now lasted sixty-two days, during which time the fall of rain on no day reached one-tenth of an inch, while the aggregate quantity deposited was little more than a quarter of an inch. The cooler weather of the past week has caused the temperature of the soil at 1 foot deep to fall 2°, but has scarcely affected the thermometer at 2 feet deep. My Roses have made good growth since they were pruned, and the foliage is uninjured by frost, but on closer inspection many of the shoots are found to be coming blind, no doubt owing to the chilling effect of several consecutive cold nights which occurred in the middle of April.—E. M., *Berkhamsted*.

Cottage gardener (B. and D. C. and P. S.).—The term "cottage gardener" is a somewhat elastic one, and the interpretation of it varies in different parts of the country. For competitive purposes we may state that a cottage gardener is a man who has a cottage garden or holds an allotment which he tills with his own hands, and who is a labourer, operative, artisan, &c., coming under the designation of a *bona fide* working man, who is in the receipt of weekly wages. In some parts of

the country the amount of rent paid governs the qualification, but it is difficult to set up a hard and fast line of this kind, as the value of houses is much higher in one locality than in another. We think each district or society should set up its own definition and the limitations thereof, according to the circumstances in which each finds itself placed.

An old Auricula.—Can any reader tell me whether the yellow Auricula known in Ross-shire as the "Dusty Miller" is in cultivation, and where it can be had? The specimen flower sent is not from a strong plant, but a fine head of this large yellow Auricula is one of the most fragrant and beautiful of April flowers. The plant I have was taken from one over twenty years old, and there is no doubt it is a very old variety. Is this special kind rightly named "Dusty Miller," and if so, how is it that well-known nurserymen send very common coloured border Auriculas under this name? The foliage of this Auricula is very large, but the young leaves are quite covered with grey bloom. I think the reasons for this Auricula becoming so scarce are, that slugs almost devour it if left in a border, the autumn rains seem to spoil it, and it really requires a little protection and shelter to keep it in health.—WEST HIGHLANDS.

A curious insect.—Would you kindly ask "G. S. S." to name accompanying very curious mimetic caterpillar (closely resembling a bit of dried twig)?—W. M.

** In reply to the above, the insect is the caterpillar of the swallow-tail moth (*Oncopeltus sambucaria*), which is a member of the family Geometridæ, so called from the action of the caterpillars in walking, having long bodies, and only legs at either extremity. When they want to move they extend their bodies as far as they can, and then hunching up their backs bring their legs near the tail as far forward as possible; while doing this they look as if they were measuring whatever they are on. When at rest on the plants on which they feed their resemblance to a short stem or shoot is most remarkable, and it requires a sharp eye to detect them.—G. S. S.

Schizostylis coccinea.—I have a quantity of this which yearly produces a number of leaves, but few flowers. What is the best way to get it to bloom freely?—E. T. D.

Spiræa Thunbergi.—May I be allowed to correct an error in page 322 of THE GARDEN for April 22. For "Berberis" Thunbergi read *Spiræa Thunbergi*. M. A. R., *Liphook*.

Muscari paradoxum is one of the best of the Grape Hyacinths. It is very free, the flowers deep blue and sweetly scented. A good mass of it makes a fine feature in the garden and remains in beauty over a long season.

English florists' Tulips are a feature of great interest in the nursery of Messrs. Barr and Son, Long Ditton. A large collection of the oldest and finest kinds is grown, and are now in full beauty. We hope to make further remarks upon them.

Royal Horticultural Society.—The next display of flowers, fruit, &c., will take place on Tuesday, May 9, at the Drill Hall, James Street, Victoria Street, Westminster. Professor Cheshire, will lecture on "How to Solve Chemical Questions Concerning the Soil" at 3 p.m.

Varieties of Pæonies.—The curator of the Botanic Garden, Cambridge, would be glad to receive specimens of any Pæonies grown under popular names for the purpose of determining the species to which they belong, but cares least for those that are easily referred to *P. albiflora*, *P. officinalis*, or *P. Moutan*. He would also be glad of any specimens of known wild origin.

Oak Apple Day.—Your correspondent "J. I. R." (p. 340) is mistaken in supposing that Charles II. hid himself in an Oak on May 29. The incident occurred a few days after the battle of Worcester, which was fought on September 3, 1651, Charles having fled to Boscombe, a lonely farmhouse on the borders of Staffordshire, inhabited by one Penderell. When Charles

entered London on May 29, 1660 (his birthday) Oak was worn as an emblem of loyalty, and hence the custom of sporting Oak on that day.—S. H. B.

Names of plants.—*G. Whittaker*.—1, *Dendrobium luteolum*; 2, *Dendrobium superbum*; 3, *Vanda tricolor insignis*; 4, *Odontoglossum Ruckerianum*.—*T. Johnston*.—1, *Aerides odoratum*; 2, *Dendrobium glumaceum*.—*South Yorkshire*.—1, *Asplenium feniculaceum*; 2, apparently *Davallia polyantha*; send again when fertile.—*J. P.*.—1, *Cattleya Mendeli*, not *Trianae*.—*B. J.*.—*Dendrobium superbum*.—*James Wiltshire*.—1, *Dendrobium thyrsiflorum*; 2, *Cypripedium Lawrenceanum*; 3, *Cypripedium punctatum*.—*A Lover of Hardy Plants*.—These are four forms of *Gentiana acaulis*, all very beautiful.—*G. Grungruss*.—1, *Notholaena vestita*; 2, *Asplenium formosum*; 3, *Polypodium Schkuhrii*; 4, *Trichomanes sinuosum*; 5, *Hymenophyllum asplenoides*; 6, *Lomaria linceolata*; 7, *Polystichum glandulosum*; 8, *Adiantum tinctorum*.—*F. N.*.—*Dendrobium Falconeri giganteum*, rare.—*G. W.*.—1, *Phlox subulata*; 2, *Phlox nivalis*.—*Mrs. G. G.*.—1, *Epimedium rubrum*; 2, *Doronicum caucasicum*; 3, *Menziesia empetrifloris*; 4, *Ledum latifolium*; 5, *Ledum palustre*; 6, *Berberis Darwini*.—*W. Richardson, Hassocks*.—*Pittosporum undulatum*.—*Anxious*.—Please send in flower.—*W. B.*.—*Dafodil Orange Phoenix*.—*J. T. L.*.—The Yulan (*Magnolia conspicua*).—*E. Castle*.—Please send fertile fronds.—*A. Stirling*.—*Streptosolen Jamesoni*.—*M. M.*.—1, *Polystichum coriaceum*; 2, *Pteris grandifolia* probably, send in fruit; 3, *Asplenium bulbiferum*; 4, *Davallia dissecta*; 5, *Phymatodes Billardieri*; 6, *Davallia decora*; 7, *Davallia Vogeli*; 8, *Davallia bullata*; 9, *Bletia verrucunda*.—*F. Hand*.—1, *Pulmonaria saccharata*; 2, *Pulmonaria mollis*; 3, *Pulmonaria angustifolia*; 4, *Prunus sinensis fl.-pl.*.—*Flowers in tin box*.—*Ribes aureum*, *Fritillaria*, *Iris*; good specimens, not scraps, should be sent.—*G. Belmont*.—1, *Zygopetalum crinitum*; 2, *Odontoglossum Andersonianum*; 3, *Odontoglossum gloriosum*; 4, *Oncidium flexuosum*; 5, *Trichopilia tortilis*.—*N. Cozwell*.—1, *Cattleya Mossiae*, poor variety; 2, *C. Lawrenceana*; 3, *Oncidium sarcodes*.—*H. Thomas*.—1, *Nipholobus Heteractis*; 2, *Gymnogramma decomposita*; 3, *Lastrea crinita*; 4, *Hymenophyllum flabellatum*.—*G. Taylor*.—All three varieties of *Vanda tricolor*.—*J. Graham*.—1, *Microlepia scabra*; 2, *Adiantum tenerum*; 3, *Polystichum triangulare*; 4, *Hemionitis palmata*; 5, *Elaphoglossum scolopendrifolium*; 6, *Pleuroidium crassifolium*.—*George Ellen*.—1, *Cattleya Mendeli*; 2, *C. Lawrenceana*; 3, *C. intermedia*; 4, *C. Mossiae*, all very badly bruised.—*F. Collins*.—All young seedling plants; let them grow and become fertile, then send them; we shall be pleased to name; at present it is not possible.—*H. Lunt*.—1, *Vanda Amesiana*; 2, *Cattleya Mossiae*; 3, *Odontoglossum crispum*.—*T. Bedford*.—*Forsythia suspensa*.—*A Constant Reader*.—*Exochorda grandiflora*.—*T. G.*.—Please send fresh specimens.—*Ponto*.—1, *Calceola sp.*; 2, send better specimen; 3, *Bird Cherry*; 4, *Phymatodes Billardieri*.—*Constant Reader*.—1, *Bird Cherry*; 2, *Spiræa Thunbergi*; 3, *Echeveria sp.*.—*Oswestry*.—The *Bird Cherry*.—*W. R. H.*.—*Iris tuberosa*.—*Amateur*.—*Odontoglossum triumphans*.—*J. R.*.—*Keria japonica fl.-pl.*.—*West Highlands*.—*Scilla peruviana*.—*R. Stubbs*.—*Ficus Parelli*.—*Henry Buckley*.—*Fritillaria pontica*.

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No. 1121. SATURDAY, May 13, 1893. Vol. XLIII.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare.*

ORCHARD AND FRUIT GARDEN.

HOW TO MAKE FIGS FRUITFUL.

FIGS planted out under glass are oftentimes given the benefit of a rather wide and deep root-run, and also it may be a compost that would better suit Grape Vines. As a consequence they are almost certain to grow far more strongly than desirable, abundance of sappy wood and strong leaves, but only a light crop of fruit being the usual outcome. The way out of the difficulty is to restrict the naturally rambling habit of the coarse, hungry roots, as this quickly alters the character of the trees for the better. All things considered, pot culture answers remarkably well, especially if a few young trees are constantly being brought forward to take the place of any of the older ones which have ceased to produce so many and such fine fruit as desirable. Keeping them in pots also admits of rather hard forcing being resorted to, two or even three crops being taken from the trees before they are turned out into the open for a time and the house put to other purposes. Where, however, there is a low span-roofed house, or a good lean-to against a fairly high back wall, that can well be devoted constantly to Fig culture, then planting the trees out will be found the least trouble. Two extra heavy crops can also be had from these planted-out trees, always provided they are restricted and not over fed at the roots. One of the best early crops of Figs I have ever seen was growing in a comparatively low span-roofed house at Compton Bassett, Calne, Wilts, under the charge of Mr. Cook. These were planted out in narrow borders on each side, much as Cucumbers or Melons might be, but, thanks to the narrowness of the border and the free admixture of chalk to the loam used in forming the border, the growth was of a very sturdy description and the fruit both very fine and most abundant. The first crop was being gathered late in May and during June, and there would be another fine lot of fruit late in August and during September. Thus well managed, a house of Figs must prove far more profitable and afford more pleasure to Fig-loving owners than a similarly sized or even larger house occupied by any other kind of fruit could. Keeping them trained not far from the glass and the roots confined to a narrow border of rather solid soil is, then, one good way of bringing Fig trees to a fruitful condition, and should they at any time give signs of impoverishment, that is to say, if they produce far more fruit than they are capable of maturing, then ought they to be liberally top-dressed and well fed from the surface.

On one occasion when I had my doubts about planting Figs in a border prepared principally for Peach trees, I adopted the plan of plunging them in pots and allowing the roots to spread out from the drainage holes and over from the sides of the pots into the rather strong soil around. All were in 10-inch pots, and were kept in them for several years, the roots eventually cracking them badly, but they answered the purpose of checking a gross, unfruitful habit

of growth, and in after years the border being greatly exhausted of its fertility it was not much strong growth that was made. On another occasion I placed large bush trees in square brick pits, and these answered well till the roots found their way too freely through the $4\frac{1}{2}$ -inch wall into a rather strong Vine border beyond. For the sake of both Figs and Vines those rambling roots had to be cut off and the walls cemented. Had there been plenty of head room then, I would have let the trees as well as the roots spread, and have no doubt the crops would have been quite satisfactory.

At Canford Manor, Wimborne, Mr. Crasp has adopted another well-tried method of checking over-luxuriance and improving the productiveness of Figs. Originally the trees were planted along the front and against the back wall of a well-heated lean-to house. The former grew rather too strongly to be productive, and also unduly shaded those against the back wall. These latter are rooting in a narrow border 20 inches wide and 2 feet deep, with pipes for affording bottom-heat underneath. It was decided that they should cover the roof as well as the back wall, those along the front being cut out. They are now half-way down the roof and producing grand crops, this desirable result being brought about conjointly by the narrow border and the check given to the flow of sap by training down the roof instead of in the more orthodox manner. Negro Largo, which at its best is a very superior variety, is unusually fruitful at Canford; whereas, at other places when planted out in a larger border, it is found to be rather shy bearing. Keeping it partly confined, as previously described, also gives the desired check to strong growth, and thus treated it succeeded admirably with me. Brown Turkey is indispensable for other positions and methods of culture, and it is doubtful if a better or more serviceable variety will ever be introduced. No mistake in any case will be made in adding either mortar rubbish or chalk freely to the loam used for borders, and in addition firmness of root-run is also most desirable. Bone-meal should be mixed with the soil for pots or narrow borders.

M. H.

Protecting Gooseberry buds.—Last year I thought I had found a means of saving the Gooseberry buds by simply spraying with liquid lime, but, strange to say, this season the birds did more destruction amongst the sprayed bushes than among those not limed, although the only difference I made this season was in adding paraffin. In future, the bushes, liable to attack from finches being comparatively few, as in the open they are uninjured, must be covered with netting. The increase in crop of berries would more than pay for netting, which is always in request later on for covering wall trees. It is surprising what a difference even one thickness of netting will make in warding off frost, though I prefer it double or treble. No other covering is half so useful or convenient, as you can let it stay over the trees till all danger of frost is past. Spraying Plum or Cherry trees with the liquid lime is a success, and I can ensure a good bloom on trees which would otherwise scarcely have a fruit-bud left on.—E. W. B.

Fruit prospects.—Judging from present appearances, we have every reason to expect a good all-round fruit year. Although we have had for several nights past 4° or 5° of frost little damage has been done hitherto, owing to the extreme dryness of the soil. It is the May frosts following storms of rain, snow, or hail which we most dread, when the early Strawberries and Apple trees are in bloom. At present fruit trees are very forward, most of the Plums and Pears have set, while Apri-

cots and Peaches are everything we could desire some of the former being as large as marbles. Apple trees (early varieties) are coming into bloom more especially noticeable is Lord Suffield, every tree being a perfect picture. There is generally considered to be more risk in an early blossom, but it may sometimes be a positive advantage, for two years since I noticed Apple trees which had set the fruit when the severe frost of May 17 came bore in some instances a good crop, while those then in full bloom were comparative failures. Pear trees against the wall have set their fruit better than usual, and are already making quite long shoots, a sign of vigour and sufficient moisture at the roots, the downpour of February last having made all large trees proof against several months of drought. Gooseberries are wonderfully forward, but for the bush fruits, especially the moisture-loving Black Currant, we want rain badly, or there is pretty sure to be a blight (and blight of some kind is always ready to attack vegetation in an unhealthy condition) in the form of caterpillars or the "honey-dew."—E. W. B., *Hereford, April 17.*

Liquid manure for fruit trees.—Now is the time to apply liquid manure to fruit trees, especially to Apples on the Paradise and Pears on the Quince, which require much moisture owing to the limited extension and meagre depth of the root-run of these dwarfing stocks. A fruit tree in bloom, which is in vigorous condition and able to imbibe by its roots all the nourishment requisite at that critical period, will not only throw off or overcome the various forms of blight, but will withstand frost better, owing to the greater luxuriance and protective influence of its foliage, than the tree which, through drought, exhaustion, or poverty of soil, has enough to do just to keep alive. From the former you may expect a good crop of fruit, from the latter none. I have plenty of trees promising again for a good crop on which I should scarcely have expected to see even a blossom, so heavy was the crop of fruit they carried last season, if they had not been assisted with liberal dressings of artificial and liquid manure.—B.

Late-kept Apples.—Almost invariably have we seen fairly well preserved collections of Apples at the Temple show. It has not always followed, however, that having been kept so long they have been worth so much trouble. It was very much the impression that a collection of eighteen varieties, and some of them very fair samples, set up at the Drill Hall at a recent meeting there, from Titsey Park, Surrey, had been kept too long, for even Cox's Orange Pippin and Scarlet Incomparable, whilst very firm, clean and handsome, still had so much lost flavour, that they were not recognisable to the taste. If Apples so kept, and in a very cool place, are found to be of such indifferent merit on April 25, in spite of excellent appearance, it is hardly to be expected the fruit shown a month later can have any merit whatever. The fact serves to show the great importance of tasting these late kept Apples before awards are made, as howsoever fresh looking, they may all the same for eating or cooking be comparatively worthless. We have for the past two months had an unusually exhaustive time for late Apples. The heat and very great dryness of the atmosphere have penetrated everywhere, Apple stores in no case, and however ordinarily cool, being exempt. Whilst it is constantly found that exposure to a low temperature robs Apples very largely of flavour and quality, it is certain that warmth and dryness of air conduce to the same results. Even under any conditions it is very difficult to keep Apples any considerable time without losing flavour. On the whole I think the end of March is late enough for Apples. Later they soon become dry and flavourless, and when in that state have no merit. It is very probable that good sound fruit packed carefully into barrels and then buried in the soil would in that way keep good longer than by any other method.—A. D.

Blenheim Pippin Apple.—In connection with the wall sometimes raised over the poor prices obtained for home-grown Apples, I may

mention a fact which came to my knowledge the other day respecting the produce of a pair of good-sized, though not unduly large, Blenheim Pippin Apple trees, standing on Grass on rather poor sandy ground in Surrey. These two trees, covering perhaps three rods of ground, bore last year 23 bushels of fair-sized, but very finely coloured fruit, which sent to one of the large London stores secured the good return of 7s. per bushel, the railway charge in the pre-raised rate days being a mere trifle. That was just £8. Taking the area for each tree at two rods, it would give eighty trees to the acre, and at the same rate of produce and price would give the enormous return of £320. But even at the rate of one tree to four rods the produce would still have been a wonderful one. Is there any other Apple that would give the same results either per tree or per acre, and is not such a return, even if it be some time deferred, worth waiting for? But in this sandy, gravelly district, where the Blenheim still attains good size and age, young trees are far more precocious in fruiting than they are in stiff, holding soils—a fact that is worth knowing, and may possibly lead to this variety being more freely planted in such districts. It is really most instructive to note how well Apple, Pear, Plum, and Cherry trees do on soil that was nothing better a few years ago than the hungriest, poorest, and most unfertile looking barren heaths, producing hardly decent Heather. Very likely anyone prospecting for fruit land without full knowledge would condemn this soil as only fit to grow Larch or Fir, and yet here the Blenheim Pippin not only grows well, but blooms and fruits well also in quite a young state. Root-pruning is not needed in such a case, although a few sorts of Apples will, from want of proper constituents, suffer from canker.—A. D.

PROFITABLE EARLY PEACHES.

IN THE GARDEN we have seen some of the early kinds given a very bad character, and I do not wish to defend the variety chiefly condemned, Alexander, as I fail to set the bloom—in fact, it nearly all drops. Fortunately, this non-setting does not affect all the early kinds, as some of the American varieties do not fail like Alexander. I admit to a certain extent they are deficient in flavour, but flavour is the last point the market grower considers. With these early Peaches there are certain drawbacks besides flavour, and that is size, as if at all over-cropped the fruit is small, and all do not colour alike. I have a great liking for Amsden June, one of the earliest Peaches grown. The flavour is not that of a Royal George or equal to some of the older kinds. Amsden June is not to be despised, as it is of a good colour, fair size, and very early. It, I should say, is one of the most profitable Peaches grown, as it forces so readily, and when once it is stoned it comes in very quickly. I do not know of any variety that sets more freely and grows so well, taking into consideration its precocity. On the other hand, it is a clingstone, a great disadvantage in the eyes of the professional, but not in the market; at any rate there is always a demand for early Peaches. I have found no difficulty in setting Amsden June, and it always bears freely; the tree is also a robust grower. It is much earlier than Hale's Early, a well-known variety. As an early market fruit I should consider it excellent. When these early varieties are grown it would be well to devote a house to them, as they come so far in advance of the older kinds. Such Peaches as the one named, with Waterloo, Hale's Early, and Alexander, would always find a ready sale in April or early in May if grown well and highly coloured. Some I do not consider worth house room; for instance, Early Beatrice, which is of poor flavour, small, and not a robust grower. Alexander cannot be re-

lied upon, though I have seen some splendid crops at various times. Waterloo is a free grower and should be included in the list of varieties for early supplies. Early Rivers for early forcing possesses valuable properties. This follows closely upon Amsden June and Waterloo, so that if a house is devoted to these early Peaches, there would be no lack of reliable kinds, and I am sure they would prove a profitable investment. I have heard these Peaches objected to on account of size, but large coarse fruits are not expected in April. I admit of late there is a demand for these large fruits, but not by those who know what a Peach should be. I do not enter into the question of growing these early varieties for walls in the open. When one can have ripe Peaches in twenty weeks there is a great saving of time and fuel, and the grower is able to market the fruit readily. There need be little fear of foreign or Cape Peaches ousting home-grown well-ripened fruits, as the latter would be far superior in every way, flavour and appearance being a long way ahead. G. WYTHES.

American blight on Apple trees.—The late brilliant weather has brought out that old enemy of Apple growers, the American blight, which always increases rapidly in dry seasons. There is no mistaking this pest, as the bunches of fluffy white down with which the insects are covered at once attract the eye of any anxious cultivator, and the sooner a remedy is applied the better. I find paraffin oil one of the surest and cheapest. Taking a common galvanised pail, I fill it half full with warm soapsuds, and to this add half a pint of paraffin oil, and apply it with a small hand brush, dipping it right into the mixture, and then wetting the branches wherever the white downy patches are seen.—J. G. H.

Apple Worcester Pearmain.—I am rather surprised at my friend Mr. Tallack's strong condemnation of Worcester Pearmain, for as an ornamental tree, both in flower and fruit, it has few equals; though as a dessert fruit, I admit it is only of second-rate quality. But tastes and local circumstances differ widely. I know of several places where it is held in high esteem, both for cooking and dessert. As a profitable market Apple it has few equals.—W. SANGWIN.

Strawberries and moisture.—The crop in the open will soon show the effect of the prolonged drought, especially on light soils, if means are not speedily taken to supply the roots with moisture. Mulching will have been done earlier than usual this season, and will be of great benefit to the fruit and assist in swelling the early set blossoms. More than mulching, however, will be required if large fruits are desired. Where the plants have been mulched for some time the effect is soon seen by their improved appearance and the colour of the leaves. This mulch will prevent dryness during the flowering period and enable the fruit to set freely. There are some drawbacks to watering plants in bloom with cold spring water, as often when applied with force it injures the petals and tender fruit, causing them to go black, so that in giving moisture care should be taken to apply it between the rows and not directly on the plants. When watered with a hose it is a good plan to allow the water to run gently between the rows, removing the hose frequently. A thorough soaking will do more good than daily dribbles. Rain or pond water is much better if it can be obtained. The great advantage of young plants will now be apparent over old plantations, as these latter being large masses with nearly all surface roots they are soon exhausted, having drawn all the support and moisture from the soil, whilst the younger plants have more root-hold, and are now getting the support of good soil and high cultivation. Plants that have been forced and planted out for a permanent crop suffer badly in such seasons as this. Much assistance will be given to the roots in light soil by

treading the ground about recently put-out plants; even these should get some assistance in the way of short litter and moisture. Runners planted last year for the production of plants for forcing will also need attention, as these will fail to give strong runners if moisture is deficient. Liquid manure will now be of great service, but this acts injuriously if not diluted. I do not advise liquid manure before the fruit is set, as it often injures the bloom, causing the latter to go blind. When moisture is applied it should be given soon enough to save the crop. It is almost useless when the fruit is colouring, and, as previously stated, if the foliage is merely wetted it is useless.—G. WYTHES.

PEAR TREES UNHEALTHY.

I SEND you some leaves and incipient fruit taken from Pear trees in my garden. You will see they have been attacked by a larva or fungus. All the Pear trees in my garden have been similarly attacked. Not one of the other fruit trees has suffered. Can you inform me what the destroyer is, and if you can suggest a remedy I shall be much obliged?—JAS. C. ALLMAN.

*** This is a bad attack of the Pear leaf rust (*Roestelia cancellata*), and though not often heeded, is much more prevalent and injurious to Pear trees than is generally supposed. Very few fruit gardens are really free of it, but instances of the whole of the trees being overrun by the rust are, happily, rare. The first symptoms of it are small raised yellow spots thickly dotted all over the leaves, giving them the appearance of being blistered, these spots eventually changing to a rusty brown colour. Experts state that this is the work of a fungus, and which, owing to its penetrating and spreading under the epidermis, or thin membranous covering of the leaf, is very difficult to combat. At the present time the best that can be done is to pick off the affected leaves at once, or before the spots change to a brown colour, with a view to checking a more widespread attack. If the trees are very badly infested by the fungus, wholesale clearance of the leaves would scarcely be wise, especially if there is fruit to be considered. All that can be done is to allow the disease to take its course, but in order that activity at the roots may be sustained, no summer pruning should be resorted to. If the trees are not starved at the roots, many of the shoots may, so to speak, grow out of the disease, and any way the fruit will be more likely to swell to a serviceable size and the trees be less weakened than would be the case if either pinching back or early summer pruning were practised. All leaves that turn black and are on the point of dropping should be collected and burnt. Next winter, after the trees have been pruned, they may well be cleared of all rubbish, including any about the border, and then receive one or two thorough syringings with an ammoniacal solution of carbonate of copper dissolved and used at the rate of 1 oz. of carbonate of copper and 36 ozs. of ammonia to 18 gallons of water. This would probably destroy most of the disease germs resting upon or in the neighbourhood of the trees, and next season's attack could then be met by hand-picking the affected leaves. Diseases and insect pests are far more rife than they were last year, owing, probably, to the abnormally early and very tender growth of the trees being greatly checked by the cold nights and easterly winds.—W. I.

Peach tree borders.—On page 250 we find "A. D." objecting to late training of Peach and Nectarine trees against open walls on account of its compelling the treading on the borders perhaps planted with some early crops. Then when cropping so close up to the walls or "immediately in front of the trees" is objected to, he suddenly remembers that some of the best examples of open-air trees have at least a 3-feet clear space between them and front occupants of borders. The Swanmore, Ditton Park, and other walls that come under the cognisance of "A. D." must be very high indeed if

"some 3 feet" (this meaning anything up to 4 feet) is not ample ladder room for the men. I will go further and assert that it is also ample space to leave in front of the trees. They do not require a border 10 feet or more in width, and in very many cases the trees would not succeed nearly so well as they do under present circumstances if given unlimited rooting space. When alluding to the 3 feet, more or less, of mulched border at Swanmore, "A. D." hazarded the opinion that the Peach roots certainly do not stop short at that, but find their way into the herbaceous border beyond. Doubtless that was a safe guess, but I will venture another to the effect that by far the bulk of the roots, or those that sustain the trees in such excellent health, are yet to be found in the clear mulched space. In order to be successful with Peach trees in the open a certain amount of lifting and root-pruning is a cultural detail that must not be neglected. Now this process has the effect of keeping the roots much "nearer home," mulchings with manure and liberal supplies of water completing and sustaining what the lifting commences. A south border wholly given up to Peach trees I have never yet seen, but there are too many instances to be met with where wall ladders cannot well be used without damage to vegetable or other crops in front of the trees.—W. IGGULDEN.

NOTES OF THE WEEK.

Aubrietia Leichtlini.—A broad mass of this fine Aubrietia at Tottenham a few days ago was very fine, the rich rosy crimson flowers almost hiding the growth. It is one of the best hardy plants of recent years, very free, strong in growth, and quickly spreading out into a broad carpet.

Tulip Buenaventura is one of the most brilliant flowers in the collection at Long Ditton. A break of it is in full bloom, and, though rare, such a form should become common in gardens for its remarkably bright, yet not garish colour. The flowers are of bold size, brilliant scarlet, flamed with yellow.

Calochortus Benthani is a rare and charming species. It is in bloom at Tottenham, the flowers rich golden yellow in colour and the inner segments hairy, each having a rich brown blotch at the base. The growth is dwarf, but free. Those who care for choice bulbs should make a note of this very pretty kind.

Vriesia Morreni.—This variety, to which a first-class certificate was only recently awarded, is a worthy companion to the *Tillandsia Lindenii* var. It is of the same compact style of growth, but further description is not now necessary, as reference can be made to the awards of the last meetings of R.H.S. and of the R.B.S. where it was exhibited.

Tillandsia musaica.—This Bromeliad is as remarkable for its finely marked foliage as *T. Lindenii* is for its flowers. Its name well denotes the mosaic-like markings of the foliage, which is of a pale yellowish green, marked in an irregular manner with dark green. It is of vigorous growth, and presents a fine appearance as a specimen. *T. hieroglyphica* is not unlike it, being also a fine species.

Begonia Arthur Malet.—This is a very ornamental fine-foliaged variety, with its leaves of a bright rose shade, suffused with a silvery gloss, the midrib and veins being greenish. Amongst other fine-foliaged plants this stands out remarkably distinct, and as a decorative plant should be largely grown. Its flowers in addition are very attractive, these being rosy pink, lasting well during the winter season.

Streptocarpus hybrids.—When seen grouped together one is able to judge far better of these beautiful flowering plants than if seen separately, there is such a diversity in the shades of colour, whilst the spikes are produced in great profusion and in so continuous a manner. The foregoing were noted in a casual walk through the stove show house in the nursery of Messrs. Veitch, wherein is to be seen a most tasteful arrangement of rockwork with suitable plants thereon, being an object lesson on what our houses should be to render them more attractive.

Tulipa linifolia is a delightful species from Bokhara, and has brilliant scarlet flowers, which make a great show of colour when the bulbs are planted in a mass. It is not much known as

yet, but will assuredly become popular, as it is a very hardy, free-growing kind, not showing the same uncertain character as *T. Greigi*. The flower-stems are at first quite short, but quickly get taller, and the flowers keep true to their colour.

Iris verna.—Unfortunately this will not succeed everywhere, and a good colony is required to get effect from the dainty flowers. At Tottenham, where it is now in bloom, a light soil, rather peaty, and cool sheltered situation are chosen for it. The growth is dwarf and the flowers as strongly scented as *Violets*, are light blue, the base of the falls rich yellow, surrounded by white, veined with blue.

New Zealand Mountain Speedwells.—Mr. Okell sends us charming photographs of several species of alpine Speedwells of New Zealand. They are extremely distinct and graceful plants. The kinds sent are white, with pretty light purple stamens. They are an interesting family of plants, many of them hardy or nearly so, and some charming for rock gardens, especially in mild districts. We hope to publish an illustrated account of the genus by this gentleman shortly.

Morisia hypogæa is one of the most interesting plants on the Kew rockery, several tufts being in full bloom. A coloured plate was given of it in *THE GARDEN*, September 12, 1891, and a note recently appeared referring to its beauty when grown in pots. The plants at Kew in the rock garden are flowering profusely, delighting in a light soil and warm corner. The flowers are intense yellow, and nestle against the deep green leaves, providing a rich contrast in colour.

Rhododendron Dalhousianum.—Amongst my Sikkim Rhododendrons a plant of *Dalhousianum* is just now flowering with two double flowers on a truss of four. I have tried to cross these with *Aucklandi*, but am not yet sure of the result. My large plant of *Aucklandi* bears 108 trusses of five to seven flowers, each flower measuring 13 to 14 centimetres through. How is it that this most beautiful Rhododendron is so seldom seen in winter gardens?—O. F., *Lehenhof*.

The Mistletoe in France.—The Mistletoe, says the *St. James' Gazette*, which has so long been shipped every year in such large quantities from France to England, will be more difficult to find next winter. That which was sent across the Channel came almost exclusively from the orchards of Normandy, where it flourished on the Apple trees. The Government have decided that all the Mistletoe must be cut off the Apple trees at once, on the ground that it sucks the sap of the trees and impoverishes them.

Anthurium Scherzerianum var. Duvivierianum.—This is the best of the white varieties we have yet seen, having pure white spathes of medium size and of the best shape. In *A. S. album* the colour is neither so pure as in this newer variety, nor is the growth or the freedom of flowering so good. We were never particularly struck with *album*, but this is a decided acquisition, being a most worthy companion to the type and evidently quite as free. Small plants appear to flower as profusely as possible, being most attractive and so very distinct.

Pansies.—In some places Pansies look far from well, very markedly showing in vigour and size of bloom the effects of long-continued heat and drought. Wherever the blooms are really good the plants were put out in autumn or quite early in winter. I was fortunate in getting several beds out early in October, and the plants do not in the least show the effects of the season, whilst others put out in winter and early spring are very inferior. I have given them no water, but just a surface stirring, and then a mulch of short litter.—J. C. B.

Glonera jasminiflora.—We noted this lovely pure white flower in beautiful condition recently. For purity of colour nothing can surpass this. The plant in question was in profuse bloom with trusses and flowers of about the size of those of President Cleveland Bouvardia. When well managed it makes as compact a shrub as an *Ixora* and succeeds well under the same treatment, although it

may be cultivated in a cooler stove. It is not on the whole so free in growth as the majority of *Ixoras*, but nevertheless it grows sufficiently strong for all practical purposes. For bridal bouquets it would prove most invaluable.

Manettia bicolor.—This introduction of fifty years ago from the Organ Mountains, of Brazil, is seldom seen in these days when showy flowers have the preponderance. Its slender trailing growth requires to be trained around some sticks or upon a wire trellis, or, what is better still, upon wires attached to the roof near the glass. The flowers, tube-like in form, bright scarlet in colour with the extremities of a rich yellow, are produced singly upon the slender growths, but in quite sufficient numbers to make the plant attractive. This is one of those plants that recommends itself by its unassuming beauty.

Syringa alba grandiflora.—This was in full bloom recently in the Coombe Wood nursery of Messrs. J. Veitch and Sons, and we made note of it as an exceptionally good variety, quite one of the best of the white-flowered kinds. The flowers are bold in size individually and produced in large, dense clusters. It is an old variety, but one is apt to overlook the fine Lilacs of past years in the endeavour to get novelties. The Lilacs of Mons. Lemoine, of Nancy, are very beautiful, the doubles in particular, and many will be grown largely in the future. The great thing is to get clear, distinct colours.

Flowers in vase.—I came across to-day what appeared to me a beautiful vase of flowers in a gardener's cottage. The material was culled from a border of hardy plants close by. It was composed of long sprays of *Dielytra spectabilis*, Poet's Narcissus, Forget-me-nots, and an early-flowering Honeysuckle. The deep pink flowers with its peculiar green elegant foliage of the *Dielytra* harmonised well with the white Narcissus, blue Forget-me-not, and soft white opened and lovely brownish unopened pips of the Honeysuckle. The scent of the whole was delicious without being too overpowering.—H. J. C., *Grimston*.

A rare Water Lily in flower now in the Lily house at Kew is *Nymphaea Laydekeri* var. *rosea*, one of the introductions, we believe, of M. Latour-Marliac from Japan. The flowers are not remarkable for size, but charming in colour, opening of a delicate rose-pink shade, and dying off an intense crimson; the segments are pointed, and in every way this is a fine form. The Lilies in this house are in splendid health. *N. tuberosa* flavescens, the beautiful yellow Water Lily of which a coloured plate was given in *THE GARDEN*, March 31, 1888, under the name of *N. Mariacea*, *N. stellata*, and the variety *albiflora* are in full beauty. This is one of the most interesting houses at Kew in the summer season.

Medinilla magnifica.—As an exhibition plant this used to be grown occasionally some years ago, but now it is rarely seen in private collections. Nevertheless, when well grown and cared for it will flower freely whilst still of comparatively small size. When in bloom it is not easily surpassed in its showy character nor in its distinctiveness, whilst the flowers last a long time in beauty. Its long pendulous racemes, often a foot or more in length, are produced usually upon the young wood of the previous year, but additional ones will push forth from the old wood also. The colour of the flowers and the footstalks as well is a bright rosy pink, the form of the raceme being not unlike a bunch of Grapes. Even the foliage is very ornamental and attractive when the flowers are over.

Lily of the Valley.—I enclose a few spikes of Lily of the Valley. The bells average from seventeen to twenty-two per spike. The bed in which they grow gets the benefit of shade from two standard Pear trees at midday. A mulch of good rotten manure is afforded after the leaves die down in autumn, and allowed to remain until again replaced. During the winter an occasional watering with farmyard liquid manure is afforded. The spikes sent are from a crowded bed, yet I think

they would compare favourably with those grown in Germany and elsewhere on the Continent.—M. WEBSTER, *Beckenham*.

* * Remarkably fine spikes and individual blooms, the foliage also being strong and robust.—ED.

Vegetation in East Anglia.—The drought, notwithstanding prevailing cold winds chiefly from east and north-east with an occasional breeze from the west, though seldom lasting long enough to mellow the air that had so recently travelled from the east, has pushed forward vegetation a month or more. Hence the May, double as well as single, the common Laburnum, the Chestnuts, the Honeysuckles, and even Roses here and there are in full blossom on May Day. The Apples are also all out. All other fruits have finished blooming and have either set or failed to set before now. Strawberries, too, are in bloom, quite an unexpected accompaniment to May Day. Asparagus is in full cut, and there is any quantity of green Gooseberries.—D. T. F.

Two good Carnations we noticed lately in the nursery of Mr. T. S. Ware are named Horace and Florence Emily Thoday. The former of the two is very fine in pots, but is also a good outdoor variety, and was conspicuous about two years ago in the Chiswick trial of Carnations for its freedom, robustness, and brilliant colour. The flowers are full, the colour bright scarlet, and split calyces are not frequent. It is not altogether free from this objectionable characteristic of many Carnations, but is not so bad as several kinds grown largely in gardens. A very lovely flower is Florence Emily Thoday. Unfortunately, the name is likely to hinder its popularity. There is much in a short, simple name for a flower. The flowers of this variety are pure white, the petals broad, firm, robust, and are held well within the calyx, while the pods do not burst. The flowers are also sweetly-scented, another valuable trait. Many new Carnations are practically without fragrance, and therefore lose much in value.

Tillandsia Lindeni vera.—This form is distinct in habit from the type—in fact I think it is doubtful if it should not be deemed a distinct species. The flowers, it is true, are of a beautiful shade of blue, but hardly so brilliant or so large as in *T. Lindeni*, whilst the growth of the former is much more compact and dwarf, with narrower foliage that is not so dark in colour. The distinct and most pleasing feature of *vera*, however, is in the lovely rosy pink of the spathe, which are quite an attraction independent of the actual flowers themselves, and as these last long in beauty are actually the main feature of the plant. In *T. Lindeni* the colour of the spathe is more of a carmine shade, whilst the spikes are produced upon much longer footstalks. These flowering Bromeliads, or, more strictly speaking, in which the flowers are the most beautiful characteristic of the plants, are worthy of far more recognition than they receive.

Injured Apple blossom.—The show of bloom this year on all the fruit trees has been very fine. On going round the garden this morning, I find the bloom on the Apple trees to be very much destroyed by maggots, of which I enclose some specimens. I am syringing with quassia. I should be obliged if you could let me know to what cause this blight is owing, and if anything can be done beyond what I am doing. I find the maggots have not attacked any other trees.—G. A. CURZON.

* * Your second consignment of injured Apple blossoms contained three specimens of the caterpillar of the small ermine moth (*Hyponomeuta padella*) and two other kinds of caterpillars which I cannot identify, but I hope to give the names next week. You did quite right in syringing with quassia. You should have added 5 lbs. of the best soft soap to every 100 gallons of the mixture. The soft soap makes the quassia mixture adhere to the caterpillars and the leaves. Twelve pounds of soft soap, half a gallon of paraffin oil to 100 gallons of water is also a good wash, but requires being kept very carefully mixed, or too much paraffin will be

applied at times, so more harm than good may be done.—G. S. S.

Heuchera sanguinea is a precious garden plant, and the coloured plate of it in THE GARDEN, October 25, 1884, shows well its character. A large quantity of seedlings may be seen in Mr. Ware's nursery, and it is interesting to note the great and charming variety of colours, varying from deepest crimson to the softest pink. A light soil and a fair amount of sun are necessary to grow well this Mexican species, and although a comparative novelty, having been introduced about ten years ago, it is now grown largely. There is, however, an impression amongst those who do not know the plant that it is in some measure fastidious, but it will thrive well under ordinary care, and the variety of colours in the flowers of seedlings increases its interest. The best varieties are those of deep colour, the intense crimson in particular, as these produce a richer effect in the garden. The delicate flowers with shades are pretty when cut, and a few of the graceful spikes in vases are very charming. *H. sanguinea* was introduced, we believe, by Mr. Ware, and the vigorous character of the plant shows how well it is adapted for gardens, its compact habit, also profusion of graceful spikes, fitting it well for the border.

Flowering shrubs from Truro.—I am sending you sprays of flowering shrubs just to show the floral wealth of this county compared with that of the less favoured districts in the north and east of England. I sent you fine branches of *Embothrium* last year. It seems to be setting seed freely, so I am loth to cut much at present. The spray of *Ceanothus azureus* is from a tree over 20 feet high, one mass of lovely azure-blue. The *Fabiana imbricata* is from a plant about 10 feet high. The *Habrothamnus fascicularis* is from a wall outdoors. *Chimonanthus fragrans* is bearing pods of seed. *Abutilon vitifolium* is from a tree over 20 feet high. *Pittosporum tenuifolium* has flowered profusely this spring, and in the evening scented the place for a long distance around. Masses of *Azalea indica alba*, fully 12 feet across, are now one sheet of ivory and paper-white. *Raphiolepis ovata* grows and flowers freely here. Besides the above we now have thousands of Arums in the ponds with Aponogeton now in splendid flower, with many other half-hardy things of great interest, which it would be useless to attempt to grow out of doors east or north of Devonshire.—W. SANGWIN, *Trelissick, Truro*.

Scarlet Anemones from Gunton—I have just gathered bunches of three types of the Aldborough Anemone to send for your inspection. A most brilliant and dazzling bed in the sunshine it has been now for some weeks. The flowers are very numerous, but not so fine or so long in the stalk as in a moister spring. As I saw the very first flower of this Anemone that opened in the late Rev. J. G. Nelson's garden at Aldborough, which bulb, I think, I am right in stating was sent him by a Greek botanist, Mr. Poö, I do not think it scarcely fair to write of it as the Aldborough Anemone, as your correspondent "A Gloucestershire Parson" names it. This spelling of Aldborough is associated with a place of that name in Suffolk, but not with Mr. Nelson's Aldborough. *Anemone grandiflora aldboroughensis* would be at once descriptive and correct. A brilliant display may be had from them for three months, as they come into bloom in February after mild winters, and continue in flower into and through May. They are easily raised from seed, and commence to flower the following season after sowing, but produce the finest blooms when the bulbs are three and four years old. I have had flowers in some seasons 4 inches in diameter.—W. ALLAN, *Gunton Park*.

* * These are bright and splendid things, fine in colour and form. It seems a simple form of Anemone fulgens. New and fanciful names are a mistake, unless they belong to an absolutely distinct and new species. There is no reason why we should give long Latin names like *aldboroughensis* to flowers long known and grown in our gardens.—ED.

Poppy Anemones from Ireland.—In reply to your letter respecting Anemones, I sow the seed thinly in boxes and place them in a cold shady frame about the middle of April. I plant the seedlings out in July or early in August on a south-east border in a mass about 20 yards long by 2 yards wide. This border has been very bright for over a month now. To me there is no flower so charming as the Poppy Anemone when fully open. In preparing the bed I take out the soil to the depth of 6 inches, and fill in with well rotted cow manure, then return the soil on the top of the manure, fork it up again, rake it level, let it settle for several days, and then plant the Anemones in rows about a foot apart each way. The plants from which I cut the flowers sent are two years old. One-year-old plants give the finest and largest bloom if the seeds are sown not later than the end of April in this cold and wet district. I save my own seed from selected plants annually.—J. LEICESTER, *Farnham Gardens, Farnham, County Cavan*.

* * Superb and well-varied flowers of this noble old Anemone, some of them quite 5 inches across. We think the scarlet forms of this Poppy Anemone are, if anything, better than the best forms of Anemone fulgens. It would be well worth while to select and increase these forms, a lovely one of which we remember seeing at Ditton years ago. The pale violet and lilac forms are very beautiful, and the best and purest of them should be increased so that one might get solid and definite effects. A mixture, however good, is not always the best.—ED.

Notes from Chester.—Amongst the most strikingly effective hardy flowering plants now in their beauty are the free-flowering Azaleas. We have here in the nurseries banks of bright colours which are of dazzling splendour, yet of that peculiar quality suggestive of softness and coolness—if such a quality can rightly be given to flowers—which seems to belong to certain shades upon which the æsthetic schemes of colour seem to have been founded. Amongst the blooms sent you will find a hybrid *Azalea mollis* *Dulcinée*, a beautiful brick-red, and General Gaffinet, a rose-lilac, nearer pink, spotted yellow, and very effective in the open border at this period of the year. The three new *Azalea mollis* sent are Emil Leibig, Hugh Koster and Anthony Koster. The two first-named are nearly alike as to colour, but in such a delightful shade we can well afford to have two representatives. We might, perhaps, best describe them as terra-cotta, blotched with chocolate. The last-named is delicately beautiful, apricot tinged with a deeper shade on the tips of the petals, and a yet deeper shade on the under side of the petals. We send a truss of bloom from a splendidly-tinted specimen in our batch of seedlings—a tender buff, creamy-like tint, which is soft and delicate in the extreme when seen in its place amongst other more pronounced reds and yellows. *Azalea alta-clarensis* is also very fine. We also send you blooms of six varieties of the new double-flowering *Azalea mollis* running through various shades, from pinky white through clearer pinks, and through shades of sulphur to yellows and reds. These are of fine arrangement as to disposal of petals, securing in their over-folding, variation of tint, which is a very telling feature, rendering effective service in the shrubbery. We have also sent three spikes of bloom cut from three new Lilacs here, and which are marvellously in advance of the old flore-pleno type of Lilac, which was insignificant both as to the size of its flowering spike and the quality of the individual flowers. The symmetrical head of warm rosy-violet flowers of Michel Buchner marks this variety out 'at once as of importance. It is simply splendid in the nurseries here, whilst the compact, dense trusses of bloom borne by Le Gaulois give this variety also a place in the foremost rank. The big panicles of rich flowers characteristic of President Grevy place this variety quite on a level with the other two, and you will be surprised to feel the weight of the three trusses of bloom sent you. We think you will agree that these are invaluable additions to the hardy ornamental spring-flowering plants for the shrubbery.—DICKSONS.

BAYCLIFFE, LYMM.

A CHESHIRE village is almost certain to be interesting. The county is noted for its dairying; it is therefore a county of green pastures. It is beautifully picturesque, fringed mainly by hills, and with wooded slopes frequently revealed. The pastoral charms of the district are delightful, and on the Lancashire side of the county there are many modern architectural features which, whilst not attempting to detract in any way from the fame of the quaint old county town of Chester, with its old world associations and its hoary antiquity, undoubtedly possess

surroundings, which the illustration here given will help to define and describe.

The house itself stands in a commanding position upon the hill-top of a splendidly undulated piece of country. My visit was paid on one of the later days of April. The phenomenal spring and the every-day sunshine of midsummer brilliancy and warmth secured foliage effects and a floral profusion which could not be seen in an ordinary season, for spring and early summer seem blended in the nature-wealth flung now from an open hand with freedom over everything. In weather like this, and in a place so rich in floral resources, who shall speak

drip into the pool and make tiny ripples over the surface of the waters. The chimes from the clock-tower of the church upon the hill float over the valley to remind one that the day hurries along with regular step and steady tread, though one is inclined to lose count of time in Arcadia.

Let us see then. Here along the front of the house, at our feet, are sturdy well-flowered plants of *Azalea mollis* in full flush of warm colour, and at the foot of the Ivy and the creepers which clothe the house we see the fresh healthy foliage of Japanese Roses pushing forward and mingling with the gay line of colour furnished by *Anemones* and other



View in the garden at Baycliffe Hall, Lymm. Engraved for THE GARDEN from a photograph sent by Mrs. Crossfield.

attractions to those whose quickened senses discern the touches of the finger of art, whether in the subtle line and curve of flower-draped border, or traced in stately lines in chiselled stone or fluted cornice. So it happens that on the borders nearing either of those two great Lancashire cities—Liverpool and Manchester—townsmen and merchant princes have laid the foundations of home, in bricks and mortar, on velvet turf and near shady woodlands, away from the noise and bustle of thronged streets and mill clatter.

Lymm, then, is a Cheshire hamlet placed thus between the town of Warrington and the city of Manchester, and Baycliffe is a beautifully conspicuous and conspicuously beautiful mansion in the midst of enchanting

rightly of the garden glory of an April day? But we must try to make effort as we stand on the broad terrace and take a look over the sloping verge of close-cut turf, over the velvety lawn to the borders filled with hardy herbaceous flowers and dotted about with specimen trees and groups of bright colour. Beyond and over the hedge line the eye rests upon the placid waters (reflecting blue sky and fleecy cloud) of a great lake stretching away far, far into the distance, a wooded walk on the one side and a margin fringed with rural beauty on the other. A sleepy herd of black cattle lazily saunter down the hill-side and wade knee-deep into the cool waters. They bend slowly and drink long, and when they lift their shaggy heads the cool drops

spring flowering bulbs. There are Daffodils everywhere — and such Daffodils! Amongst the most prominent are Emperor, Horsfieldi, Sir Watkin, and other well-known kinds, with such recently added varieties as the Glory of Leyden and Madame de Graaff. Floral surprises are everywhere — floral eccentricities nowhere. Here a bright blue line of Gentians; there an embankment of Iris. Groups of Trillium peep from beneath the protecting shade of the Cedars; over the rockwork Aubrietia flings a purple cloak and Alyssum decorates it with gold.

Along the borders are Primulas, from the simple Primrose of the meadows, on through the showy Sieboldi types and the various

gay members of the so large family. In beds, Roses, Peonies, and other more prominent features of the flower garden are kept within bounds; but there are bowers of Roses in suitable corners and about the slopes of the shrubberies, and kaleidoscopic splendour to right and left—everywhere.

Mrs. Crosfield evidently delights herself in her garden, and a look through an album of dainty photographs by Mrs. Ernest Crosfield reveals the fact that a love of flowers reigns supreme at Baycliffe.

I spoke a little while ago of floral surprises. Here, for instance, is an arrangement of Sweet Peas placed to secure a colour device that shall rival the splendour of a Japanese scroll. There see groups of Callas to secure foliage effects, and Asparagus stems, shooting up in a straight growth of succulent strength, but to show later a feathery grace that shall provide fitting finish for the nook needing this added charm to complete the idea.

In the kitchen garden the fruit trees show well for a good yield, and I was much interested in some remarkably vigorous Blackberries grown upon espaliers and showing signs for an abundant crop.

It is so delightful outside that one does not seem to care to venture "under glass," yet we must take a hurried peep to complete the survey. The fernery is very much to one's liking; the half hidden grotto seems so quiet and cool. The fresh green fronds of the Ferns, with the rich drapery of trailers and creepers, and the diverse forms of the Club Mosses give a splendid background to the foliage plants dotted here and there. The gay glance of Euphorbia one finds, too, flashed from a green hiding place, lending foothold for the spinous stalk and slender scarlet flower, just sufficient to emphasise a pleasing presence half concealed. In the conservatory there are fine plants of Lapageria and Heliotrope upon the walls, and in the Orchid house blooms rich and rare and in superb magnificence of their colour glory. In the greenhouse the same care and attention are manifest, and it is difficult to conceive a more charming residence or a more pleasurable garden resort than Baycliffe, which I have thus briefly tried in some measure to describe.

E. J. B.

TREES AND SHRUBS.

HYBRID SHRUBS.

Of some classes of shrubs, such as Roses, Rhododendrons, Azaleas, Spiræas, Philadelphus, Lilacs, Thorns, and Weigelas, there have been raised hybrids innumerable, but with the exception of these and a few others there are not many shrubs of recognised hybrid origin, though it is very probable that some others which are now looked upon as forms or varieties of some particular species have been obtained in this way. One of the finest of all hybrid or reputed hybrid shrubs is

BERBERIS STENOPHYLLA, which has been eulogised and described over and over again in most horticultural publications. Still, there is a good deal of mystery about its origin, but it is generally

regarded as a hybrid between *B. Darwini* and the little *B. empetrifolia*, both natives of the southern portion of South America. Though questions as to the origin of this particular Barberry have from time to time appeared in THE GARDEN, the nearest approach to an elucidation of the matter was on November 23, 1889, when a correspondent from New Zealand, in answer to a question some time previously in THE GARDEN, stated that *B. stenophylla* was raised somewhere about the year 1865 at the nurseries of Messrs. Fisher and Holmes at Sheffield. Doubts have been expressed as to its parentage, particularly owing to the fact that it is a more vigorous growing plant than either *B. Darwini* or *B. empetrifolia*, but personally I am inclined to accept this hybrid origin, for having raised a batch of seedlings from *B. stenophylla* while the bulk of the progeny resembled the parent plant, there were others that showed an unmistakable leaning towards *B. Darwini*, and others as near *B. empetrifolia*. Whatever differences of opinion may exist as to its origin, there can be none as to the great beauty of the Barberry.

RIBES GORDONIANUM is another shrub of whose origin not much is known, yet there is little if any doubt that it is a hybrid between *Ribes sanguineum* and *R. aureum*. It is a very distinct flowering Currant, and in any selection of the best varieties it must have a place. The colour of the flowers is a kind of orange-red. It is equally free growing with the other forms.

CYTISUS PRECOX is the sulphur-coloured Broom which has attracted a good deal of attention within the last ten or a dozen years. That this is a hybrid, as supposed, between the common white Broom (*Cytisus albus*) and the golden-flowered *C. purgans* there can be no doubt, for both in habit and colour of the flower it is about midway between the two. Like most of its relatives, this Broom produces seeds freely, but plants raised in this way are usually nothing but the ordinary white Spanish Broom. It is certainly a very beautiful and distinct spring-flowering shrub.

MAGNOLIA SOULANGEANA is a tree rather than a shrub, but in this limited list of hybrids, a few words may be spared it. It is in flower, habit of growth and season of blooming about midway between the Yulan (*Magnolia conspicua*) and the Japanese *M. obovata* or *purpurea*. *M. Soulangeana* is, at all events, a very old plant in gardens, and according to Loudon "was raised at Fromont, near Paris, from seeds of a plant of *M. conspicua*, which stood near one of *M. purpurea* in front of the chateau of M. Soulangé-Bodin, the flowers of the former of which had been accidentally fecundated by the pollen of the latter." Owing to the fact that *M. Soulangeana* does not flower till a few days after *M. conspicua*, it sometimes escapes the frosts which prove so fatal to the spotless blossoms of the Yulan.

FORSYTHIA INTERMEDIA is one of M. Lemoine's hybrids between the rambling *F. suspensa* and the more bushy *F. viridissima*. It partakes of the characters of both parents, and as the Forsythias are such beautiful and popular shrubs, it will, no doubt, in time become more generally grown.

HYPERICUM MOSERIANUM is a very pretty St. John's Wort raised by M. Moser, of Versailles, from the Japanese *Hypericum patulum* fertilised by the pollen of the European Rose of Sharon (*H. calycinum*). The result is a very desirable shrub, which will bloom throughout the summer months. It has only been before the public a few years, but has in that time become very popular. It can scarcely be regarded as thoroughly hardy in all districts.

ESCALLONIA EXONIENSIS, upon which an award of merit was bestowed on July 7, 1891, was described as a hybrid form, but the parentage was not given. It is certainly a very pretty Escallonia of rather compact habit, with deep green leaves and a profusion of bloom. The tube of the flower is pink, while the expanded portion is of a paler hue.

Azaleas have been so crossed and intercrossed with each other, that in some cases at least it is difficult to decide on the original forms. The different species that have contributed to the magnificent hybrids that we now possess are

the North American *A. nudiflora* and *A. calendulacea*, *A. pontica* from the Black Sea region, the Chinese *A. mollis*, and for late-blooming forms *A. viscosa* and *A. occidentalis*. One of the most interesting hybrid Azaleas that we have is, however, of a totally different stamp from those commonly grown. This is

AZALEA ODORATA, a plant long cultivated in gardens, and said by Loudon to be a hybrid between *Rhododendron ponticum* and some Azalea with fragrant blossoms, and the general appearance of the plant would suggest that such was its origin. There is a good deal of difference in the individual plants of this, not only in the colour of the blossoms, but also in the way the leaves are retained during the winter, some individuals being nearly, if not quite, deciduous and others almost evergreen. The flowers are in some cases nearly white, but the majority are of various shades of mauve and mauve-pink, deepening to lilac-purple. The readiness with which the various *Rhododendrons* hybridise with each other is shown in the vast number of varieties that we now have in our gardens, and much the same remarks will apply to several other classes of shrubs.

Before leaving the subject it may be noted the stimulus that was given to raising hybrid forms of *Philadelphus* by the introduction of the little *P. microphyllus*, a native of New Mexico and adjacent States, which was first grown here in 1883. Apart from its small growth and great profusion of bloom, a very noticeable feature in connection with this *Philadelphus* is the pleasing fragrance of its flowers, very unlike the heavy smell of the European Mock Orange. *P. microphyllus* seems to have transmitted this fragrance to its progeny, for both *Lemoinei* and *Lemoinei erectus* hybrids between this kind and the common *P. coronarius* are agreeably scented, and the same feature is claimed for the two new varieties, *Boule d'Argent* and *Gerbe de Neige*, announced for distribution this year.

All of the above mentioned subjects have been regarded from a flowering point of view, but that a great change can be effected in the fruits by a persistent course of hybridising and selection is well shown in the numerous *Pernettyas* that have originated with Mr. Davis, Hillsborough, Co. Down, Ireland. Though commencing with the typical red-berried kind, we have now varieties whose fruits range in colour from white to almost black. T.

Rubus deliciosus is a valuable shrub in bloom now. We have noticed it on more than one occasion lately, and although so early, it is in full bloom. One usually finds it grown against a wall where a plentiful profusion of flowers is borne, but it is also very charming as a bush, the stems having a graceful aspect, suggesting somewhat the common Black Currant both in growth and leafage. *R. deliciosus* is one of the most beautiful hardy shrubs that adorn English gardens, and is smothered now with pure white flowers individually about the size of those of the Dog Rose, like them in appearance, and deliciously fragrant.

— Very distinct is this *Rubus* from the ordinary type of Bramble, not only in habit, but in the size and beauty of its flowers. It has erect-growing, branching stems, without spines and from 3 feet to 6 feet high, but stout enough to need no support. The leaves are five-lobed, wrinkled, of a bright green, and toothed at the margin. The flowers, which are borne at the ends of short shoots on the stems of the previous year, are 2 inches in diameter and of the purest white. Although known to botanists for over fifty years—Loudon mentions it in his "Encyclopædia of Trees and Shrubs"—it was not until about twenty years ago that it was introduced. It is a native of the Rocky Mountains, where it occurs at high altitudes. It is perfectly hardy in this country,

and deserves to be widely grown for the beauty and profusion of flowers that are borne during the month of May. It is not a plant that can be propagated very readily, but I have obtained several plants this spring from layers made in the summer of 1891. I believe that it may also be increased by burying the points of the shoots. Professor Bailey says the seeds require two years to germinate.—B.

Solanum crispum, or the Potato tree, as it is popularly called, is flowering on a wall in the Royal Gardens, Kew. It is very distinct and attractive, and needs a wall, we should think, in such a locality, although in the southern counties it will succeed well in the open, where it forms a handsome dwarf tree, rising to a height of upwards of 15 feet when in an especially favoured spot. The flowers are produced in clusters and of a clear blue colour, standing out conspicuously against the leafage. When grown against a wall it is necessary to prune every autumn, but not as a bush. In *THE GARDEN*, May 31, 1890, Mr. T. Smith, of Newry, draws attention to this fine species, mentioning that it is quite hardy as a bush at Newry, one plant being quite 10 feet across, its lower branches resting on the ground, a densely flowered mass of pale blue and yellow-centred blooms. It is never seen so well flowered as when fully exposed.

A few good variegated shrubs and trees.—The beauty of tree nurseries at this season of the year is enhanced by the finely toned leafage of the best variegated kinds. When at the nursery of Messrs. Veitch and Sons a few days ago, the following kinds were of note. One of the best fine-leafed trees at this season of the year is *Acer platanoides* Schwedleri, the crimson-chocolate shade of the new leaves lighting up the garden with colour; it has a fine effect in the distance. *A. pseudo-platanus* Leopoldi is a finely variegated variety. The variegation of the leaves is good, not blotchy or spotty, as in the case of many things, which are an eyesore rather than an attraction in the garden. The leaves of *A. p. Leopoldi* are green, relieved with yellowish white, and a rich contrast is afforded by the self golden yellow foliage of the variety *lutescens*. Deeply coloured is the foliage of the purple-leaved Nut (*Corylus Avellana purpurea*), which is of a better colour than that of the now common *Prunus Pissardi*. A note may also be made of *Spiræa opulifolia aurea*, a shrub of much beauty, the leaves of a rich golden yellow colour and very bright at this season of the year. The Japanese Maples in variety are remarkably showy, and deserve more attention than they receive in English gardens.

Grafting Lilacs.—It is very disappointing, after having grown the newer hybrids into good-sized bushes, to find when they come into bloom that the greater portion of the bush will be the common Lilac. This is just what I have noticed to-day in the case of several of the choicer kinds about the pleasure grounds. No doubt I shall be met with the retort that the suckers or shoots from the stock should have been promptly removed before they had time to rob the scion; but this I did not bargain for, not knowing the plants had been grafted. Grafting, no doubt, is a quick and ready mode of increase, but it is not the best method to pursue either for the well-being or longevity of any shrub or tree which may also be increased by cuttings or layers.—A. Y.

Piptanthus nepalensis.—This cannot be regarded as thoroughly hardy in all parts of England, and it is consequently often trained to a wall, in which position it is now flowering freely, and from the showy character of its golden blossoms it forms a bright and effective feature. It is commonly known as the Nepaul Laburnum, which name conveys a very good idea of its general appearance, but the individual flowers are larger, and the trifoliate foliage is of a very deep green tint. In mild winters it is often almost evergreen in character, while if the weather is severe it becomes quite deciduous. Where this *Piptanthus* is not hardy enough to be planted in the open it should not be trained to low walls, as it is such a vigorous

grower, that continual cutting will be necessary to keep it within bounds, and consequently very few, if any, flowers will be produced. On a wall 10 feet or 12 feet high it will, however, flower freely, that is if given a southern aspect. The Nepaul Laburnum is very prolific of names, some half-a-dozen in all, but the best known beside that of *Piptanthus* is *Thermopsis nepalensis*.—H. P.

Mespilus Smithi, or *M. grandiflora*, as it is sometimes called, is a tree well worth making a note of, although it is not very common in English gardens. A specimen of it is in full bloom at Kew, and the pure white flowers are in fine contrast to the dark green abundant leafage. *M. Smithi* is one of the best of lawn trees, the full rounded head presenting a fine mass of foliage, while the graceful branches touch the turf. It is quite as beautiful as the common Medlar, picturesque in aspect, free flowering, and in every way a tree to plant on the outskirts of the lawn. The earliness of the season accounts for its being in bloom before April was over, as the middle of the present month is the usual time for flowering.

Neviusia alabamensis.—Eleven years ago when first introduced into this country great expectations were formed of this *Neviusia*, upon which the popular name of the Alabama Snow Wreath was bestowed. It proved, however, to be a disappointing shrub, for though the flowers were freely produced, they were by no means of the whiteness usually associated with snow. This *Neviusia* forms a freely branched bush, whose slender shoots are furnished with oblong shaped leaves of a pale green tint, while the flowers are freely borne towards the end of the branches. The most conspicuous part of the inflorescence is the crowd of stamens, a good deal like the cluster in the interior of a Myrtle flower, but of a greenish white hue. One of the first plants to bloom in this country was on a wall at Kew, and the same specimen is flowering very freely this year; in fact, it is, I think, more attractive than I ever remember to have seen it before. Even at its best this *Neviusia* will not compare with many other of our hardy shrubs, though in the drier and brighter atmosphere of its American home it is said to be very attractive.—H. P.

Distinct form of Maule's Pyrus.—In his most interesting notes from Baden-Baden, which appear from time to time in *THE GARDEN*, M. Max Leichtlin once (now about nine years ago) alluded to the beauty of the large deep crimson flowers of *Pyrus Maulei* *superba*. Since then, or rather for the last three or four years, I have had the pleasure of seeing this variety in bloom, and it is undoubtedly a very distinct and handsome form. Instead of the orange-red colour of the typical *Pyrus Maulei*, the flowers of the variety *superba* are of a rich crimson tint, a good deal in the way of some of the deep tinted forms of *Pyrus japonica*. It is somewhat singular that we have so many distinct varieties of this last, while Maule's *Pyrus*, which seeds freely, has up to the present shown very little sign of variability, as if raised in quantity all the progeny have the orange-red flowers, often varying, it is true, slightly in depth of tint. I do not see that the variety *superba* is catalogued by any of our nurserymen, so that it is presumably very scarce at present.—T.

Kerria japonica.—The double form of this plant is often seen in gardens and it makes a very striking object at this time of the year, when it is usually laden with its bright yellow or orange-coloured blossoms; but, to my thinking, the less common single form is far superior in beauty, and should be grown at least quite as plentifully as the other. A few weeks ago I saw a very fine plant of the single kind on a cottage wall, where it made quite a picture, and the deeper colour was very noticeable when seen in the mass, as this was. The habit, too, was less stiff and upright, while another advantage it has over the double form is that it flowers for a much longer season. Either kind, however, is worthy of a place in any garden, and the cultivation is so easy, that everyone who has a sunny aspect with a rather poor

soil could grow both to perfection. Cuttings of the young shoots taken now and treated in the ordinary way, that is, placed under glass in a close frame or under a bell-glass, will strike freely, or the plant may be increased by division.—J. C. TALLACK.

Weigela Looysmani aurea.—The list of golden-leaved shrubs that we have now in our gardens is a pretty extensive one, but few are so richly tinted as this *Weigela*, either at the present season or after full exposure to the summer's sun. Notwithstanding the brightness of its colouring, the leaves, even in the most exposed positions, do not burn during very bright weather, as those of many shrubs of this class do, especially as the season advances. It is principally for the sake of its foliage that this *Weigela* merits recognition, as from a flowering point of view it is not equal to several other forms, the blooms of this being of a pale pinkish colour. *W. Looysmani aurea* is not so vigorous as many varieties; still, under favourable conditions it will soon form an effective bush.

Rhododendron Ascot Brilliant is a variety with flowers of exceptionally deep colour. Each bloom is of the richest crimson, and like that of *R. Thomsonianum* both in shape and colour, short in the tube, and widely expanded at the mouth. It is remarkably free, judging by a small specimen at Syon House which is covered with bloom.

Pyrus (Cydonia) japonica.—The Apple-blossom coloured variety of *Pyrus japonica* has been glorious this year, long shoots being completely wreathed in bloom, and many of the spurs, long enough for cutting, have also been charming. I find this plant more rapid growing, not so bushy, and, if possible, more free-flowering than the scarlet kind, and this without any special advantages of soil or position, as it is growing on a high west wall and with its roots in a gravel path with no border or prepared soil intervening. During the past three years it has gained about 6 feet in height and is now clothing its allotted space on the wall to about 9 feet high and is still rapidly growing.—J. C. T.

SHORT NOTES.—TREES AND SHRUBS.

Eriobotrya japonica (*J. Berrie*).—The fruits you refer to I should think are those of the Loquat or Japanese Medlar. Some years ago I saw and tasted some fruits of the Loquat that were ripened in Malta, and I believe they are also brought from the south of France.—W. H. G.

Azalea Vaseyi is a charming American species, which we noticed in bloom a few days ago in the nursery of Messrs. J. Veitch and Sons, Coombe Wood. The shrub is more graceful than the *A. mollis* forms, and the flowers are of tender colour—a soft shade of rose-lilac, the buds of a deeper tint, set off by the light green leaves.

The Garland Flower (*Daphne encorurum*).—Herbert Thompson sends me a fine bunch of this beautiful sweet-scented flower, asking its name and if it can be propagated by cuttings. The name I give above, and to me it is one of the handsomest border or rock plants; but I do not think you will be successful with cuttings. I have generally layered this plant after flowering is over.—G.

Wistaria sinensis alba.—It is curious that a really good plant, vigorous, hardy and beautiful either in or out of flower, should remain uncommon long after its introduction. The white variety of *Wistaria sinensis* is a case in point. It is in bloom on a wall of one of the plant houses in the nursery of Messrs. J. Veitch and Sons at Coombe Wood. The flowers are of the purest white, individually larger than those of the type and produced in racemes of equal length. This fine climber is, in spite of its beauty, rare, although by no means new, but it deserves a place in every garden.

The Medlar-leaved Thorn (*Crataegus mespilifolia*), with leaves not unlike those of the common Medlar, is a pleasing tree when in full bloom, as we noticed it a few days ago at Kew. It is of distinct character and very free blooming, the flowers being white and produced in a dense

cluster, diffusing also the characteristic Hawthorn fragrance. The bark is of a silvery colour, and the whole aspect of the tree distinct and attractive.

ORCHIDS.

GALEANDRAS.

A FRIEND, writing to me lately, complained that the buds of his *Galeandra Devoniana* appeared to be dead, and that he was afraid the plant would not flower this season. This I think very probable. Some years ago I used to grow *G. Baueri* on blocks of wood, but the plants suffered from red spider every year. Although this was but a temporary eyesore, seeing that the plants cast their leaves every year, yet they annually became weaker, which, I supposed, was owing to the attacks of the spider. I then adopted pot and basket culture for them, and I should advise my friends to grow these plants in somewhat small earthenware hanging pans or baskets, and as they like an abundance of water to their roots as well as overhead during the growing season, these pans must be well drained in order to keep everything sweet and fresh about them. Most of the species like a good heat when growing, and I like to place them in an East Indian house, and to winter them in the *Cattleya* house with the *Lælia purpurata*. I have found that, although the *Galeandras* have somewhat stout pseudo-bulbs, they do not like to be dried off, and I think my friend made a great mistake when he put his plant of *G. Devoniana* to rest for the winter with *Odontoglossum crispum*. *G. Devoniana*, I know, comes from the Rio Negro region, for when I was with the Messrs. Rollisson, of Tooting, we received some few plants whenever we had *C. superba* and *C. Eldorado* sent home from that district. Therefore, I do not think I am wrong in saying the temperature was too low for it, and this coupled with the dampness has caused the eyes to rot, so I fear that not only will the plant be flowerless this season, but that it will die. For soil, a mixture of chopped *Sphagnum* Moss and good brown peat fibre should be used. I have found, too, that the use of a few medium sized pieces of sandstone in the soil was attended with excellent results. The plants require to be shaded when the sun is shining strongly. The following are a few of the best kinds:—

G. DEVONTIANA.—This, the largest flowered and the most beautiful species known, was first found upwards of fifty years ago, but it remained scarce for some years, and indeed at the present time it is still rare. When in flower there is no more beautiful plant, but it does not appear to live long in cultivation, yet from its free growth I cannot see why any difficulty should arise with it, unless it is wintered too cool and too wet. The plants I received at Tooting were some of them growing upon the branches of trees, and some of them appeared to have been collected upon the ground. These latter had been growing amongst leaf-mould and other rich vegetable refuse, having stems some 3 feet and 4 feet or more in length. I noticed, however, that these long growths had not bloomed so freely as those of the plants grown upon the branches of trees; in fact I never flowered one of them in the nursery, but I did those upon the tree stems. The growths that flowered most freely were about 2 feet in length. Each bloom is funnel-shaped and several inches across. Sometimes only three flowers are produced together, but upon some occasions seven flowers were produced upon one spike; the sepals and petals are nearly equal, and they vary much in colour, some being of a light greenish brown, and others of a purplish brown, sometimes with a marginal border of green, others without,

the helmet-shaped lip being white, having the front portion flushed with bright deep rose and streaked with purple. It blooms about July, and the flowers last for some time in good condition.

G. BAUERI is a much smaller growing plant, and the flowers as well as being smaller are also far less beautiful. The stems grow from 1 foot to 18 inches in length, and from the apex springs the many-flowered raceme, which is drooping. Each bloom measures nearly 2 inches across; sepals and petals yellowish brown; the lip is also yellow in the throat, but in the front pale yellow, streaked with purple. These flowers vary much in colour.

G. BATEMANI.—This is a more beautiful plant than the above, and is well worth a place in every garden. It has short conical pseudo-bulbs, but the spike is somewhat lax-flowered, the sepals and petals yellowish tinged with green, lip large, throat yellow, the front lobe deep rosy purple, with narrow marginal border of white.

Besides the above there are several other species, which from time to time have appeared in cultivation, such as *G. Harveyana*, *G. dives*, *G. nivalis*, *G. cristata*, and others, but the three kinds named above I have grown largely.

WILLIAM HUGH GOWER.

Cattleyas at Cheam Park.—On the first of the month I visited this place. The *Cattleyas*, *Odontoglossums*, *Dendrobiums*, *Lælias* and *Cypripediums*, arranged above and amongst Ferns and fine-foliaged plants, had a most charming effect. Among the *Cattleyas* I noted *C. Mendei* in various forms and many superb varieties, some with flowers nearly 8 inches across, having pure white sepals and petals and a rich deep magenta lip, beautifully frilled; others with sepals and petals light pink and beautifully frilled lips, which vary in the intensity of the markings of the front lobe. *C. Mossii* was also to be seen in variety, some of the forms being excellent both in size and colour. *Cattleya Lawrenceana*, with its rich rosy purple lip, which it appears can only be produced by hand-painting, and the soft, satiny, rose-coloured flowers of *C. Skinneri* were also noticeable. These were again set off by a well-flowered specimen of *Lælia purpurata* with a large very dark lip, and another equally well-flowered plant of a lighter variety, and a very fair variety of *Lælia elegans*. The show of *Cattleyas* and *Lælias* will be magnificent for a long time. Together with these plants were *Odontoglossum citrosimum*, with its sweet-scented blossoms, *Dendrobium chrysotoxum* and the marvellously beautiful *D. thyrsiflorum*, making in all one of the most effective displays I have seen for a long time.

—W. H. GOWER.

Orchids from Rawtenstall.—Some fine flowers come to hand from Mr. G. W. Law-Schofield. Amongst them is a flower of *Dendrobium Dalhousianum* having a double lip, the sepals and petals all in duplicate, saving one of the lateral sepals. I do not think this any improvement upon the normal form of this fine species, and I am told the plants of this variety have flowered very freely this season. I shall be glad to know if this double-flowered form is permanent. There is also a flower of *Odontoglossum crispum* of a very good type, but it does not appear to call for any special comment. *Miltonia vexillaria*, a white or whitish flower, which, however, I cannot identify, as it was too shrivelled upon arrival, and a very nice form of *Odontoglossum polyanthum* were also included. This last plant I am very glad to see coming to the front.—W. H. GOWER.

Vanda Parishii Marriottiana.—"Orchis" sends me a very nicely coloured flower of this variety. He says his plant is bearing a spike with seven flowers. This is a very peculiar Burmese Orchid, being dwarf in habit, and producing large and thick fleshy leaves. The flowers of the typical plant are greenish yellow profusely spotted with brown, the small lip being of a violet-purple hue. In the form now before me the whole flower is of a bright and rich brownish magenta, the lip violet-

magenta. This flower is quite destitute of perfume, whilst those of the type are highly fragrant. This plant requires the warmest temperature, and it will not winter with *Vandas* of the tricolor section; indeed, it thrives best when treated in the same manner as the *Phalænopsis*.—W. H. G.

Cypripedium Lawrenceanum.—"B. J. B." sends me a magnificent form of this species, the flowers being large and very highly coloured, dorsal sepal very broad, wholly white, having numerous dark purple veins along it, and a tinge of bright claret colour running across it about half way up. The lip also is large and of a brownish purple, the lower part yellowish, but the petals appear to be normal in colour. "B. J. B." should increase this fine form.—W. H. G.

Phaius Wallichii var. Manni.—In that useful section of *Phaius* to which *P. grandifolius*, *P. Wallichii*, &c., belong the variety here named is undoubtedly the most valuable, its flowers being both larger and handsomer than those of any other form. It was introduced to Kew about six years ago, and was at first given specific rank, being named after Mr. Gustav Mann, who was the first to find it in Assam. It is figured in the *Botanical Magazine*, t. 7023. Unfortunately, it has remained up to the present very rare. The flowers are borne on a stout erect scape 2 feet or more in height, each one being 5 inches or 6 inches across. The sepals and petals are of a rich reddish somewhat tawny brown colour, being lanceolate and pointed. The lip, which, as in *P. grandifolius*, is curled round the column and thereby made to assume a tubular shape, is yellow at the base, the upper half changing to red, the reflexed apex white, stained with rose and traversed by yellow lines. It should be placed in the stove or intermediate house when growing, but kept drier and cooler during winter.—B.

Odontoglossum crispum.—A magnificent form of this plant comes to hand from M. Linden, of Brussels, reminding one much of the variety known as *Veitchianum* now in the possession of Baron Schroeder. It is, however, better than that form; the sepals and petals are broad and full, the latter prettily waved at the edges; the ground colour is white, but very little of this is to be seen, being heavily blotched and spotted with brownish crimson, outside of which comes a shade of rosy purple. The large lip is flat and pure white, boldly spotted and blotched with crimson, the disc rich yellow. It is by far the grandest variety of this species that has come under my notice.—W. H. G.

Oncidium ampliatus.—Some remarkably fine specimens of this New World Orchid are now to be seen in collections near London, for the introduction of which Orchid lovers are indebted to Messrs. Sander and Co., of St. Albans. The species is widely spread over tropical central America, and reaches across also to the West Indies. According to Messrs. Veitch it first flowered in this country in 1835, having been discovered three years previously by Cuming in Costa Rica. The recently imported pieces have large wrinkled pseudo-bulbs, 3 inches to 4 inches high and as much across, being green, spotted with purple-brown. The leaves, which are in pairs on the pseudo-bulbs, are remarkable for their large size and leathery texture; they are narrow, oblong, and in some cases about 15 inches in length. The flower spikes are a yard long and branched, with numerous flowers at the upper part. The most conspicuous feature of the bloom is the large spreading lip, which is of a clear canary-yellow and measures over an inch across. The petals are of the same colour, but only one-sixth the size, whilst the sepals are smaller still, being ladle-shaped, pale yellow, spotted with chestnut-brown. The species is not found at high elevations, and, as may be inferred from the regions of which it is a native, requires purely tropical treatment under cultivation.—B.

Lælia purpurata Russelliana comes to me from the Rev. Mr. Handley's collection at Bath. This, Mr. Kerslake, the gardener, tells me was named *Lælia pallida rosea*. If he looks in Williams' "Orchid Album," t. 269, he will find the

same plant under the above recognised name, saving that in the figure the throat is pale citron-yellow, and in the flower before me it is white. It is a very handsome variety, measuring upwards of 7 inches across, the sepals and petals being pure white, the lip large and spreading. The front lobe is pure rosy lilac, veined with a somewhat deeper colour. Mr. Kerslake tells me it came to them in a mass of *Lælia purpurata*, from which he has separated it. This plant used to be grown in Mr. Tautz's collection when he resided at Shepherd's Bush. I have also seen this variety in large numbers and flowering in great profusion at Rosefield, the residence of Mr. De B. Crawshay at Sevenoaks. —G.

Cypripedium superbiens.—"B. J. B." sends what he considers a good variety of this, but I cannot see much difference in any of the plants

Denny, The Gardens, Down House, Blandford. The flowers now before me have a blotch of rose at the base of the lip, but it does not come far enough up the throat to make it the variety *oculata*, which is, I think, very rare. —G.

Dendrobium cheltenhamense.—Respecting this plant, Mr. Cypher says that it was raised by himself between *D. luteolum* and *D. aureum*, the growth being exactly intermediate. The blooms last as long as do those of *D. luteolum*. Upon this species it is a very decided improvement both in size and colour. —W.

Lycaste Skinneri alba.—G. Salmon sends a beautifully formed flower of this plant for an opinion. It is not the largest-flowered form I have seen of it, for I measured blooms upon one occasion quite 8 inches across. Those flowers, however, were very narrow in the sepals. In the bloom now before me, although it measures only 6 inches across, the sepals



Vinca rosea.

of this kind which are in our gardens. The difference seen at any time I think must be attributed to the manner in which the plants have been grown. The credit of introducing this is due to Messrs. Rollisson, of Tooting, and the next time it was received by Messrs. Veitch from Lobb, and from these two plants the whole stock in Europe would appear to have sprung; the plant used to be best known in gardens by the name of *C. Veitchianum*. It is a showy flower, the dorsal sepals being large, white, streaked with green, the petals of the same colour thickly spotted with blackish purple and margined with dark hairs, the lip large, brownish purple. I have often thought that the plant is a natural hybrid, but what the parents are I am unable to say. It requires the warmest house to do it well. —W. H. G.

SHORT NOTES.—ORCHIDS.

Cattleya Skinneri alba.—Flowers of a good variety of this charming plant come to hand from Mr.

are very broad and of the purest white; lip small and of a soft primrose-yellow, which, I think, is unusual. —H.

Odontoglossum crispum Stevensi (G. B.).—The flowers sent are exactly like those of the plant figured under the above name. The sepals and petals are large, the latter being toothed and undulated, white, profusely spotted with cinnamon. The lip is of the same colour, with the addition of a yellow disc. It is a very handsome form. —W.

Cattleya Mendeli.—A fine flower of a superb variety of this plant comes from Mr. Kerslake, who has charge of the Rev. E. Handley's fine collection at Bath. It measures nearly 8 inches across, the sepals and petals pure white, the latter very broad, undulated and toothed at the margin. The front lobe is of a rich rosy magenta, and down this runs a stripe of pure white, but it is not quite central, and this detracts from the effect. If it were quite central it would be very attractive. I shall be glad to see a flower another year to see if the stripe is more central. —W. H. G.

STOVE AND GREENHOUSE.

THE VINCAS.

THIS is not by any means a large class of plants (as it pertains to the stove species), but the three varieties that have been under cultivation from time to time here and there amongst hothouse plants are each really beautiful and well deserving of more extended notice than they receive. They escape attention, or, in other words, do not commend themselves, from the simple reason that more often than not they are badly managed during growth, whilst they are not the easiest of plants to keep safely through the winter season. I have seen plants of these Vincas trained upon trellises, a mode of culture that is simply ridiculous and out of all character with their requirements. The growths in such cases are tied in at intervals, and but rarely are the shoots increased in numbers, whilst the flowers upon these long shoots are never so fine as they should be. It is no trouble whatever to flower the plants continuously through the summer. Then having done good service in this way, towards the autumn the shoots with flowers upon them can be cut for other uses, and thus prove of good service. The most useful perhaps of the three varieties under cultivation is *V. alba oculata*; its pure white flowers, each with a bright rosy eye, are very showy and attractive, and freely produced under good cultivation. Each flower will be as large as a half-crown in the usual way, but with special attention I have had them as large as a crown-piece with two and three upon each shoot at the same time. *V. alba* is a pure white variety, with the faintest trace of pale yellowish green frequently seen in the eye; the foliage is also of a paler shade than in either of the other two kinds, whilst the growth is not, on the whole, so vigorous. This is quite in contrast with some flowering plants in this respect; the white *Lapageria*, for instance, is frequently a more vigorous grower than the red variety. *V. rosea* has pale rose-coloured flowers with a darker shade of the same colour at the eye; this is as vigorous a grower as *V. alba oculata*, with darker and somewhat more hirsute foliage. Each of these varieties is well worthy of cultivation, being quite distinct one from the other. Those who have light houses at their disposal with plenty of room therein may do far worse than grow these free-flowering plants. In the winter season they require but little room, for by semi-pruning late in the autumn a considerable reduction can be made in this direction. As exhibition plants they are designated by some judges as soft-wooded and easily grown subjects. In some respects this may be true, but as compared even with *Allamandas*, they take quite as much skill and attention to grow them well.

CULTURAL NOTES.

Propagation is easily effected either by seeds or cuttings; the former are catalogued in at least two varieties. The present is about the best time for striking cuttings or for purchasing young plants to grow on. It is always advisable to have a few young plants on hand, as the old ones have a disposition to die off after a few years' active growth. This failing, however, is quite immaterial when the younger plants can be so readily grown on to supply their place. My plan has been to prune back into the hard wood somewhat in the same way as when dealing with good-sized plants of the show or fancy *Pelargoniums*. In this way a good foundation can be laid for a bushy plant; those grown upon trellises I should imagine are never so treated

As soon as the young shoots are 3 inches or 4 inches in length, pinching should commence, taking all the stronger ones first. This will increase the vigour of the weaker ones, which in their turn should be subjected to the same process. This stopping of the shoots should be persisted in until a good bushy plant is the result, and it may be done after each shoot has made two pairs of leaves. After a few weeks of this treatment it will be surprising what good results will have been obtained. Non-attention to it and only a few shoots will push away, with the result that the plants are considered of bad habit. I believe more Vincas have been discarded from this cause than any other. The last stopping should be done all at once, and in six weeks' time the first flowers will be opening. During the growth one additional shift, if not two, should be given. The first one will be by considerably reducing the old ball in the same way as Pelargoniums are treated in the autumn. The soil best suited to these Vincas is light loam and leaf-mould, the latter being worked through a sieve; some manure from a spent Mushroom bed would be an assistance in after shifts, sand in any case being used freely. The potting need not be done so firmly as in the case of permanent shifts. As the plants get into free growth with good root-action, they will take water very freely. In this respect also mistakes are made, and they can be proved to anyone's satisfaction by treating one plant to a dry course and another to the opposite. That under the latter will develop large and bold flowers, which are retained much longer, whilst the former will have small flowers that drop much sooner. When the plants are in bloom, close attention must be given to the removal of fading blossoms. During the flowering period liquid manure may be given at each other watering. As soon as the blooming season is over, the plants should be kept fairly dry until starting time comes round again. Insects rarely give any trouble.

GROWER.

The *Hypoxis* are an interesting class of plants. They make the Cape house at Kew bright with their yellow flowers, and two kinds are in bloom at present, *H. obtusa* and *H. stellata lutea*. One does not often find this class of plants grown in English gardens, but there is much beauty in the distinct, handsome flowers. They belong to the Amaryllideæ order, and are for the most part natives of the Cape of Good Hope. *H. obtusa* was introduced as far back as 1816 from the Cape and bears rich yellow flowers, several together on the same stem, the stamens orange. The leaves are green and edged with short hairs, which give to them a characteristic appearance. *H. stellata* was first introduced from the Cape in 1752, and the variety *lutea*, as the name suggests, has yellow flowers, the segments narrow, and the leaves slender and quite Grass-like in character. It is a decidedly pleasing plant, quite distinct and well worth growing for the greenhouse. The culture of the *Hypoxis* is very similar to that of the Amaryllids. They require to be kept dry when at rest, but during the growing season the soil should be maintained in a moderately moist condition.

Spiræa astilboides.—For flowering in pots at this time of the year, being brought on by steady forcing, this variety is very useful. Having tried it myself for earlier forcing at the outset of the season, I found there was a tendency towards elongated growth both in foliage and flowering spikes, and taken altogether it did not commend itself then, but about now, with less need of artificial heat to excite growth, it is undoubtedly a plant of the highest order. Good strong clumps will throw up numbers of spikes; these when fully developed are nearly or quite a foot in length.

Like others of this section, it is a moisture-loving plant and should have liberal treatment. It is perfectly hardy and flowers well in the herbaceous border every year, thriving better in a light, moist soil than in a heavy retentive one. I have had it outside for some years in a most satisfactory condition. This *Spiræa* was exhibited in very fine condition by Messrs. J. Veitch and Sons at the last Regent's Park show; being set up in large masses a fine display was made. The plants were well clothed with foliage, the flower-spikes unusually vigorous, and the colour of snowy whiteness. It is quite a change from the old Japanese variety (*S. japonica*), and should receive more attention than it hitherto has done. It has taken some years to grow into favour, but its culture is not likely to recede, as it is shown finer and finer every year.—H.

A rare *Amorophallus* in flower now at Kew for the first time is *A. oncophyllus*. A splendid collection of such plants is to be seen at Kew, and many of them are beautiful, although not a few are of botanical interest only. This is attractive, but its evil smell is certainly not in favour of its general cultivation in stoves, the plant when in bloom exhaling an odour like guano, pervading the whole house. The spathe is richly marked. It is blotched handsomely with chocolate, and the spadix is creamy white with just a suspicion of pink in it, standing up boldly from the encircling spathe. The stem is finely variegated also. If it were not for its unpleasant odour, this species would be worth growing for the fine markings on spathe and stem.

Spiræa confusa.—Although this species of the shrubby section is fairly well known, it does not receive that recognition it should do as an early flowering plant in pots. From the beginning of March onwards throughout April it may be easily flowered, but it should not be brought on in too much heat. The treatment that is accorded to pot Roses in forcing them will just about suit this *Spiræa*. Its pure white flowers, produced in Verbena-like trusses after a short spring growth upon well-ripened wood of the previous year, are so freely developed as to make it a very attractive plant. It is a fitting companion to the good old *Deutzia gracilis*, totally distinct from it, but as easily managed in every respect, thriving well under similar conditions. It is effective either as small dwarf bushes or as taller ones. Some admirable examples in baskets were shown by Messrs. J. Veitch and Sons in their group at the recent botanic show, Regent's Park. These were dwarf plants and freely flowered.—H.

SHORT NOTES.—STOVE AND GREENHOUSE.

Epiphyllum Gaertneri is one of the finest of the Epiphyllums. The flowers are brilliant orange-scarlet in colour, the segments pointed, and borne with great freedom. It is quite one of the best of its class, but not so rich in colour as *E. Makoyanum*, of which a note was made in a recent issue of THE GARDEN.

Gomphia olivæformis.—Jessie sends me a fine truss of this species for a name, saying it is from a shrubby plant with good-sized leathery dark green leaves, and the flowers are very attractive. This is an old plant which is now becoming popular. The present species seems to be a native of Brazil, and the entire genus is South American. All have yellow flowers. It should be potted in fibrous loam and leaf-mould made sandy, and be well drained.—W. H. G.

Oxalises are not popular plants, but they are delightful in the greenhouse at this season of the year, and it is surprising that they are not more grown in pots. Several forms may be seen in bloom in the Cape house at Kew, *O. floribunda* being the brightest, this having a profusion of rose-coloured flowers. A variety of it named *pallida* is much paler in colour, whilst a form named *carnosa* has yellow flowers. One of the finest of all the Oxalises is *O. Bowiei*, which has large crimson

flowers and was introduced from the Cape of Good Hope in 1823.

Schlumbergeria Lindenii (*H. Fischer*).—The leaf you send is undoubtedly that of this; it differs from *Massangea Lindenii* in the markings on the under side of the leaf being closely set and of a reddish brown colour, the upper side being marked with very light green, whilst in the other plant the markings are much wider apart, and they are of a blackish hue. You will find your plant produce inconspicuous white flowers. I am quite aware some authors make them synonymous, but as growing plants they appear to be quite distinct.—W. H. G.

KITCHEN GARDEN.

PREVENTION OF POTATO DISEASE.

TO THE EDITOR OF THE GARDEN.

SIR,—The experiments which have been made for the prevention of the Potato disease in this country have given ample proof that by the application of sulphate of copper the disease, if not entirely stopped, has been to a great extent diminished, and the experiments conducted by the Irish Land Commission Agricultural Department (as reported in your last issue) go further to prove the success of those trials. That sulphate of copper, when properly prepared and judiciously applied, will destroy all cryptogamic diseases on trees, plants, and vegetables has been conclusively proved. The experiments and modes of application hitherto adopted in this country have been carried out entirely after the receipt of the Bouillie Bordelaise mixture, viz., two-thirds sulphate of copper and one-third lime, with water, but there are other methods by which the copper is prepared and can be applied, in the form of extremely fine powder, and in this manner becomes equally soluble, less dangerous, and more easily and effectually distributed than in the liquid state.

This preparation is being extensively used in the south of France for the oidium on the Vine, and in other countries as a remedy against the disease of the Potato, Tomato, Beetroot, as well as for the mould in the Hop.

This specific is known as "sulfosteatite cuprique," a most effectual remedy against mildew, rot, and other cryptogamic diseases.

In a pamphlet written on the manufacture of this powder, it is stated that the results have been so satisfactory, that Professor Millardet, of the Academy of Bordeaux, inventor of the Bouillie Bordelaise, stated at his lecture given at Beziers that the sulfosteatite gives results which the "Bouillie" cannot be relied upon to produce, such as the protection of the Grapes and absolute preservation from rot. He therefore strongly recommends it for the treatment of plants with tufted leaves, testifying that the sulfosteatite preserves plants and fruits from mildew, and that one can never obtain this result with any liquid treatment whatever. When blown by means of a bellows, the sulfosteatite forms a moving cloud and immediately attaches itself to the objects, and no spores, whether of mildew or black rot, can escape if the application is made during calm and damp weather, so as to allow the powder to adhere to the foliage. Sulfosteatite contains about 10 per cent. pure sulphate of copper and 90 per cent. of pure silicate of magnesia, manufactured into extremely fine powder, and is perfectly harmless to animal and vegetable life. I would advise those who have not tried this form of applying sulphate of copper as a pre-

ventive against the Potato and Tomato disease and mildew on Vines, Roses, fruit trees, as well as mould in the Hop, to give the sulfosteatite a trial.

JOHN CRANSTON.

King's Acre, Hereford.

EARLY CABBAGE.

NEVER was early Cabbage more welcome than now. In the varieties of early Cabbage we have made considerable progress, and this without loss of flavour, though the size is diminished. This is a gain to the private grower, as I consider a small Cabbage much nicer for the table than a huge coarse one. I have a row of several of the old varieties on a plot of land, adjoining which is a good breadth of the one we rely upon for early use, so I have been able to test their merits. This has been a good season for testing the merits of Cabbage as far as bolting is concerned. Some of the old large varieties have run badly, for out of, say, 100 plants of that well-known kind, the Nonpareil, 90 per cent. have bolted. I always advise early sowing, as a good breadth of Cabbage to follow the winter green vegetables is more serviceable than later. There is considerable gain in making two sowings; one can afford to lose a few from running if Cabbages can be cut a month earlier than would be the case if sown later. I have seen Cabbages sown so late in August that it was impossible the plants could stand the winter. Some people may say that early sowing is conducive to bolting. It certainly is with some varieties; hence the necessity of selecting a reliable kind. From several years' experience I have found none equal to Ellam's Dwarf Early Spring. This season out of many rows I have not had a single plant bolt. These were sown the third week in July; others sown at the same date are more or less bad as regards running, and, as stated above, these comprised several well-known kinds good for succession, but not to be compared with Ellam's for earliness and freedom of growth. Ellam's also possesses another good quality—hardiness, a great point in winter Cabbage, as out of many hundreds there is scarcely a gap in the rows. I attribute this hardiness to its dwarf compact habit, as if well moulded up in the early winter there is but a small portion of the plant exposed, the erect growth throwing off excessive moisture. It may be thought any variety may be so treated, but the growth differs. Many kinds have a spreading habit and longer stem, and are, therefore, more exposed. By sowing as advised and planting as soon as ready on deeply cultivated ground, there need be little anxiety as to this variety turning in when required. I have for the past three years kept a record of date of cutting. Three seasons ago I cut the third week in April, last season the last week, and this year the second week, thus showing its good qualities for earliness and hardiness also. The seed is sown from July 15 to 20, and there is little fear of running. I like to make light soil firm before planting, this encouraging a sturdy growth. The results given as to dates were from plants in open quarters, not on a south border or protected by walls. By using a dwarf Cabbage, such as Ellam's, there is less need of large quantities of manure, as these small kinds do not root deeply like coarser kinds, and are a shorter time on the ground; there is much gain by growing such varieties, as they may be planted closely and they never look patchy. A succession is readily secured by sowing in three weeks after the first sowing, and to succeed these a pinch of seed sown in a little warmth early in the year will give a succession of Cabbage as long as it is required. I would also point out the advantage of sowing three or four times a year, getting nice tender heads in preference to allowing the old stumps to remain after cutting, as they rob the ground and harbour grubs and caterpillars.

G. WYTHES.

rows of Peas, told me that he never strung them till they were just coming through. I give them a good dressing of soot, said he, at sowing time and wait till I see the first Pea shoot before putting strings to them, as I find that if they are strung when sown the sparrows get used to the strings by the time they are up. There would certainly seem to be much reason in the man's method, for sparrows quickly get used to any kind of scare.—J. C. B.

Cabbage Lettuce All the Year Round.—New varieties are often commented upon, but the above old kind deserves a note of praise. True, it cannot be termed a forcing variety, although it succeeds grandly when grown in frames throughout the winter. It is as a good hardy variety for turning in early in the open air that it is so valuable. Hardy it is without doubt, and I have been cutting quite full-hearted Lettuce in quantity since the middle of April. Hicks' Hardy White Cos will follow it, and this will be succeeded by the old Bath Cos.—A. Y.

LETTUCES DURING HOT WEATHER.

In the majority of establishments good Lettuce must be forthcoming daily. Whether we are likely to have a hot and dry summer remains to be seen, but should such be the case or not, the preparations for a daily supply must be proceeded with. In many gardens the Lettuce does not receive that consideration it undoubtedly should do, as after the first supply, which may have been raised under glass or from a sowing in the open air, there is a sudden falling off. The weather, whatever this may be, should not make this difference, as during the hottest weather it is possible to get Lettuce worthy the name. True, it cannot be expected to be so fine as when grown in a cooler season, but sufficiently good enough for any purpose. The Cabbage Lettuce suffers the least from the effects of drought, but in the generality of seasons, or such as we have had since the Jubilee year, a good selection of the Cos will succeed equally as well. As to which should be grown is a matter of opinion, as those who have to partake of them are the best judges on this point, although, as I have previously stated, likes or dislikes must be waived in favour of the Cabbage section if the weather is likely to be dry and hot. I grow a part of each. Some varieties, again, are supposed to be better than others through remaining longer before running to seed, but to a certain extent this is a matter of culture, this having more effect upon the well-being of the Lettuce than mere variety. Of late years there has been a great improvement amongst Cabbage Lettuce, being more fuller hearted, consequently not so flabby in texture. When well grown the old All the Year Round is a capital Lettuce. Growing on poor soil and crowding the plants up together either when sown in beds for transplanting, or when sown where to remain, are the main causes of failure. Whether Lettuce will succeed during the summer months when transplanted will depend upon the season, as with the soil dry and with hot sunshine daily for weeks together no one would think of relying upon transplanted Lettuce. Not but that Lettuces transplant much better during the summer months than they generally have credit for. My practice is always to have relays of young plants on hand, and if the weather is suitable for transplanting I do it, but if not, they are thinned out. That some people find a difficulty in transplanting Lettuce during the summer months is not to be wondered at, as the plants are raised so thickly. In consequence they are so tender that they collapse at once.

In raising plants early in the year in boxes under glass, it will be noticed how nicely rooted the little plants are when they have some flaky soil to root into either through the addition of leaf soil or even a little fresh soil. It is the same with plants raised in the open, at least those required for transplanting. When sown to come to maturity where they are to remain, of course this does not matter, although in this case even the preparation for the seed must be thorough, or if the weather should turn out very dry, the seed may fail to germinate regularly, especially if on an exposed site. This is all the more desirable on heavy soils, where there is often a difficulty in getting sufficient mould for the roots to ramify quickly into or even the seeds to germinate in. The better course to ensure a succession is to make small fortnightly sowings on an eastern or western aspect, but preferably the former, as during the hottest part of the day the seed bed would be shaded. Not that this, however, should be from trees, as Lettuces never succeed well when planted in the shadow of either trees or tall buildings. This is by far the best course to pursue during warm and dry seasons, but in cool and moist weather the seeds germinate just as readily if in the open. The seeds should be sown in shallow drills drawn a foot apart, and if the ground is at all lumpy, add some fresh soil or even old potting mould, with burnt garden refuse. Overnight the drills should be watered, the seeds being sown early the following morning. In all probability there will be sufficient moisture retained to ensure the seeds germinating freely; but if not, afford a slight shade by throwing a mat over the bed, having previously watered it. This will be much better than constantly watering and leaving the surface fully exposed to the sun. For sowing direct into the open, so as to remain without transplanting, the site must be in a free working and highly fertile condition. Sow very thinly, crowding of the plants being certainly a disadvantage. Thin early, keeping the hoe well at work being a great aid to growth. The best Lettuces I have are certainly those grown along the ridges of Celery trenches, the soil being well fined down previous to either sowing or transplanting. This would, no doubt, be too dry a site for midsummer crops during a very dry summer, an eastern or western aspect at these times being the better position.

In transplanting Lettuces during the summer, the bed which the plants are to be drawn from must be well moistened over-night, so as to ensure the plants being lifted with all available roots. These must not be drawn roughly, but be gently lifted, or the greater part of the roots will be broken off. Of course, showery weather is the best for transplanting, but, unfortunately, this kind of weather does not always occur at the time the plants are ready for removal. This is easily obviated by drawing shallow drills, these being moistened before planting, a watering afterwards fixing the plants in the soil. If there are not many plants to be set out, I find it a good plan to cover each plant over with an inverted flower-pot for a day or two, removing them at night so that the plants can derive the benefit of the night dews, replacing them in the morning. It may be necessary to water the little plants occasionally until they become well established.

A. YOUNG.

Good frame Potatoes.—I am aware that any early variety may be classed as a frame Potato if planted under glass, but there are some much better than others, and so far I have found none to equal Sharpe's Victor for earliness and good

Peas and birds.—Many cottagers are good vegetable growers, and one may sometimes learn from them. One man who certainly has fine

quality when cooked. This variety, if started in pots or boxes, may be had fit for use in from eight to ten weeks from time of planting, so that where time is a consideration, this variety for frame culture should find a place. Some may object to the variety as being firm when cooked. This must be expected in any Potato grown in so short a period, but it may soon be improved by leaving it in the ground to mature for a short time longer. When grown in frames and when the tops commence to turn yellow, I venture to say, when lifted, there will be no complaint as far as flavour is concerned. For growing in pots I do not know of any kind more suitable. For years I grew the well-known Alma kidney, one of the parents of Victor, and used to think it a valuable early kind, but Victor is a great improvement both as regards earliness, shortness of top and produce. Victor also possesses other good qualities, that of having a beautiful clear skin, travelling well, and not rubbing like some. For outside or earliest in the open ground, Victor is also useful. There are other varieties of sterling merit for frames or forcing. One of the best is Veitch's Improved Early Ashleaf. It is a few days later than the first named, but a valuable table Potato and a heavy cropper. Sutton's Ring-leader, also excellent, is earlier than many of the old Ashleaf type. There is also a form of the old Ashleaf with a very dwarf top. Another variety I have grown for years goes under the name of Early May. It is only a few days later than Victor, with very short top and a fine flavour. This is excellent for frame culture and closely allied to the Ashleaf type. Whatever variety is forced, it is important to place a sufficient quantity of soil in the frames, as want of depth of soil often impairs the flavour; moisture is also equally important during growth.—G. WYTHES.

Growing Mushrooms.—The experiments committee of the Kent County Council held a meeting at the Horticultural College, Swanley, on Thursday, April 28, at which Professor Cheshire gave an account of a method of growing Mushrooms which he had found very successful. This system consists in making the bed up of alternate layers of earth and fresh manure instead of the common method of forming the bed of a bulk of manure with earth only on the surface. It had been found on trial at the college that the crop was much larger under the former treatment, and the bed lasted longer. This system has also the advantage of regulating the temperature of the bed, thereby allowing one to spawn it earlier.

Narrow drills for Peas a mistake.—In many gardens the custom when drawing out the drills for Peas and Beans is to do it with the corner of a hoe or with a three-cornered hoe. This is a great mistake, and is often the cause of the Peas becoming much drawn up in their early state. For years I have given up this method and adopted a course which gives them every chance to become strong from the first. The line is put down, and a spade or narrow shovel is used. If a drill from 8 inches to 10 inches wide is taken out, I find the Peas come much stronger, not being so thickly together.—J. C. F.

Mushroom beds.—Those who are about making up fresh beds for the end of June and July bearing will do well to examine closely the state of the manure after such a continuance of dry weather as we have been experiencing for some time past. In my own case I find the manure a deal too much on the dry side, although it might not be suspected if it were not looked to closely. At this season of the year it will bear to be a little more on the opposite side in this respect than in the autumn. I believe that failure, where it does occur from now onwards for three months, is more attributable to dryness in the manure than anything else. Unless the beds be in cool, moist cellars, it is only rational to conclude that more evaporation is going on than in the autumn and winter seasons. Although I am no advocate for watering when it can be avoided, I find that it is now really essential in my case. I like to use soft water if possible, putting a canful or two of liquid manure into the water-tub. The manure never

needs to be turned so often now as when it is at all on the wet side, as it will be in the autumn if exposed. Where beds are found to dry up too frequently when without any covering upon them in Mushroom houses, it will be better to lay on a light covering of litter and keep this moist rather than have to moisten the surface too frequently. At this time of the year I have known Mushrooms to be grown in disused ice wells or houses. If no better place can be obtained I would prefer to make up the beds under the shade of trees rather than in the open; this may not be orthodox, but it is none the less a sensible method to adopt.—G. H.

Vegetable seeds.—The germination of every kind of seed has with me been most satisfactory thus far this season. I never remember it to have been better, and, what is more, the plants look healthy, only waiting for rain to grow apace. Carrots and Onions, Beet and Lettuce, with all of the Brassica family, as well as Peas, have given the very best results. The large amount of sunny weather has favoured germination without a doubt, there having been sufficient moisture in the soil combined with the warmth to accelerate this. French Beans of the first sowing last year failed through too much moisture; hence this pointed to the ground being too cold. This year, although sown at just about the same time, every seed appears to have come up. It is to be hoped that no frosts will now ensue to cut off these early crops. I always make the second and third sowings in rapid succession to guard against a contingency of this kind.—GROWER.

GARDEN FLORA.

PLATE 909.

GLOXINIAS.

(WITH A COLOURED PLATE.*)

ALTHOUGH there are of named kinds several well-defined and decidedly distinct novelties shown from year to year, the best of which usually receive due recognition when exhibited, it is to the seedlings that we look on the whole for plants in quantity. One or more packets of seed will supply enough plants for almost any purpose. If greater variety be needed it is easily accomplished by purchasing the seed in the different kinds as quoted in several seed catalogues. Although seedlings are thus recommended, it must not by any means be inferred that the named kinds serve no useful purpose. These are they which are looked to by those who save the seed as being the best types—that is where the object is what it should be, viz., the continued improvement in the various strains. By saving seed from selected varieties and pursuing a process of cross-fertilisation the hybridiser has made a vast improvement of late years in the Gloxinia. Anyone who may be desirous of saving his own seed in the pursuance of this interesting subject of hybridisation cannot do better than purchase about a dozen of the best and most distinct named kinds as a foundation for future work. One of the chief advantages of seedlings is in point of numbers with diversity of colours, and another is the facility with which they are brought on to the flowering stage. Seed, for instance, that is sown in January (early) will give plants that will flower by the end of May, or at least in June; thus there cannot be said to be much loss of time; whilst for a succession another sowing should be made about the middle of February, with a third the end of March. This last batch will flower

well into October, or even later if it be needed. Taking into consideration the fact that the earliest raised seedlings of the previous year can be had in flower in March, it will be seen at once that nearly eight months are thus covered. This can be done without resorting to abnormal methods in the slightest degree, such as high temperatures, which are only productive of soft and tender growth. Some growers of the Gloxinia do, I am fully aware, extend the season into the winter, but it scarcely pays beyond being a novelty. Where it is done, the position should be as favourable as possible, a swing shelf near the glass being about as good a place as can be chosen, with the plants not overpotted. Gloxinia flowers, either upon the plants or in a cut state, last well. There can be no disputing this fact when the plants are not grown in too much heat or moisture. I have used the blossoms in vases for the drawing-room, the boudoir and the dining-room, and always found them stand well in either place. Small plants in small pots are also very useful for decoration during the warmer months of the year. Even if they do suffer to some extent, it does not materially matter as compared with those plants which take longer to produce.

CULTURE.—Alluding more particularly to cultural details and starting with the sowing of the seed until the resting time comes round, it cannot be said that Gloxinias are difficult plants to manage. The seed usually germinates well without any extraordinary amount of care; in fact, much better than some seeds which could be named. I prefer myself a sandy soil in which leaf-mould sifted fine and a very small proportion of loam, with about as much sand as of the former, are the component parts. The seed should only be lightly covered with the finest of the soil. Watering before sowing the seed is the better plan; then if covered with a pane of glass but little more moisture will be needed until the seed has germinated, and this had better be applied by immersing the pan in water rather than by the usual methods. As soon as the seedlings can be handled, they should be pricked off into pots or pans and be kept afterwards well up to the light. Another pricking off afterwards may be practised if 2½-inch pots be scarce; otherwise these will be preferable. An after-shift into 3-inch pots will be sufficient to produce a few flowers the first season, but an additional potting into 4½-inch pots will decidedly pay. Each potting should take place before the plants are in the slightest way pot-bound, and every care should be taken of the leaves that they be not broken. The advice as to keeping well up to the light is an essential item, for if the plants become drawn they are in a manner spoiled, and must either drop on one side or be stopped as a preventive thereof. Some three years or more ago I had more plants of seedlings than I required, so I determined to try them pricked out in a frame from which Alternantheras had just been taken to the flower beds. Here I found them to do surprisingly well, making by the autumn large enough plants for 6-inch pots at the least. The heat was all spent before they were planted, but by keeping the frame fairly close the growth was rapid, the majority flowering most profusely during the summer and autumn, being useful as a supply of cut flower. I noted this at the time in the columns of THE GARDEN, and have since advised its adoption. I observe, however, that another correspondent has quoted the same practice thinking it original, which on his part was altogether a mistake. It is undoubtedly a good method and a ready one of obtaining good plants for the following year where

* Drawn for THE GARDEN by Gertrude Hamilton in the Royal Exotic Nursery at Chelsea. Lithographed and printed by Guillaume Severeys.

facilities do not exist of raising a good stock in pots by the usual methods. A slight shading was necessary in the frame, as it is in any case. Air was admitted freely as the plants came into bloom to guard against any damping in the flowers. I do not consider it a good plan to allow seedlings to become entirely dry through the first winter or resting period, more particularly if they be in small pots; it is weakening to them without a doubt. The better plan is to water occasionally in such cases, although it might not be found necessary in after seasons when in larger pots. Those which are planted out would have to be lifted before there was any danger of frost, when they may be kept safely in Celery boxes with a fair amount of soil attached to them.

After the seedlings have once got a good start in small pots, a cooler temperature will suffice for them. Supposing they have been thus far brought on in a brisk stove temperature, a few degrees less will suffice until they will stand safely in what may be termed a temperate

wherein the throat or tube of each flower is beautifully marked, extending in some instances to almost the extremities of the flowers. This type of *Gloxinia* does not possess that luxuriant growth with leaves of unusual or abnormal size, as may be seen in other forms when freely grown. Those, for instance, with blue flowers, or blue and white, are as a rule the strongest growers. Having secured a few good kinds from seed, it is an easy matter to propagate them by means of leaf cuttings. For instance, when one has been fortunate enough to raise a pure white with good habit, it is really worth propagation. The spotted-flowered varieties, not possessing quite so much substance in the flowers, are all the better for packing in a cut state to send a distance than are the others, although in no case are they the best of material to travel safely without bruising. If cut in the early morning, they will not travel so well as if cut in the afternoon after a sunny morning, but they will quickly revive when placed in water. In a cut state,



An erect-flowered Gloxinia.

house. A high and over-moist temperature is prejudicial rather than otherwise, encouraging a too leafy growth at the expense of flowers. On the other hand, a high and dry one will encourage a minute form of thrips and red spider also; the former at times causes the plants to go quite blind, or to throw crippled or small flowers. Overpotting of old plants and too much water will combine in causing failure also. During the summer season it is quite possible to flower them well in what may be termed a greenhouse kept close, the plants having been grown on previously in some warmth. The soil recommended for seed-sowing requires some amending afterwards; about half and half of leaf-mould of good quality and fibrous loam will then answer better, using peat and old Mushroom manure if the former of the two is not to hand. Other additions should consist of silver sand or road scrapings, with a slight amount of bone-meal. All the potting can be done with the fingers and thumb, as no hard pressing of the soil is needed.

The coloured illustration is an excellent one, chiefly of the spotted or laced type of seedlings,

nothing in my mind associates so well with *Gloxinia* flowers as Maiden-hair Fern fronds.

SOUTHRON.

THE WEEK'S WORK.

ORCHIDS.

SOMEONE remarked to me to-day on looking at the plants that the season was quite three weeks earlier. Perhaps all our plants (Orchids included) are quite as much as this earlier than they were last year; but not only was last season a late one, but we have passed through a series of late seasons; the spring months for the last decade have been exceptionally wet and cold. Orchid cultivators must act according to the seasons, and when it is dry and hot sunshine by day, watering becomes a more important item in the daily duties. From now until the end of August the most important of the duties of the cultivator is the watering of the plants. When a gardener has once obtained a fair knowledge of the requirements of his plants, the watering presents no difficulties that may not

easily be mastered; but the work is very important, as it must be admitted that a great deal of success or failure lies in the proper distribution of the water, and to this some allusion was made last week. A good Orchid grower remarked to me that when he was absent from home his Orchids did not cause him so much anxiety as his New Holland plants and Cape Heaths, the latter genus of plants being specially liable to be injured by too much or too little water. Certainly there are some Orchids that would not be injured in the least if they had to pass through a day or two after they needed water; of such are *Cattleyas*, *Lælias*, and such things, especially plants in pots of large size. Many Orchids suffer greatly if allowed to become over-dry—*Disas*, for instance, *Masdevallias*, and some *Cypripediums*. These must be kept well on the moist side all through the summer, and *Dendrobiums* when in full growth ought not for an hour to suffer from want of water. It is a good plan to look through the entire collection every morning at this season, and water every plant that is likely to require it during the next twenty-four hours. Large plants of such as *Lælias* of the *L. purpurata* type and the *Cattleya labiata* section, may go for a week without water; they may show considerable dryness on the surface of the compost in which the plants are growing, and yet be moist enough in the centre of the mass. It is necessary to ascertain what is the state of the roots, for a plant that has filled the receptacle in which it is growing full of healthy roots will require more water than one that has an unsatisfactory root-run. Plants on blocks should be dipped. All our baskets or blocks are taken down when they need water, and are watered on the path. It is quite impossible to water such plants as they hang suspended from the roof; the outsides of the baskets, &c., may be wetted, but this is not enough; the centre compost should be penetrated in every part. Moreover, at this season when there are so many plants in flower the spray from the syringe does woeful damage to the delicate petals of the more tender flowers by causing spot, which ends in premature decay. Another good receipt to destroy Orchid flowers is to damp the house well at night, and shut it up without artificial heat. This is done in the summer months to the utter ruin of the best specimens. *Apropos* of watering Orchids on blocks or in baskets, I remember a gardener who excelled in growing and flowering *Dendrobium Falconeri*. The plants were grown on blocks, and he dropped the plants every morning into a tank of water when he went to breakfast and hung them up again as he returned. That would, of course, only be done when the plants were in full growth. This species and *D. Devonianum* are rather liable to be attacked by red spider, and this parasite would not be likely to live and thrive under water; both species need daily syringing in hot, dry weather—in fact this suits most of them. I have daily drenched a houseful of *Dendrobiums* with water and shut the house up in the afternoon, after which the temperature has risen to 95° or 100°, and the vigour obtained has almost been beyond belief.

The cool house Orchids can take water almost every day at this season. I find that many of the plants need surface dressing because of the *Sphagnum Moss* dying. I am never satisfied with the *Masdevallias* nor the *Odontoglossums* until I can obtain a good growth of *Sphagnum* upon the surface of the compost. All that are in an unsatisfactory condition in this respect should have the decayed material removed from the surface and be replaced. Tear up some good light, fibrous peat, and sift out of it the finer particles. Get some freshly-gathered *Sphagnum*, and cut it up into half-inch lengths with a knife. Some clean potsherds broken up into suitable sizes should be at hand, and also broken charcoal, the last not to be used so freely as the potsherds; spread the *Sphagnum* over the peat, and over all the crocks and charcoal. The material must be put on carefully with a crock projecting here and a piece of charcoal there, both embedded in the surface-dressing material, which should be pressed in firmly in about equal parts. Any unsatisfactory

specimen may be repotted, for even if this is not altogether the best time of the year to repot such plants, it is better that they should be in good fresh material that they can root into than be struggling for existence in a compost that has become sour through some cause or other. *Masdevallias* and *Odontoglossums* are both very impatient of any serious disturbance of the roots in the process of repotting. Dust gets upon the leaves when there is so much of it about, and an occasional sponge over does the plants much good. A moist, cool atmosphere is good for the plants, but too much of either may cause the delicate flowers of the *Odontoglossums* to spot and decay much before their time. A little fire-heat at night prevents the damp from doing any injury, and it is not safe to do without heat at night yet, for the time of sharp frosts is not quite over. I well remember putting out a collection of very fine *Chrysanthemum* plants from the frames to the open air, and the thermometer registered 8° of frost the next morning, and a severer frost has been known in May than this. Many of the *Cattleyas* may now be repotted if it is thought necessary to do so. I have always used a good deal of *Sphagnum* in the peat used for these and also for the vigorous-growing *Laelias*, and one of the best growers of these plants informed me the other day when I was looking through his collection that he used more *Sphagnum* than was usual, and the effect of it was seen in a stronger and healthier growth. *Cattleya Trianae*, *C. Skinneri*, *C. Schroederæ*, or any others that have passed out of bloom may be repotted. See that they are quite clean before doing so. I repot most of the *Cypripediums* that have passed out of bloom; also such as the *C. insigne* type, *C. villosum*, and *Cymbidium eburneum* will be repotted. After repotting, the right thing is to try and get the plants to make roots freely, and this they will do in a moist atmosphere, but the temperature must also be kept up at night by artificial heat. The East India house temperature does not fall below 70° at night, and rises to 85° or 90° with sun heat; the *Cattleya* house 60°, and with sun-heat 75° to 80°. The cool house may range about 50° at night, but I do not care to have it above 65° by day. J. DOUGLAS.

THE KITCHEN GARDEN.

BRUSSELS SPROUTS.—Plants which were raised in a frame, but with the glass light removed some weeks since, have now developed into nice healthy plants. Such small plants, however healthy, it is not safe to trust to their permanent positions; therefore, the better course is to prick them out so as to develop further into strong plants. Even if the weather should be very dry by the time the ground for their reception is ready, the plants so further prepared for transplanting will be quite equal to the strain. All that is now necessary is to prick them out 4 inches apart in the rows, allowing an extra 2 inches between the rows, a little fresh soil and burned refuse having previously been pricked into the surface. On account of the very dry spring, no doubt grubs will be very prevalent this year, as the season has been all in favour of their increase, so anything which may be done to lessen their attacks should be practised.

PRICKING OFF CELERY.—The hot weather has been all in favour of a free growth of all young Celery, whether raised early or late. Plants which are pricked out now will form the main crop, so extra care must be taken in their preparation. Proceed by selecting a site directly in the open with a level and firm surface so as to prevent the roots penetrating deeply, as where this takes place the plants do not lift readily. A firm ash bottom forms the best base, as from this the plants can be lifted off readily at planting time. Either low frames may be used to protect them for a few days, or any rough shelter may be formed by placing boards on edge and covering with a mat. Over the bottom first spread a layer of rotten manure to the depth of 2 inches and the same depth of friable soil; not old potting soil by any means, as this is too sandy; the rooting medium cannot be too

sweet for Celery. Prick off the plants 4 inches apart, keeping them well sprinkled and shaded for a few days. Afterwards all protection may be removed and the plants kept growing freely by ample supplies of water.

WATERING ASPARAGUS BEDS.—If the present dry weather continues, the Asparagus which may be growing in narrow raised beds will soon commence to suffer, and the supply of available heads decline much sooner than it should do. Of course on a large scale watering would be an impossibility, that is without unlimited resources. These narrow beds are also the more likely to be very dry where they were not mulched early in the spring with short manure and burned refuse. To water these beds without now applying a mulch would be quite useless; the water, besides running off quickly, would soon evaporate. Therefore, first apply a mulch, and then give a thorough watering if possible. The weather has also been against the application of fertilisers, and as these are needed to ensure a good growth, not only for present cutting, but for promoting a strong after growth, these should be applied previous to giving the mulch, the water washing it in.

POTATOES.—Like other crops, these are now coming along rapidly; therefore, surface stirring must be vigorously carried out, both for keeping down weeds and stimulating growth. Many of the earliest are now moulded up, but in the case of the main crop and others coming on, the earthing should not follow too rapidly, that is, not before the soil has received a soaking of rain. Not that earthing must be put off if the tops show by their length that it must be done. During a wet season early earthing is an advantage, but during such weather as we are now having it would tend to turn off the rain from the roots. If any fertilisers are to be applied, sprinkle them along between the rows, afterwards hoeing or stirring them in. For working between the rows I much prefer a pronged hoe, this working into the soil and assisting greatly towards its becoming well pulverised. In earthing, do not draw the soil up to a narrow and sharp ridge, as this tends to throw off rain, and prevents it reaching the roots.

MUSTARD AND CRESS.—These are much more tender and also keep longer by being sown in the open air or under the shelter of a skeleton frame, this being 3 feet or 4 feet in width, with supports for keeping the covering off the seeds, or rather for keeping the seeds confined until they chip. Use fresh, light and also rich soil. This should also be fine and have a level and fairly firm surface. Before sowing the seeds give a gentle watering, and after sowing, another watering, keeping the surface confined and moist by covering over with a close and clean mat. After the seedlings have grown half an inch or so, give another watering and remove the cover, when the Mustard and Cress will quickly be fit for use. As the covering of one lot is removed, another sowing should be made, and so on, to keep up a steady succession. A. YOUNG.

PLANT HOUSES.

GREENHOUSE SUCCESSIONAL PLANTS.—Before the best of the bedding *Geraniums*, *Heliotropes*, *Lo-belias*, and other plants have slipped through the fingers, being finally disposed of in their summer quarters, it is just as well to secure a few of each kind that are known to do well in pots. These should then be given another shift and have all the flowers picked off for a time, so as to encourage a fresh growth. With the foregoing should be included other sweet-scented plants, as *Harrison's Musk* and *Aloysia citriodora*, not forgetting the scented *Geraniums*, old-fashioned, it is true, but none the less welcome. Where any great amount of space has to be filled during the summer months, such plants as all of these and others that could be named, but which may occur to readers in their respective cases, will be found extremely useful later on. The season when these are required at their best can be easily regulated, whilst they will be at any time capital accessories to such plants

as tuberous *Begonias*, *Fuchsias*, and *Liliums*. It is far better to see the houses filled with such soft-wooded and easily managed plants as these than to have the stages half empty in the height of summer.

TUBEROUS BEGONIAS.—These are wonderfully useful in pots as well as in flower beds, having undoubtedly largely surpassed or taken the place of many older things. The old tubers now growing freely and probably showing for flower should not be hurried, unless earliness is an object. These will now be quite safe enough in a cool pit or frame if the houses are so crowded as not to allow of sufficient room for them. They enjoy a moist, cool bottom to stand upon with gentle dampings overhead in the after part of the day when it has been warm and sunny. The lights even may be left off in the daytime if in a fairly sheltered place; this is almost better than having them on without a slight shading. Where any tubers have progressed more favourably than usual, giving promise of making extra good plants, another shift may be allowed them into pots one size larger. This will be found far better than starving them, so to speak, the flowering period being thereby lengthened. Good loam and leaf soil in about equal parts will suit them well, but if the soil be not altogether first-rate then add a few handfuls of a well-tried and reliable artificial manure. As in the case of the bedding plants afore alluded to, the pot stock of these *Begonias* can be strengthened from that source. Seeding plants of this year will be all the better if still kept a trifle warmer, any house or pit wherein a fair amount of artificial heat is still being used being suitable. Where late seedlings are not yet potted off, no time should be lost if they are fit, otherwise their season will be shortened too much.

INDIAN AZALEAS.—Those that are now gone past or out of flower should at once have the few remaining blossoms (if any) and all the seed vessels picked off. The sooner this is done, the better will it be for the after growth to be secured and ripened in good time. It is just possible that some thrips will be forming a colony; these should be looked after in good time, for even in spite of the syringe they will increase rapidly at this season. The best remedy will be two fumigations at the least if this can be arranged for, otherwise a strong solution of soft soap and tobacco juice should be used to syringe them with. More often than not this plant pest does the most harm to Azaleas after an exhaustive flowering period; it behaves us, therefore, to be on the watch against them. Young plants that are making a vigorous growth may be pinched with advantage; there is plenty of time for a second growth to form and then to set for flower. This plan is not adopted nearly enough; if it were, we should not see so many straggling plants as they get older; whilst in other respects, as the forming of a good base for a future specimen in equalising the growth, it is a distinct advantage. Early forced plants will now have completed their growth under favourable conditions. Where this is the case, no time should be lost in hardening them off, so that in a few weeks in places where the plants can be stood outside they may be fit for the full exposure. Anything needful in the way of potting had better be seen to at once. It will possibly be dangerous to defer it much longer, otherwise it may be postponed altogether; whereas if done at once, the advantage of warmth and moisture will encourage fresh root-action.

ERICAS AND EPACRIS (winter-flowering).—These, if treated as previously recommended, will now have made favourable progress and the growth should be getting well hardened. If not hitherto exposed to a free ventilation, they will now be all the better with it—given by degrees, of course. In a few weeks, by the first week in June at least, they should be fit for standing outside in suitable localities and sheltered positions. Meanwhile, do not allow the plants to be crowded too much together, particularly the *Ericas*, for with these easterly winds an attack of mildew is just possible. If this parasite makes an appearance, dust immediately with sulphur. Where the plants have

made a dense growth, a slight amount of tying out would be an assistance in ripening the wood, whilst probably it would also tend to form a better style of plant. Any plants that were late in flowering, and consequently late in making their after-growth, should hardly receive the foregoing treatment just yet. JAS. HUDSON.

HARDY FRUITS.

STRAWBERRIES.—These promise to be about a month earlier in ripening than last season, at any rate where the flowers were protected from frosts. Timely mulchings with strawy manure and a free use of the hose or watering-can will have been the means of keeping the crops swelling fast, and without these aids the fruit will be small. All ought to be laid up evenly on clean strawy litter, or, where it can be afforded, on fresh straw cut into short lengths by means of a chaff cutter, with one of the blades removed. Should the dry weather continue, and in some parts of the country there has been little rainfall up to May 4, birds will be more eager after Strawberries than usual, black-birds in particular starting upon the fruit directly it commences colouring. These must be kept off with fish nets. There are various methods of arranging the latter, the least effective, especially this season when the foliage is not so strong as usual, being simply laying the nets over the rows. Unless the nets are slung well clear of the fruit, the birds will settle on them and gorge themselves through the meshes. Where netting is plentiful and poles or stakes easy to be had, the plan of stretching the former over a framework sufficiently high to admit of the fruit being gathered from underneath answers well, but in most cases sufficient stout stakes to support strong tar twine, connecting and crossing this to keep the nets 18 inches from the ground, is the plan preferred. Not less than 6 inches of netting should rest on the ground all round, and there will then be no necessity to use any pegs for keeping the birds from creeping under.

MAIN-CROP AND LATE STRAWBERRIES.—It is to be feared fine fruit will be scarce as far as the second early and main crop beds are concerned, nearly all the finest flowers having been destroyed by frosts. What fruit has set will not have made good progress unless some steps have been taken to keep the roots well supplied with moisture. If there has been a heavy rainfall lately, it is yet advisable to probe the ground about the plants, and if found in a semi-dry state, a thorough soaking of water should be given prior to surfacing over the ground with old mulching material, clean strawy litter or fresh straw. Even this may not be sufficient to support the plants properly during the ripening period. It is useless to apply anything but quick-acting manures to those plants needing it, but if either Peruvian guano, nitrate of soda and superphosphate, or sulphate of ammonia and superphosphate, at the rate of two parts of the latter to one of either the soda or ammonia, is washed in, the effect will be soon observable in the increased size of the fruit. Heavy dressings are not desirable, and something like four pounds to the square rod of either guano or the mixtures will be ample. Those who have planted Loxford Hall Seedling, Latest of All, Waterloo, or other well-tried late varieties extensively on cool borders will most probably have good reason to congratulate themselves upon their forethought, these promising to crop heavily and to be fairly late. See that they have the full benefit of the assistance afforded by manurial surfacings, waterings, mulchings, and such like.

PLANTING OUT FORCED STRAWBERRIES.—If a few dishes of Strawberries are desired from the latter part of August up to November or later, these can usually be obtained by either plunging in pots or planting out the earlier batches fruited under glass. Vicomtesse Héricart de Thury and Noble are perhaps the best for autumn cropping, but other early varieties may well be given a trial. Select a border or fringe of open quarter for the

purpose, where the plants will be constantly under observation and within easy distance of the water supply. If it is only intended to fruit them again this season, the plants may be disposed just clear of each other, but if they are to be left to produce an exceptionally heavy crop next summer, then they ought to be planted out 20 inches apart in rows not less than 2 feet apart. Those kept in their pots should be plunged rather deeply, the roots being allowed to ramble over the sides and kept well supplied with water. These will be found handy for lifting and placing on Peach house and other shelves for their crops to ripen in September and later. Any planted out should be in a thoroughly moist state at the roots, and should be buried rather below the ordinary level so as to form a basin for holding the water, that will have to be given rather frequently at the outset. Well ram the soil about the roots, and finish off with a mulching of strawy manure.

RASPBERRIES.—These are doing none too well this season, and unless a soaking rain has fallen or falls soon, drought will soon make its ill-effects apparent. The fruit produced by plants with their roots in a dry soil is certain to be small and poor in quality, many failing to ripen at all. If not already done, use a flat hoe freely among the rows, so as to destroy all weeds and straggling suckers and to loosen the surface of the ground. If the suckers are at all thick in the rows, thin these out at once, as they only weaken each other and smother the lower clusters of fruit. Next give a thorough soaking of water, and then mulch heavily with strawy manure. The latter is needed even if a surfacing of nearly rotten manure has been given, as this only dries up and cakes badly, in which condition it is of no service either as a manure or mulch. The value of spent tanner's bark as a mulch for either Raspberries, Strawberries, or fruit bushes generally ought not to be overlooked. It should be applied not less than 2 inches in thickness.

RED SPIDER ON GOOSEBERRY BUSHES.—It is not often that the Gooseberry bushes are so badly over-run by red spider as they are this season. So much does a bad attack of this pest injure the bushes, that they are scarcely worth keeping for another year. They are to be found on both the upper and lower sides of the leaves, and no amount of rainfall will effectively rid the bushes of them. The best remedy is flour of sulphur, this clearing the leaves of the greater portion of the red spider without actually spoiling or injuring the crops. The simplest and, all things considered, the best way to apply the sulphur is to mix it with water and thoroughly wet both the under and upper sides of the leaves with the aid of an ordinary syringe. In order to make it mix with water the sulphur must be either first made into a paste, or, more simple still, a good handful should be squeezed through a muslin or scrim canvas bag into about three gallons of water. If one application does not rid the bushes of the pest, repeat the dose. This sulphur will also be found fairly effective against caterpillars, and can easily be rinsed off the fruit.

W. IGGULDEN.

FLOWER GARDEN.

ONCOCYCLUS IRISES IN THE ISLE OF WIGHT.

I VENTURE to think that I have accidentally stumbled on a way of growing these magnificent plants which promises the best results; indeed, I should not be wrong in saying the promise has been already fulfilled. As the subject is one of some interest to those who admire these *Oncocyclus* Irises beyond everything else, a few words on it may, perhaps, be admissible. I must premise, however, that I pretend to nothing beyond following

out the instruction I have had at different times from Professor Foster and Herr Max Leichtlin, and I should hold that anything which is really contrary to that is discredited at once; but there are very different ways in which any given ideas may be applied, and, so far as I know, they have never laid down any cast-iron rules which must be always inexorably observed. In *THE GARDEN* of November 28, 1891, Professor Foster sums up the advantages and the disadvantages of the two best schemes that are in use, and he leaves the matter thus: "The choice between these two methods must lie now in one direction, now in another, according to circumstances." My hope is that a third may be introduced which is not antagonistic to the two methods of practice I have referred to, but which pieces together the good points of both of them, and is largely free from the drawbacks which exist in either, and which, so far as an experience during the most trying part of the year can inform me, is not itself open to any grave troubles, or, in fact, to any at all. As might be expected, it is a very composite and fitted-in plan. It seems to me that anything peculiarly simple would stand self-condemned at once in the matter of cultivating these *Oncocyclus* Irises; there is always some Scylla and Charybdis between which one has to steer, and we have to meet them at so many points and think of them at the same time in more ways than one, so that a straightforward piece of business like that of putting a plant in the border, or sowing a seed in the ground, would never answer at all. Ever since I have been trying to grow these Irises, and that must extend now over a space of ten or twelve years, I have always felt like a doctor who had to say to his patients, "I have something which will do you an immense deal of good for the next three or four months, but you must not mind if it pulls you all to pieces during the succeeding period;" for the awkwardness of growing these plants, as has been often described, consists in the fact that what does them good at one time of the year may do them harm at another, and advantages and disadvantages have to be balanced together so as to see which is the greatest. Another thing to be said about my plan is that for the most part it is a tremendous plagiarism—one bit of it comes from one quarter, and another from another quarter; but, unlike plagiarists as a rule, I will confess my obligation as I go on.

For putting in effect, then, the general teaching of Professor Foster and Herr Max Leichtlin, I believe that the following rôle has given, and will give, the most excellent results. I will describe it under different heads, which will make it more clear.

Firstly.—With regard to the question of soil, I have tried all sorts and kinds of things, and I am as nearly certain as I can be that *Oncocyclus* Irises delight—at all events in this part of the world—in road scrapings pure and simple, and wish for nothing else. A soil of this sort is light, rich, gritty, and very easily penetrated. Moreover, it cakes at the top, and even in hot weather it does not become dead dry if no glass be put over it.

Secondly.—I am indebted to M. Hoog (of M. van Tubergen's firm) for the following good suggestion. He told me that in Holland they always cover the beds where difficult bulbs are grown with a thick coating of reeds or straw in the winter, and he said that these *Oncocyclus* Irises like it as well. My idea is that he is right. I am quite certain that a thick coating of straw does no harm at all, and I think it does good. It is an excellent apology for snow, to which they are used in their own native habitats. It keeps the beds from being beaten down hard and flat by the winter rains, it equalises the temperature, it checks to a certain degree any premature influence from the rays of the sun in early spring, and I can only see benefit in the use of straw in this way. I shall never neglect it again. I think I kept the covering a little too long upon the beds this spring, but that can be easily rectified; it is a matter for observation. If it is put over the plants on November 1, and taken off at the beginning of February, I daresay that would be long enough; and when some of the Irises did appear too soon for my purpose, and they struggled through the straw in rather a blanched condition, resembling *Seakale* more than anything else, in less than a week after they had been exposed to the light all this had entirely disappeared—the presence of chlorophyll asserted itself to the full—the Iris leaves looked quite fresh and strong and healthy, no harm had come to them at all, and in every case the plants have done remarkably well. But, as said above, it must be a matter of experiment how long the straw should be kept upon the beds, and I believe I did keep it on rather too long this spring.

Thirdly.—And this, which is the keystone of the arch on which all my building is erected, came to me almost by accident. About a year ago I paid a visit to Mr. Godman's beautiful garden near Horsham, and I inspected its treasures. There were many things in it which repaid my attention, but my eye very soon lit upon some clumps of *Iris susiana*, which were grown on a little raised plateau under glass. So far as *Iris susiana* goes, I should hold these provisions to be unrequired—they are certainly unrequired with me—but the thought came at once into my mind, would not this little raised plateau be very helpful with more difficult Irises, and might it not even be the case that something of the sort would pull me through in a plan which I had very much at heart? I will explain this a little later on, but the thought of growing these Irises on a bed which had been especially raised for the purpose could not be put aside. I have for years been accustomed to grow many scarce and difficult bulbs on raised beds, but it never once occurred to me till then that a raised bed might have the strongest possible bearing on the management of *Oncocyclus* Irises. The truth is that this vision of *Iris susiana*, which Mr. Moody, the head gardener, was treating in that sort of way, has given me everything.

Fourthly.—I have frequently wondered if these *Oncocyclus* Irises would stand a con-

creted bottom for the beds in which they are grown, but it seemed to be almost impossible to believe in any such thing. I feared they would rot off to a certainty. But if they would stand it, I could see how they might be dried off *in situ*, and all the disadvantages of the taking-up system would be entirely obviated. There would be no more laceration and weakening of the roots and the tremendous shock would be escaped which always attends a very severe operation. But not a gleam of hope has ever come to me on this head till Mr. Godman's garden was visited, and then it did come, and it has by no means been falsified. My hope was that by placing the Irises on a little raised plateau of about 6 inches above the surrounding level, the water would run off them and the rhizomes could not become water-logged to any dangerous extent, and this is just what has taken place, and it has enabled me to put a firm bottom to each of my beds without any injury to them. I have made use of some of the old paving stones of Ryde, and I placed them at the depth of about 1 foot beneath the surface, and the proceeding has answered beyond all expectation; not one plant has been lost, though they were all shut in beneath the straw above and the paving stones below with about 1 foot of earth only to grow in. I think they never would have stood it if it had not been for the 6 inches of comparative dryness at the top. The water must have deliciously fallen off from the rhizomes, and they have got no harm at all. I planted eighty-six *Oncocyclus* Irises on November 1 or thereabouts, and eighty-six declared themselves quite happy in February by appearing above the ground. I could hardly believe my eyes when the whole lot reappeared in the spring. I have lost them by dozens before, and at last they have emphatically and with one voice declared that they are all contented and happy. I was weak enough to record the fact on the moment, but when the eighty-sixth *Oncocyclus* Iris announced itself safe in the early spring I admit that it was by a very long way the most satisfactory occasion in my horticultural life, and I looked on it as the turning point of everything in this trouble some business, for the great advantage is this: I can now dry them off in July and August just as I like. When I put the lights over their heads in early summer the Irises will be, so to say, placed between two fires; they will be cut off from all moisture at the top and all moisture at the bottom, and they must lie passive in my hands just so long as I choose to keep them so. There can be no nonsense about the matter, and this unquestionably gives me, I should say, what I have been longing after for years, and it is just that, I submit, which Professor Foster, in his paper of November 28, 1891, puts at the highest value of all, viz., a way for letting these Irises remain fixed in their places and yet not of allowing them to start away into growth. I have not yet gone through all the process in summer, but it is impossible to think that the plants can move at all when

water is cut off from them from above and also from below. It was the moisture springing up from below which has hitherto done all the mischief and has compelled the growers of these beautiful flowers to consign them, as it were under protest, to the greenhouse shelf during the hot summer months. Central Asia itself would not, I should say, be less provocative of untimely growth than 1 foot of soil, which is placed in summer between a glass covering overhead, and an outspread of the paving stones of Ryde, which is put underneath. Ventilation has not been forgotten and is very easily managed.

Fifthly.—There is one mistake I have made against which I would guard others who want to see these *Oncocyclus* Irises doing well in their hands. I find at the following point the greatest puzzle of all. It is very difficult to tell exactly on what day the lights should be put over their heads. I suppose that a moderate time should be allowed to them after blossoming, but that care should be taken to prevent the possibility of any young growth being made. If it is so, it is a mistake, of which I have unfortunately been guilty, to grow Irises of different vigour and habit in the self-same border; e.g., *Iris Lorteti* and *I. paradoxa* do not put up with each other's company very well. *Iris Gatesi* and *I. iberica* scarcely match in their several performances, but the time for putting the glass coverings over their heads will be arrived at more easily if each sort can be dealt with separately by itself. I see that I have got into some confusion on this head, and it will take a year or more and a good deal of trouble before it can be put straight.

For possible disadvantages of the scheme I have indicated, the two following may be named. Mr. Barr, who always has taken a very great interest in this subject, and with whom I have corresponded about it, said, "There is great hope for your plan if only one danger can be overcome. I fear the Irises will not make their proper growth in the spring." He thought that they might become dried off prematurely. As for the winter, he saw no danger in it at all. But I think his anxiety may be allayed. We are having the most deadly difficult spring for flowers that ever was known in the Isle of Wight, and if this can be tolerated, there is nothing more to be feared. But my Irises are not burnt up as yet; the foliage is fresh and vigorous; many of them are in full bloom at this time, and they have suffered, if they have suffered at all, far less than many other things in my garden. It is true that Mr. Barr added to the above observation that he had very often wondered at the very little depth of soil in which he had found plants growing abroad, and he said that possibly this might be the case with the *Oncocyclus* Irises themselves. I hope before long to try some of them in even less than a foot of soil, for it is only by experiment that the right thing can be gained. But imagine a spring of the old-fashioned genial sort, warm April showers and soft westerly winds, and if the Irises can do as well as they are doing

now in my garden, they would then be in paradise. My own fear was that they would not get through the winter at all under the treatment I gave them. I looked on the whole thing as a great risk, but a risk which under the circumstances it was worth while to take, for if they should happen to get through the winter safely in this way, the very difficult business would be settled at once. I believe that the 6-inch elevation saved them from being waterlogged between the straw and the stones, and it was a red-letter day in my garden when the eighty-sixth Iris appeared safely above ground in the spring.

There was one sentence in Professor Foster's letter of November 28, 1891, which sent a thrill of anxiety through me at once. I refer to the following words: "It is not improbable that the life of an *Oncocyclus Iris* in its own native home is a short one, and that the race is maintained by frequent seeding." If it be so, one must put up with the disappointment which such a severe loss would entail; but if, on the other hand, *Iris susiana* is only the precursor of a race which, after a time, will get more or less accustomed to the English climate, then I think there may be a vision of beauty in store for us in our gardens which is altogether unequalled. These *Oncocyclus Irises* simply electrify anyone who sees them for the first time; they are so weird and unlike anything else. For elegance of form and colour and for the beautiful markings which so very much distinguish them, they are altogether unrivalled, and when *Iris Lorteti*, *I. Gatesi*, *I. paradoxa*, *I. lupina*, *I. iberica*, *I. Korolkowi* and several others become at home in our borders, they will surpass the wildest anticipations of the most enthusiastic gardener that ever lived before they were introduced.

Alas! only that the blossom is so very fugacious and short-lived. They certainly deserve to have another Herrick to weep over their departure when they go. It takes me a month or six weeks to be able to look on anything else with complete satisfaction. The blank in my garden is very great, and I always think that it is very rough on *Ixias*, *Sparaxis*, *Crinums* and such like that they have to follow on after such paragons of perfection have had their day. *Ixias* and *Sparaxis* are well enough in themselves, and no fault can be found with them; but we must wait till next April or May till the vision can be equalled which has been given to us just now.

It is a vision of this sort on the part of the *Irises* which I have had before my eyes for many a long year, and I have had to content myself with glimpses of it—sometimes very grand ones indeed—either at Great Shelford or Baden-Baden, or just a reminder or two in this place, but over and over again my hopes have been dashed in my own garden and the *Irises* have not responded to them at all. Whether it is to be so again in the future or not, the future only can tell. But when the winter has been got over very successfully and a terrible spring presents no difficulty at all—and the summer, I should

say, must be quite safe from the very nature of the case—I venture to submit that there is encouragement now, which, speaking for myself, is greater than I have ever had, and which warrants an expectation of far better results than I have as yet known. I may mention here that I had a visit a few days ago from Mr. Potter, of York, and he saw how well the *Irises* were getting on, but, strangely enough, he told me of his own experience, which very much tallies with mine. He said that *Oncocyclus Irises* were the most heartbreaking things in Messrs. Backhouse's nursery they have ever had, and *Iris iberica* was very nearly given up altogether on this account till one year the plants were flung down on a hard beaten-down path and just lightly covered over with soil, and then all

different state of things in this country, and certainly in the Isle of Wight, from all that. The atmosphere is full of moisture at every season of the year, and land springs abound in our gardens and fields. It is under conditions such as these that *Oncocyclus Irises* if left to themselves become utterly mystified and play their part badly indeed. I am only too thankful if the measures which have occurred to me recall them in some degree to their duty, and the very glorious blossoms which I have now before my eyes, and which I look forward to having if all be well in far greater measure in future years, make me think that it is so.

HENRY EWBANK.

May 1, 1893.

ANNUAL SPECIES OF COREOPSIS.

THE large family of Composites, although comparatively rich in showy summer and autumn-flowering annuals, contains many of such a tender character, as to necessitate their being raised in heat, a circumstance which places them practically outside the pale of the small grower with limited accommodation. The annexed cut is a good representation of what are as yet known in gardens as *Calliopsis*, but which Dr. Asa Gray in his "Flora of North America" has placed as a section of *Coreopsis*, a genus to which only perennial kinds formerly belonged. The varieties of *Coreopsis* have many advantages over the general run of Composites, both on account of their hardy nature, and also on account of the striking beauty of their variously-coloured flowers. No garden, however small, should be without its own particular strain of these plants, for, as in the case of *C. tinctoria*, the kind cultivated to the greatest extent in gardens, they are extremely variable in colour and markings. One other advantage, and one of great importance to the small grower, is that they may be sown in the open air along with other annuals. Those sown in autumn bloom early in spring, and the produce of successional sowings from March until the end of April flowers until destroyed by frost. To succeed well they require a rich soil, and if moist rather than dry, especially in the case of those sown early in spring, all the better. Seeds ripen freely enough, and they may either be sown as soon



Coreopsis Drummondii.

of them, to his great surprise, lived and did well. The counsels of despair answered completely when the measures which his greatest wisdom could dictate had altogether failed. But Mr. Potter's counsels of despair had a very strong resemblance to those which I believe in so much, and which I took with my eyes open. I only hope that my friend and horticultural instructor at Baden-Baden will not think all this much ado about nothing. It is so comparatively easy for him to grow these *Oncocyclus Irises*, that he may perhaps not realise the difficulty which meets us here whenever they are tried. From my remembrance of Baden-Baden in the early summer I should say that the *Irises* must be roasted there to a certainty, and the only wonder is if the gardener himself can stand the conflagration. But there is a very

as gathered or kept until spring, the former plan being, however, the better one. The following are some of the best, viz. :—

C. ATKINSONI is perhaps the most graceful species belonging to this large genus of useful garden plants. It does very well in the ordinary flower border, and seems specially well adapted for small beds, or even mixed with summer bedding plants, as it lasts a considerable time in full beauty, and supplies a bright colour not too plentiful amongst that class of plants. Successions may be had by sowing at different times, the first and second to be made in pans and placed in a heated house. The young plants should be pricked out when ready to handle and be gradually hardened off until fit for planting in the open border. It generally grows from 2 feet or 3 feet to 4 feet in height, and has a fine graceful habit. The flowers are rarely less than 1½ inches in diameter, set off charmingly by a dark purple blotch at the base of the ray florets. It is found on river banks in Oregon, Washington, &c., and was first collected by Douglas.

C. CARDAMINIFOLIA.—This species is much dwarfer in growth than *C. Atkinsoni*, although the general appearance of both somewhat corresponds. It grows from a span to 1½ feet in height. The flowers, which are each from 1 inch to 2 inches in diameter, are of a soft yellow hue, and extremely handsome in the dusk. It is an excellent plant for cutting from, and as it is easily raised from seed, large quantities may be readily grown for that purpose. It may also be used, in the case of *Atkinsoni*, for bedding, as it has a neat, compact habit. It comes from the low grounds in West Louisiana and Texas, and flowers with us in autumn.

C. ARISTOSA.—This is also an annual, and produces large golden yellow flowers. The stems, which grow from 1 foot to 3 feet in height, carry a large, flattish paniced head of clear golden yellow flowers 2 inches or more in diameter. The flowers, which are set on longish stalks, are surrounded by an involucre of eight or ten bracts. It blooms in September and October, and is plentiful in swamps in Michigan, Iowa, Missouri, &c. It may be sown with the others early in spring in the open border.

C. DRUMMONDI.—This species (here figured) is very distinct, both in flower and leaf, from all its associates. It is best adapted for pot culture and makes an excellent plant for the greenhouse, as it flowers with the greatest profusion all through the autumn months. It rarely exceeds 2 feet in height. The flowers, which are borne in pairs or singly on long slender stems, are over 2 inches in diameter and of a very rich golden yellow. It is found on sandy soil in Texas, &c.

C. CORONATA is a dwarf species common in gardens, where it is generally very effective, especially when placed near the front of mixed borders. It is very free-flowering and continues a considerable time in perfection. It grows from 1 foot to 2 feet in height, is sometimes quite hairy, and at others free from hairs, the stems being shiny. The flowers, which are bright yellow, each measure from 2 inches to 3 inches in diameter, the outer edge of the rays being prettily notched, and with brown or purple lines or spots towards the base. It flowers late in summer and autumn, and is a native of E. Texas.

C. TINCTORIA.—This is perhaps the most variable of all the Tickseeds, having given rise to various named garden forms, amongst which are *C. bicolor* and *C. bicolor nana*. The latter is very dwarf, and could, no doubt, be utilised in many ways as a decorative plant. *C. tinctoria* grows from 2 feet to 3 feet in height. The flowers are rarely less than 2 inches in diameter, purple or varied, and very showy; they are produced in summer. This species comes from low ground in Texas and Arizona. D. K.

Balsams.—Old associations with these flowers lead me still to have for them a great liking. Wellgrown Balsams, if also well bloomed, are very handsome plants, whilst those thickly set with good double flowers in several colours are best. It is not often that we see decently grown Balsams now in pots, and rarer still in the open ground. For bedding they are held in light esteem, and yet are really charming, dotted thinly on a carpet of some neutral colour; indeed, it is outdoors that plants usually show the best form. The very early autumn frosts have seriously discounted Balsams as outdoor plants, although Begonias are nearly as tender, but then the latter whilst in bloom are far more gaudy. Certainly not the largest, but some of the neatest and most compact of Balsam plants I have ever seen have been lifted from the open ground, put into good-sized pots, and thus encouraged to flower, and profusely too, during the autumn under glass. It always seemed to me in the planting out of Balsams to keep them from becoming all leaves and branches, burying the bloom in a dense mass of foliage, that instead of first getting the seedlings singly into pots, and after finding them well rooted, planting them out with balls of soil attached, which always resulted in far too much branch growth; the best corrective was found in sowing thinly,

allowing the seedlings plenty of light and air, then when some 5 inches in height, stout and well rooted, lifting them very carefully and dibbling them out into the open ground. They soon get hold, and then grow strong, never becoming too woody, and presently are literally smothered with fine double flowers. Such plants look beautiful in that way, or lifted and put into pots to flower inside. It was but needful if the weather was dry to water the plants over-night for lifting next day. How beautiful the whites, pinks, mauves, carmines, scarlets, crimsons, purples, and other self-coloured or even striped or spotted forms. It is not too late now to sow seed in shallow boxes or pans under glass, as from such a sowing scores of strong plants might be had to dibble out as advised early in June.—A. D.

ANEMONES.

ON a bright, sunny spring day about the end of March or beginning of April it is pleasant to make one's way through budding Larch and tangled brushwood, all showing signs of revived life, and then to come suddenly on a fine open glade carpeted with Wood Anemone (*A. nemorosa*) and fringed with Primroses, which here and there make an inroad upon their more delicate neighbours. The wild Anemone is indeed one of our most beautiful spring flowers, and did it not belong to our own land it would be considered worthy of careful cultivation. As it is, we can generally get it in great abundance in woods and often in fields which border on woodland, and perhaps were it not for the sake of finding the pale flowers of this beautiful wild plant we should not be tempted into the woods, and so should lose one of the most delightful enjoyments which spring-time can afford. The double form of *A. nemorosa* is common in our gardens and well worthy of a place in a partially rough corner, where its beautiful foliage and fine double white flowers will be useful both for gathering and for covering the ground in spring.

The eccentricities of plants are many. Some things go on with regularity, flowering without any trouble if at all properly cared for; other things are strangely rebellious and puzzle us very much with their wilfulness. Amongst these latter I place *Anemone sylvestris*, or the Snowdrop Anemone, and if I interpret rightly what has been written about this Anemone in the pages of THE GARDEN, other people find the same difficulty. Several years ago I procured some of this *A. sylvestris*, and it flowered, of course, the following season, but that was all I could say about it. As years went on it behaved like a veritable weed, and rambled on, as the poor say, "wrestled" all over the small rockery on which it was placed. But as to flowers, well, I do not think I had half-a-dozen any one year. This season, which is certainly one of the most remarkable for abundance of flowers of all kinds, my Snowdrop Anemone has at last condescended to bloom, and has been most lovely with a perfect profusion of its white blossoms. But why? My neighbour's gardener says it wants sun. Well, it has a fair amount of sunshine in my garden. Another says you must take care to keep the plants round and tidy, and cut off all stragglers. I have not done that; on the contrary, this most wilful thing has thrown out shoots more rapidly than a Violet, and I have let it alone, feeling it is one of those things, like the Winter Heliotrope (*Tussilago fragrans*) or the Japan Anemone, which will have its own way. So it has been let alone, and it rewards me this year for my kindness.

Those who love to look for the earliest flowers of spring in the outdoor garden, even before the frost and snow of January are over, have a great treat in *A. blanda*. It comes up defiantly, and apparently indifferent to the short days, cold air, and lack of sunshine. This Anemone is even prettier as an individual flower than *A. apennina*, but it can never equal the latter in producing lovely sheets of pale blue, nestling among finely cut leaves, which only show themselves sufficiently to make the blue more perfect. *Apennina* is one of the glories of later spring, the

latter part of March and early April. It has no scent and it closes on dark showery days, but when one of those delightful warm sunny April days comes with its clear sunshine, then this *Anemone* is lovely wherever it is growing. It is one of those things which will do almost anywhere. It will flower under the shade of a tree, or it will throw itself against a stone, or it will grow in a bed right out in the sunshine. It is well to have it in all sorts of places, and by this means the season is prolonged. On the whole we may say that *A. apennina* is one of the very best things to get when ordering hardy roots and bulbs in autumn, for, unlike *A. sylvestris*, it will without doubt give you a quantity of flowers, and it is one of the very cheapest plants in the autumn catalogues. Would that we could say this also of *A. blanda*, but as yet the price of this earlier *Anemone* is very much higher. Probably it will rapidly become cheaper, as there is no reason why it should not, seeing that it increases rapidly and has abundance of seed.

A. fulgens comes very early if placed in a warm position, and its brilliant flowers are most useful for gathering. *Aldboro'* is, I suppose, a variety of fulgens. It flowers with me at the same time, but the scarlet is more vivid and the white at the base of the petals is an addition to its beauty. There is some uncertainty as to the time of flowering of this early *Anemone*. It may be that imported plants will flower earlier the first year than after they have become accustomed to our climate: I have not grown fulgens long enough to determine whether this is so or not. Even a week in spring makes a difference when we are longing to see our flowers coming out again, so that it is worth while to take pains to secure this *Anemone* from late frosts and to protect it slightly from damage at the rough and dark time of the year, when we may expect to see its scarlet flowers. It is somewhat strange that the scarlet flowers of *A. fulgens* reach us in fairly good condition after travelling all the way from the south of France, and that once revived after being taken out of the post box they will last for an extraordinary time in a room. *Anemone ranunculoides* is extremely pretty, but were it not for its more fragile character it might almost pass for a Celandine. A bed of mixed *A. coronaria* is always attractive, but unless care is taken there will be a prevalence of dirty white and pale blue colours. Where the colours are strong and good and there is sufficient scarlet intermixed, few things are more bright and beautiful. As a rule, this *Anemone* will flower about twelve months after the seed has been sown. If it can be let stay in the same place to flower again, so much the better. The Japanese *Anemones* take care of themselves, but *Honorine Jobert* is so tall and beautiful in late autumn, that anyone would bear with its weedy habit for the sake of its lovely white flowers. They come at a time of year when flowers are beginning to get scarce, and are once more in request, though not altogether so delightful as in early spring. There are many other *Anemones* with which I am not acquainted, but the whole family is pretty and interesting, and the more we grow them the more we shall like them and wish to see them at all times of the year. A GLOUCESTERSHIRE PARSON.

Basal rot in Daffodils.—I have had an experience similar to that recorded by Mr. Young. At the beginning of the winter I potted up some bulbs of *Horsfieldi*, *Colleen Bawn*, *cyclamineus*, &c., and stood them in a cold house. I covered them with mats when we had the severe frost in January, but they got frozen as hard as a brick. Finding later on that many did not start, I turned them out and they were decayed at the base. In the open ground I have never had a single bulb go off in this way.—J. C. B.

Alpine Auricula William Brockbank.—This is a very fine alpine indeed, supposing that what I have under this name is true to character. It is a very late bloomer, never flowering with me until a week or more after the London shows are

over. In Mr. Turner's catalogue, William Brockbank is described as having a white centre and dark ground, shaded with violet. But it has a bright golden paste, and there is reason to believe the description in the Slough catalogue is incorrect. A dozen capital alpine Auriculas for a beginner will be found in Athlete, Charmer, Countess, Grandes, Hotspur, Lady H. Grosvenor, Magnet, Mrs. Dodwell, Mrs. Ball, Olympia, Samuel Barlow, and Supreme.—R. D.

Globe Flowers.—A large group of these planted some years ago beside a little ditch has given no trouble and needed no attention, but as each flowering season comes round the plants are very much in evidence, never failing a fine display of bloom. They hold their own perfectly even amongst such perennial weeds as Docks and the Meadow Sweet, whilst, of course, Grasses and other annual weeds that affect damp situations have no chance at all. The present season is not quite in their favour, and in the garden borders they would doubtless have a very bad time of it from want of water. In their present situation they are not quite so tall as in wetter years, but, all the same, there is a rich mass of leafage and a bright glow of blossoms. In addition to the common variety (*T. europæus*), many varieties have been made; but there are more names than distinctions, and for bold effects in a wild state in addition to the type there need only be planted about three other kinds. The finest of all is *giganteus* or *dauricus*, a fine kind distinguished by its strong growth and great globular blooms, the flowers being of a lemon-yellow colour. *Trollius asiaticus*, too, is very fine, its leaves more divided than those of the previous kind, and the flowers not quite as large, but of a rich yellow colour. *T. napellifolius* is also very fine, producing a large bloom more deeply coloured than that of any other bordering upon orange. Wild gardening is very successful when the right things are placed in the right place, and anyone should succeed with Globe Flowers where they can always have an abundance of moisture.—A. H.

BUNCH PRIMROSES.

SOME of the best strains of garden Primroses comprise a good percentage of rich yellow flowers, and these are undoubtedly the most generally admired. The shades of yellow range from primrose to the deepest orange, and all are very gorgeous on the plants and singularly effective when cut. A dining-table wholly decorated with low fish globes filled with sprays of coloured Ivy leaves and trusses of these yellow Primroses would be both novel and taking, or more so than any ordinary arrangement of tropical or greenhouse flowers. The yellows are the making of beds of mixed Primroses, and those who delight in a mass of one colour should try the effect of a bed wholly filled with this colour in one or several shades. Seedlings are always to be preferred to plants obtained by dividing the old stock, the former invariably flowering the more strongly. Seed of both white and yellow forms can be had in separate packets, and if this is sown in gentle heat not later than March, the seedlings can be grown to a serviceable size by the autumn, flowering grandly the following spring. Any raised from now to midsummer would scarcely attain to a flowering size this year, but might be grown into extra large plants during the following summer. Those, therefore, who may wish to have an extra number of yellow Primroses, and have missed the best time for sowing seed, should mark all the best they have flowering in their beds or borders with a view to saving and propagating these. Soon after the last flowers have faded, or, if seed is saved, directly this is gathered, the plants ought to be taken up, carefully split into as many pieces as possible, each with a few roots attached, and these divisions be then dibbled out into a cool or partially shaded border. Both divisions and seedlings thrive during the hottest summer in the fruit borders, that is to say, among the trees adjoining kitchen garden walks, especially if leaf soil or well-decayed manure has been freely

mixed with the ordinary garden soil prior to putting out the plants. There ought to be no delay in dividing the plants after they are once lifted from the beds, and it will be found that the grandest display will be made next season if the beds are freshened up with loam and decayed manure.—I, in *Field*.

Solomon's Seal.—It might almost be said that this will grow anywhere, and the marvel is that one does not see great breadths of it in gardens. Instead of discussing the need or otherwise of digging between shrubs, all available ground should be planted with this and kindred things, and the question of clearing would settle itself, for the weeds would have little chance. This is one of the many spring flowers that might be planted in gardens and woods and left alone, aye even forgotten, for assuredly when its season comes round it will make itself manifest. I went recently into a little coppice where I knew the Solomon's Seal was planted about six years ago, and there was no difficulty in finding it, for it appeared to be spreading through the place, and in one spot, beside a little constant running stream, it surprised me with its stature and bold grace. The finer stems were over 4 feet in height. A large group in the garden could show no stems finer than these.—A. H.

American Wood Lilies.—It is a little puzzling sometimes how a plant sets aside our notions of what is best for it and thrives unaccountably well. A moist spot in a rich peaty or leafy deposit is supposed to be the thing to grow the Wood Lilies to perfection, and yet for several years we have had a charming display from a group of plants in an Azalea bed, of which the soil is cold, heavy, and retentive of moisture. The plants have not always attained their full stature, but invariably have been good in leaf and blossom. Among many spring flowers few things are more prettily attractive than a good group of the Wood Lily. The finest of the family is *Trillium grandiflorum*, and by its erect habit it shows its great white blooms to advantage. A few plants, however, of *T. erythrocarpum* show that kind to be of considerable merit and very distinct from *T. grandiflorum*. It is larger in all its parts, and the flower hangs from a long slender stalk above the leaves, whilst the colour is creamy or greenish-white with violet interior at the base of the flower.—A. H.

Antirrhinums.—"R. D." mentions taking off the tops of the autumn-struck plants in March, with a view to having plants to flower in the autumn. I grow a goodly number of them for the summer and autumn display, especially an extremely fine type of a white-flowering kind, and I find if I take off the tops it retards their flowering early in summer and does not prolong the autumn display. If the plants are stocky in the spring, with a healthy clean leader, in all about 6 inches or 8 inches high at the time of planting, the second week in May they commence to flower at once from the leading shoot, side growths springing out at the same time. By cutting off the first crop of seed-pods when the flower-spikes are past, the plants will continue to bloom well into the autumn. I think there is a great future for the Antirrhinum as a summer decorative plant for the beds and borders now that we have types distinct in colour, such as white, yellow and red. To persons with little accommodation for the choicer subjects requiring heat, Antirrhinums are especially valuable.—E. M.

Dahlias trained to hedges.—Not only did the late Mr. Wildsmith make an effective display with his single Dahlias trained in this way, but he grew the Cactus varieties in the same way and with equal effect. I have practised this way of growing and training not only single and Cactus varieties, but the double or show kinds as well with equal results. The hedge to which the Dahlias are trained flat-wise here is one of *Berberis Darwini*, close upon 5 feet high. This is clipped closely in summer to a perpendicular face, and in this way it makes a capital background for the

various coloured Dahlias. Three small wires run the whole length of the hedge, and, secured to the branches, are almost hidden by the leaves. To these wires the shoots of the Dahlias are trained, the result being that we get all the flowers to look one way, giving us a mass of colour. For the sake of variety, I place several strong plants of *Helianthus Soleil d'Or* among the Dahlias, these when in flower giving a pleasing contrast of colour. At the base of the Dahlias, to hide the stems, I have a row of white *Antirrhinums* or tufted Pansy Mrs. Grey—one of the best of summer-flowering varieties with white flowers.—E. M.

Planting Carnations.—To layer Carnations early and plant them out when rooted, so that they get established before the cold weather makes its appearance, is undoubtedly a step in the right direction, that is to say, with the hardy kinds, such as Raby Castle, Old Crimson, Reynolds Hole and many others. But such beauties as Lady Henry Grosvenor, Germania, Vice-Chamberlain and other tender varieties must be wintered under glass. This is my Northampton experience.—R. GILBERT, *Burghley*.

ALPINE AURICULAS.

THERE can be very little doubt that in the estimation of the general public the alpine Auriculas shown at the recent exhibition at the Drill Hall were much more attractive than were the show sorts. These latter have such minute points, that only those who thoroughly understand them and can appreciate the diverse qualities shown by the various flowers are fully able to admire them. The alpinists speak for themselves. Their points are less complicated, their markings more clearly defined, and even apart from these florist's elements the flowers give more of attractiveness and of effect. They, too, are more easily cultivated, and although it may seem a sin to expose the beautiful flowers of the finer varieties to outdoor elements, yet many of these varieties will thrive well in the open and bloom profusely if properly cared for. On the other hand, the show sorts cut the most deplorable figure outdoors. It is indeed absurd to plant them there. The alpinists of all places look charming in a window box, where the partial light draws all the flowers one way, and a surfacing of Moss or of cocoa fibre refuse protects leafage and flowers from being splashed by rain. True alpinists have no meal, and their paste is not a sort of pigment which is what seems to be the paste of a show flower, but it is an ingrained body colour, the golden or yellow hues being the most beautiful. I do not know why it should be so, but whilst the laced forms seem to give a preponderance of golden centres, the shaded and self forms seem now to give the greater proportion of white or creamy centres, and these latter whilst having admirers have the undoubted demerit of being mutable or changing, varying in depth of hue with age. A true yellow ground hardly varies. Then there can be no doubt whatever that the golden centres the more effectually light up or set off the grounds. It is doubtless true that the pale centres give some grounds or shadings the yellows do not give, and for that reason they are not only tolerated, but encouraged, yet the very whiteness of centres in alpinists always seem to fall short of the clear, beautiful purity of colour found in the paste of the best shows; hence there always seems, so far as they are concerned, to be something lacking. Had there never been golden-centred alpinists we might not have lamented the apparent preponderance of pale-centred flowers. The creams are more objectionable than the whites, for their tints change and often become cloudy or dirty. Looking over the collections exhibited at the Drill Hall I found in Mr. Turner's twelve only four gold centres. These were F. Knighton, Charles Turner, Dash, and a seedling. In Mr. Phillips' twelve, eight had golden centres, Pluto, Fred Phillips, Bronze Queen, and a fine maroon shaded seedling being the best. Mr. Walker's best golden was Florrie Henwood, and Mr. Douglas' best were Gipsy and

Nellie Hibberd. In passing, I would object to the common practice of these Auricula growers putting up plants marked seedlings so plentifully. This is a great nuisance to the public, and especially to reporters. Cannot the committee, who it is hoped are not all exhibitors and growers, frame a regulation that shall prevent the exhibition in classes of any unnamed varieties? It would hardly be tolerated elsewhere. Other good yellow-centred flowers were Saturn, Mrs. J. J. Blandy, Mr. G. W. Palmer, King of the Belgians, old, but still good, Evelyn Phillips, Blackett Gill, International, and Viscountess Chewton. Turning to white and cream grounds, the following were the best: Winifred, Patience, Mrs. Harry Turner, Hotspur, Edith, Defiance, Mrs. Frank Barrett, Roland, Lady Laura Hampton, Mrs. Herold, Magnet, and Hubert. I do not know whether all these varieties are in commerce. It too frequently happens that the public take notes of varieties shown at the Drill Hall which they admire, and then find that they cannot be obtained. That is very misleading. It would help very much were it in all cases declared what sorts were in commerce and what were not.

Auricula nomenclature, so far as it relates to alpine especially, differs very much from year to year. I do not say that the names are altered, but seedlings seem to be so commonly coming on, that a show twelve of one year will be, perhaps, quite diverse the following year; hence the public get puzzled. No doubt it is comparatively easy yet to obtain diverse seedling alpine; far more so than is the case with the shows, because these latter not only are hard to beat, but in seedlings there is often a large majority of inferior flowers. But it is not at all certain that in many respects the newer alpine are improvements. Many are larger flowers, but still coarser. A great defect, I hold, is found in the exceedingly undue breadth of margin or ground as compared with the breadth of the centre. Many, too, have broad and irregular cups, whilst the thrums are open and prominently show the top of the pistil. I do not see that anything is gained in having these unduly large, coarse flowers. By contrast, I think the smaller golden-centred laced forms far more refined and pleasing. Whilst very many of the now exhibited alpine make showy greenhouse flowers, we have a right to look for high ideals at an Auricula exhibition. A. D.

ALPINE PLANTS AT THE REGENT'S PARK SHOW.

YOUR report of the second spring exhibition of the Royal Botanic Society on the 26th ult. gave a description of the method of setting up the collection of alpine plants staged in the class for such exhibited from the Guildford Hardy Plant Nursery, Millmead, Guildford. The schedule required the alpine should be in pots, and they were so arranged on a kind of sloping stand as to be carpeted with mossy Saxifrages of various kinds. The idea was excellent, but in the execution the individuality of many of the plants was to a large extent lost, and so the collection suffered. But it contained a few things of a very interesting character, such as *Phlox Vivid*, a variety apparently of *P. subulata*, having deep pink flowers with a rosy centre, and very free—a charming subject; *P. Lindeniana*, another dwarf form, probably a true species, bearing pale lilac-mauve flowers, and very free; *Sedum Lyonia*, a small shrub-like plant with white flowers, very free; *Viola Stuarti*, white; *Iberis jucunda*, which forms a minute bush, the flowers pink and very pretty, a miniature species of great beauty; *Dracocephalum grandiflorum*, from the Altai Mountains, the plant dwarf and compact, the flowers relatively very large, Salvia-like, and of a delightful hue of bright blue; but it is said to be a shy bloomer even if the plants be healthy, and it is recommended that it be grown in half shade, the soil good rich loam, that it be watered in summer and kept dry in winter; it needs to be protected against the ravages of slugs, which greedily feed upon it. *Ranunculus graminifolius* is a charming plant from the Pyrenees,

dwarf, free, the flowers of a deep golden colour. *R. uniflorus* is a dwarf plant, with small primrose-coloured blossoms. *Aubrietia tauricola* is a very pretty alpine species, bearing pale lilac-blue flowers, forming very neat and compact tufts. *Haberlea rhodopensis* somewhat resembles *Ramondia pyrenaica*, bearing *Gloxinia*-like flowers, four and five terminating a stem; the flowers are lilac-purple with a white throat, and it is said to succeed best in shady nooks on rockwork. *Saponaria splendens*, or *splendidissima*, is a variety of *S. ocymoides*, bearing small bright rosy pink blossoms. The white *Anemone sylvestris* was also a conspicuous object in the unique arrangement.

R. D.

Datura cornucopia.—(G. Hart asks if I know this plant, to which I must answer in the negative. I see it is offered by a New York firm as an outdoor summer plant, and if it is anything like the representation it will be a magnificent Thorn Apple.—W. H. G.)

A beautiful Tulip is the form named *Picotee*. It is one of the more popular of the late-flowering kinds. The flowers are of beautiful shape and clear white, the segments margined with a delicate rose colour, recurve at the apex, somewhat in the style of *T. fulgens*.

A beautiful Iris in full beauty now is *I. missouriensis*. It is a North American species, and makes a delightful mass, the flowers bright lavender, a charmingly soft colour, yellow at the base, and poised on slender stems, whilst the leafage is narrow and of a glaucous tint. It is a type that deserves to be more common in gardens, being free in growth and flower, and in every way a good garden Iris.

The hardy plant house at Kew is full of interesting plants in bloom. We made note of the other day *Dianthus gelidus* and *D. alpinus*, both in full bloom, the white-flowered *Oxalis enneaphylla*, *Potentilla chrysocraspeda*, the flowers of the richest yellow; *Antirrhinum asarina*, pale primrose, the growth straggling, and the leaves glaucous in colour; the exquisite little *Rock Daphne*, *D. rupestris*, and *Primula Forbesi*, besides *Linum arboreum* in fine flower, and a host of other charming things.

The white Wood Lily (*Trillium grandiflorum*) is very beautiful just now in the nursery of Messrs. Barr and Son, Long Ditton. It is grown in a large mass, and the pure white flowers in their collar of green leaves, so to speak, are amongst the more precious things we have in late spring. None of the other species approach this for beauty. It likes a shady, somewhat moist position, a peaty soil for preference, and under such conditions the flowers are larger and the leaves more robust than in open sunny spots. An excellent spot for it is a shady recess in the rockery, where the hardy Orchids and similar plants are quite at home. It is a lovely flower to cut, but unfortunately does not last long in good condition.

Plantain Lilies.—We here appreciate the different forms of *Funkias*. Especially are they effective under the shade of tall Limes and Beeches. In nooks on the Grass, at the foot of the hardy fernery, rockeries, and near the margin of a small pond they are appreciated by all. In our strong soil they flourish well. If planted so that the sun shines on them strongly, the glaucous tint so beautiful in *Sieboldi* quickly fades. For small pots *albo-lineata* is one of the best.—E. M., *Swanmore Park*.

Arums and allied plants may be noted on the sunny narrow border skirting the Orchid and Victoria Regia houses at Kew. Several kinds are in bloom, and present an interesting study. A *Crinum* is in full health and bloom, whilst clumps occur of the strange *Saurumatum guttatum*, which when thus planted has a peculiarly uninviting aspect. The long spathes taper gradually to a point and fall over in a weird way, the ground colour green, richly barred with chocolate-crimson, the spadix being also of considerable length

and of a sombre green tone. It has an objectionable odour, and is distinctly more curious than beautiful, although one must admire the rich and striking colouring of the spathe. *Amorphophallus Rivieri* is pushing through the ground, so that this warm, sunny corner is of more than passing interest at present to those who care for this class of plants.

Pulmonaria saccharata.—This is one of the most attractive of early spring-flowering plants, making the border look exceedingly gay in April and May. The late Mr. Frank Miles once happily described it as the "Shot-silk flower," for that exactly describes the blended colour of the blossoms. It is one of the hardest of hardy plants, and in a few years a large clump is formed. During the summer months the leaves are jewelled with white upon a bright green ground, and in this character it is a really valuable decorative plant, and an object of great beauty in the border. A mass of it mixed with some flowering plants, which while displaying their blossoms would not hide from view the jewelled leaves of the *Pulmonaria*, would have a fine effect. I find in addition to the quality of rapidly extending itself, self-sown seedlings are produced, but so far as my experience goes, they show no variation.—R. D.

GRUBS IN PRIMULAS.

A CORRESPONDENT who lately complained of his Primulas being destroyed by the grub of the black Vine weevil will find prevention better than cure. Indeed, I know of no cure when plants of any kind are infested by this pest. It is in the early part of June that the perfect insect appears, and it conceals itself so cunningly during the day that it is a rare occurrence to see one. They swarm with me, and yet I have not seen more than a score of them in the course of ten years, that is in the daytime. The flying season appears to extend up to, and probably into July, and it is of course during that period that the mischief is done. The eggs are deposited in the soil, and I know of nothing that will destroy them without injuring the roots of such things as Primulas, Cyclamens, Ferns, &c. Where this weevil abounds, the leaf mould is sure to form one of the principal breeding places, and it is just as the eggs are deposited in it that many blooming plants and Ferns get their final repotting. The eggs or newly-hatched grubs are not then perceived, and it is only towards spring that their handiwork can be seen. If the weevils can be prevented from laying their eggs in the compost, the chances of danger are of course considerably minimised, and this I find can be done by covering the leaf-soil with Fern, or anything of a like nature sufficiently thick to hinder the insect from coming to it. It is only necessary to do this during the breeding time of the weevil. Another way, involving more labour, and that has been found effective, is to spread the leaf-mould thinly on a hard floor and run a heavy roller over it. This must be done just as the grubs come to life, say about the middle of July. If done earlier it will have no good result. I do not think that the Vine weevil lays its eggs in loam unless there is something growing in it for the grub to feed on, but I am not certain about peat, and should prefer to treat that in the same way. J. C. B.

Schivereckia podolica.—This quite hardy rock plant is one of the best things in bloom on the rockery at Kew. It is smothered with white flowers and has a pleasing effect in good healthy tufts, blooming freely between the spring and early summer flowers. Ordinary soil will suffice for its culture. Although not a first-rate plant, it is worth growing.

The Lyre Flower (*Dielytra spectabilis*), although not usually seen in gardens near large towns, succeeds well in the Royal Horticultural Society's gardens at Chiswick, where several plants are at present in bloom in a bed near the council room. They do not appear so happy this year as

in some seasons, when the flowers are produced in profusion on the graceful shoots. A bed of it is very charming, and to get success with the plant the soil must be light, yet good, and the position sheltered. Late spring frosts cut down the stems if the position is exposed, and there are many places where it may be planted with effect—on the fringes of shrubberies, in the border, or in the most sheltered nooks on the rockery. The growth is full of grace, and wherever the *Dielytra* can be grown it should be planted freely.

Narcissi on Grass.—Has anyone noticed how much longer the blooms of all kinds of *Narcissi* last in a fresh condition when growing on Grass as compared with those in the ordinary herbaceous border for instance? Especially this season, when everything is quite dried up, I have noticed that the *Daffodils* on the Grass remained fresh long after the others had faded. I presume the Grass on the surface prevents to some extent the evaporation of moisture from the soil.—E. M.

Clematis montana.—This grand climber is in some places this spring less effective than usual, but in others it is blooming profusely. It is so on Mr. Howard's cottage at Coombe Wood, where its masses of white flowers intermingle in some places with the long mauve-coloured racemes of the *Wistaria*, and in others cover gable ends or trail luxuriantly over the roof.

SHOWING ALPINE FLOWERS.

TO THE EDITOR OF THE GARDEN.

SIR,—Notes by you in a recent issue anent the method of mounting and "setting" alpine plants for exhibition raise questions of, as it seems to me, practical and horticultural importance, and if some of your many correspondents will contribute their views, the discussion cannot, I think, fail to be in many ways valuable. Such discussion I believe to be very badly wanted. I shall not, therefore, feel debarred from seeking, if may be, to start it by the circumstance that I was personally interested in the alpine plant exhibits last week at the Drill Hall and the Royal Botanic Gardens which called forth your remarks to which I have referred. The main question seems to be this: Should alpine (or for that matter other) plants sent for exhibition be as tastefully and naturally arranged as possible, or should they preferably be formally staged in bare pots without such setting? And should tasteful and natural arrangement be allowed by the judges to enter as an element into the grounds of their awards? I say "enter as an element," because no one would argue that such arrangement should be alone, or even perhaps chiefly, considered. Culture, choiceness, and other merits should, as of course, weigh even more. Not only, in my belief, is tasteful arrangement often or commonly disregarded by the judges (under the impression possibly that they are not at liberty to regard anything but the strength and gay effectiveness of the plants), but seemingly such arrangement is sometimes deemed by them to be a positive offence on the part of the exhibitor, and counting for points against him. Apparently this was so at the Royal Botanic Gardens recently, where the foreman in charge of the Guildford exhibit, which was placed second by the judges, was called on (in perfectly courteous fashion) to satisfy them that the plants were in pots, and was later informed, in explanation of their award, that the mode of arrangement (marked out for favourable comment by both yourself and your reporters) had been thought by the judges absolutely to detract from the exhibit.

The fault, if fault there be, may not rest, wholly or chiefly, with the judges. They take

their canons, sometimes perhaps against their own better judgment, from bad traditions, or even bad rules. This must perhaps be borne for a time as inevitable. Bad laws must be submitted to as a less evil than repudiation of submission to law. And I for one do not wish to carp at the judges, but merely to suggest whether sounder canons of taste and judgment may not be evolved by outside pressure from the expressed opinions of horticulturists. Similar questions will arise in regard to other than alpine plants. But limiting myself for the moment to them, I suggest that the rules of exhibiting societies should not merely expressly allow, but should even encourage that any exhibit be dressed with as much of taste and natural effect as may be, even though it be added that the exhibit will not be judged by the effect so gained. Surely it is some merit that by a natural mode of setting it helps to excite and satisfy the sense of beauty and of fitness in the spectators for whom it is intended. May I add that I have not troubled you with this communication from any desire to air a personal grievance, real or supposed, but solely because in my view the questions raised need discussing "in the interests of art." H. SELFE-LEONARD.

Hitherbury, Guildford.

BOOKS.

MANURES: HOW TO MAKE AND HOW TO USE THEM.*

THIS is the work of an American author who at the outset admits his indebtedness to a long array of authorities, English, American and otherwise. As he points out in his preface, the work of collecting and reducing to a system the vast literature pertaining to the subject involved an enormous amount of labour and much close study, and, all things considered, he has done his work well. In the handy book of 200 pages before me there is collected a vast amount of information, and which is presented in a form that should render it highly valuable and instructive as much to the gardener as the farmer, though the latter is presumably the more extensively catered for. A great point in its favour is its cheapness. If a work of this complete character had been published in this country the price would have been not less than 5s. per copy. In America they are content with the modest sum of 50 cents, or 2s. 1d., and depend upon recouping themselves in the larger sales that inevitably result. It is true poor paper wrappers are the order of the day, but those who prefer more serviceable covers can easily have their copies bound to their own liking. My contention is that very many good works in this country have but a poor circulation owing to their prohibitive, or at all events high, price, the authors or publishers, as well as the general public, being losers accordingly.

In the book under notice everything bearing upon plant life is briefly discussed, commencing with the elements derived from the air, followed by the elements derived from the soil. The former are not dwelt upon at length, but enough is stated to meet the requirements of the average student. Of the elements derived from the air, viz., carbon, hydrogen, oxygen and nitrogen, it is said that they constitute the greater part of plants, forming from 95 to 99 per cent. of their entire weight; but we are not to suppose from this that the elements furnished by the air are always derived by plants directly from the atmosphere. It is admitted that plants do obtain large quantities of food directly from the atmosphere, but the air-derived elements are always present in soils

combining with other elements in forming chemical compounds, which are gathered as food by the roots of plants. He might have also added that the value of good culture must not be overlooked, as it is only those plants that are in a suitable rooting medium that are in a position to derive much assistance from the elements generally. No matter how plentiful chemical and other manures may be, and their name is legion, a free use of any or several of these in mixture will not render it less necessary to well cultivate the soil, and may, therefore, easily prove a snare and a delusion. The following instructive passages are fully in accord with what I have just advanced, and are worthy of being reproduced in full:—

The original meaning of the word manure was manœuvre, in allusion to tillage, or the working of the land, and hence, probably, came the old farm proverb, "He who tills his land, manures it."

Plant food is, therefore, anything that contributes to the growth of plants, and it is obvious that all plant food must be derived from one or both classes of elementary bodies or their compounds, since it is from the air and the soil that plants obtain all their food. Plant food when added to a soil increases its fertility and consequently becomes a fertiliser. But because plant foods are fertilisers, it does not follow that fertilisers are always plant foods. The soil is a great field of chemical activity, in which Nature is constantly at work, tearing apart and building up innumerable chemical compounds that may or may not promote plant growth, and in this marvellous soil chemistry plants play a most important part themselves. In the intelligent practice of husbandry man not only feeds the growing crops by applications of plant food to the land, but he mixes with the soil a variety of substances which may not be plant foods at all, but which, both by their mechanical and chemical action upon soils, induce a higher degree of fertility, and thus act indirectly as fertilisers.

In the course of his remarks about natural manures, of the great value of which he furnishes abundant proof, it is pointed out by the author that the value of animal excrement is determined more by the quality of food than by any other condition. Most farmers are very well aware that the richest manures are furnished by animals fed on cotton-seed, linseed, and other cake or meal, and such foods as Beans, Peas, and Clover, though not many of them realise the fact that the process of animal digestion adds nothing to the food. Nor do they fully understand that the more solid excrement consists largely of the undigested parts of the food, which parts are mostly insoluble, and therefore are not directly available for plant food. What the writer has to say about urine is only too true of English as well as American soil-tillers. These are his words:—

The urine contains that part of the food which has been digested; it contains the most of the nitrogen and nearly all the potash, and its constituents are all in soluble form. Although the urine is usually much richer than the solid excrement, containing in most cases more nitrogen, phosphoric acid, and potash, it is on many farms allowed to run to waste or is lost by improper fermentation. To avoid this wasteful loss, straw, leaves or sawdust, together with dry earth, peat, muck, or Moss mixed with land plaster, should be used to absorb the urine and to prevent its loss by drainage, and also to absorb any ammonia formed in fermentation.

To how many stalls or stables are tanks provided for the purpose of storing the valuable drainage from them, or in how many instances is the attempt made to absorb the urine on the lines just laid down? If gardeners generally were aware what a glossy green is quickly assumed by the leaves of Vines, Peaches, *Chrysanthemums*, and such like after they have been treated to well-diluted urine, they would more often use [it than at present.

The chapter on composts ought to be well studied, these properly prepared being highly beneficial to many crops, or more so than ordinary farmyard manure, or only dressings of chemical manures singly or in mixture, the former in very many cases having first to do duty as hotbeds, and by the time it reaches a garden is little better than a mass of humus. There is also a chapter on green manuring, and then comes an exhaustive review of artificial or chemical fertilisers generally, with full

* "Manures: How to Make and How to Use Them." By Frank W. Sempers. Published by W. Atlee Burpee and Co., Philadelphia.

directions for their economic purchase, mixture and application. Under the heading "Soil Tests with Fertilisers" are given valuable hints and tables, these enabling farmers and others to study the needs of their soils, a very important matter. The value of sulphate of iron as a manure and an antiseptic is also fully recognised. W. I.

FLOWER BEDS.*

JUST as we have been making some impression on the stupidities of carpet gardening and its professors here, we are horrified to see that the Germans are running riot the same oilcloth designs that we used to glory in some years ago. M. Paul Parey, of Berlin, sends us a book of patterns which might well have come from an oilcloth shop, full of process cuts, diagrams, squares, and ancient parterres, all measured, set out and numbered, so that mortal man is prevented from mistakes in his pattern ambition. There is not a single trace of Nature or anything artistic from one end of the huge volume to the other. No beds are adapted to the ground; everything is for pattern and by pattern. We should like to take the author by the hand and show him a few real gardens not of the carpet order of design. Perhaps we ought not to apply the term carpet to these crude and ugly things, because now-a-days people look for a carpet that is rather tender and soft in colour.

The great drought.—For the last few weeks I have been hoping to see in THE GARDEN, and even in the daily papers, some observations on the great drought we are still suffering from, and which I think I am right in saying has had no equal in the memory of living man. If I am correct, surely this remarkable spring of 1893 will call from scientists and weather prophets some data of previous droughts. Here March 1 was a very wet day; since then not a drop of rain has fallen, except two most insignificant showers that were scarcely enough to damp the pavement. The weather report in the *Times* of May 3 for England (S.), London and Channel, says, "Southerly and westerly winds, varying; very unsettled, rainy; thunder locally." On May 4, in the *Times* weather report it said, "The drought seems to have broken up all over the the kingdom." Verily, in this part of the kingdom there is no sign of the drought, which has now lasted in these parts sixty-four days, breaking up. From a gardener's point of view the outlook is most serious. Herbaceous plants must be dwarf and poor, even with the most assiduous watering. The intensely hot sun has brought on flowers so fast that those generally blooming in June are already out. Roses are bursting forth (and now covered with green fly and blight); Cistuses are here just opening. A bank of *Helianthemum* is a mass of bloom, and Carnations are throwing up their bloom buds fast. The flowers of May are practically over, and June flowers are opening fast. What are we to expect in June? Many flowers have been very lovely; *Gentiana acaulis* I never saw so full of bloom before. Were I to mention all the things that are over and out so exceptionally early I should take up too much of your valuable space, not what I do hope we may soon see in your columns some notes from famous gardens as to this most exceptional and trying season. To those who have been planting extensions of rock work or herbaceous borders this spring I am sure the time has been an anxious one with the long drought and hot sun. *Genista Andreana* is almost fully out, *Dianthus alpinus* fully out, *Aquilegia glandulosa* in full bloom, *Iris susiana* almost over, and *Dictamnus Fraxinella*, if to-morrow is like to-day, will open freely. I mention these few things amongst a host of others, but would like to remark on the extraordinary length of blooming of the lovely *Phlox divaricata*, which has been in bloom here quite a month and is still beautiful. —M. C., *Loarwood House, Billingshurst.*

* "Gartenbeete und Gruppen." By Carl Hampel, Director of the City Gardens, Berlin. Paul Parey, Berlin.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY.

MAY 9.

COMPARED with the two preceding meetings, this was not of such an extensive character. It was, nevertheless, a most interesting and attractive meeting, embracing such a wide range of subjects. Some of the productions present would presumably have appeared at the Temple show instead had it not have been such a forward season. Cut Rhododendrons and the florists' Tulips, hardy Azaleas, and other shrubs made a brilliant display in this line of hardy plants. Of indoor productions, the pot Roses, dwarf Cannas, and Orchids were all well represented. The two former were staged upon the ground on this occasion, a decided improvement upon the orthodox plan. The attendance was good, the interest in these meetings in no wise abating, whilst the lecture was evidently listened to with keen interest as well as profit.

Orchid Committee.

A first-class certificate was awarded to—

DENDROBIUM BENSONLE ALBUM, a charming variety with pure white flowers, save a large golden blotch upon the lip, the broad margin being white also. This novelty had the appearance of being a seedling; at any rate, it had more vigour in it than is usual in the normal type of the plant. If a seedling, it may have had more strength infused into it by its other parent. From Mr. T. Statter, Stand Hall, Manchester.

Awards of merit were voted to—

LÆLIA PURPURATA LOWIANA, a very distinct form of this popular and showy Orchid; the sepals and petals of a purplish blush colour with its most distinguishing characteristic in the lip, this being of an extremely rich velvety purple throughout; evidently an imported plant. From Messrs. Hugh Low and Co.

ODONTOGLOSSUM CRISPUM DE BARRI CRAWSHAY.—A large form of this well known plant with very distinct markings; the spike, a vigorous one, bore ten flowers of large size, the ground colour white, with the rosy flush faintly seen, and light chocolate-brown bars and blotches. From Mr. De B. Crawshay.

CATTLEYA HYBRIDA HAROLD (*C. Gaskelliana* × *C. gigas*).—A very pretty hybrid, not so fine certainly as *C. gigas*, but probably better than *C. Gaskelliana* as usually seen; the sepals and petals are rosy pink, the lip with a rose coloured blotch, showing in its form something of *C. gigas*; the entire flower some 7 inches across. From Mr. Norman S. Cookson.

CYPRIPEDIUM CHARLES RICHMAN (*C. bellatulum* × *C. barbatum superbum*), in which the form most decidedly is that of the former parent, but into which had been infused the bronzy purple of the latter; the spotting is much more profuse, and also more minute than in *C. bellatulum*, the foliage quite of the *C. barbatum* class. From Mr. Charles Richman, Springfield, Trowbridge.

A very pleasing and effective group was staged by Mr. Darnell, Stamford Hill, comprising *Lælia purpurata*, *Cattleya Mendeli*, *Dendrobium thyrsoflorum*, *Odontoglossum Roezli* and its white variety, being finished off with dwarf fine-foliaged plants, &c. (silver Flora medal).

Messrs. Pitcher and Manda, Swanley, Kent, had another group, mainly composed of *Cattleyas* and *Lælias*, with a few *Cypripediums*. *Cattleya Mossiae* in good varieties, *C. Skinneri* and *C. Gravesiana*, a very fine *Cattleya*, nearly related to *C. Mossiae*, but somewhat larger, were the most conspicuous. This group made a good show (silver Banksian medal). Messrs. Sander and Co. had a small group of choice varieties in good condition, amongst which were fine forms of *Cattleya Mossiae*, one named splendens being the best, in which the lip was extra large. *Sobralia macrantha* bore one large flower, the lip being fully 5 inches across. *Aerides Savageanum*, a distinct dark rosy coloured

variety; *Cœlogyne Dayana*, *Odontoglossum Andersonianum* hemileucum, with pure white ground colour and small brownish spots; *Odontoglossum hastilabium* and *O. luteo-purpureum*, the latter in two distinct forms; *Cypripedium Curtisi* and other varieties with *Oncidium roraimense* were also included. Messrs. Veitch and Sons showed their choice hybrid *Lælio-Cattleya Hippolyte* (previously certificated), its apricot-coloured flowers being so remarkably distinct. *Dendrobium Mentor* (*D. superbum* × *D. primum*), with light rosy purple flowers, having the promise of being seen much finer with age and more vigour, came from the same source. Messrs. Shuttleworth and Co., Bradford, Yorks, showed *Oncidium macrochilum* (Charlesworth var.), with large flowers richly coloured in bright yellow and chocolate-brown; also *Odontoglossum* sp. from Peru, of small growth, but distinct, and a fine spike of *Oncidium serrulatum* of a good variety. Mr. De Barri Crawshay had another fine form of *Odontoglossum* in *O. crispum* Miss Florence M. Bovill, which was shown at the previous meeting, but now fully developed; this is a deep coloured form. *Odontoglossum crispum guttatum*, from the same source, has very broad sepals and petals. *Cypripedium Evenor grandiflorum*, a very prettily marked hybrid of *C. concolor* parentage to all appearance, was shown by Mr. White, Arddarroch, N.B. From Major-General Berkeley, Southampton, came *Dendrobium hercoglossum*, a very minute species of erect growth and bearing rosy-purple flowers, and *D. transparens album*, a lovely variety with delicate white flowers and violet markings in the lip; *Galeandra nivalis* being also included. From Mr. R. White, Crayford, Kent, came *Dendrobium sulcatum*, an old Indian species of amber colour, in form after *D. thyrsoflorum*, and *Cyrtopodium cardiochilum*, a pale yellow species.

Floral Committee.

Altogether there was a good number of subjects before this body.

First-class certificates were awarded to—

DRACÆNA SANDERIANA, shown also under the name of *D. thalioides foliis variegatis* (Braun). This is an African species which gives promise of being an exceedingly useful decorative plant. In growth it is quite distinct from most *Dracenas*, coming nearest to *D. Goldieana*, another African species, but of much lighter habit than this latter kind. The leaves merge into the leaf-stalks, being distinctly and broadly margined throughout with silvery white and a bright green centre, their breadth being from 2 in. to 3 in. and from 6 in. to 8 inches in length, the growth slender, with the leaves at greater intervals than in other kinds usually grown. Mons. Linden upon the exhibition card states that it was discovered by Mr. Braun in 1888 in the Cameroons, Africa, and was sent to the Imperial Botanic Gardens, Berlin, the plant shown being the original one introduced. Messrs. Sander and Co. state on their card that it is a new species from Africa introduced through them by Mr. Johannes Braun, stating further that they have acquired the entire stock, and that no plants thus far have been sold. Coming thus from Messrs. Sander and Co. as *D. Sanderiana* and from Mr. Linden as *D. thalioides foliis variegatis*, there must be some confusion, or else it has been sent home by two persons of the same name. Leaving this discrepancy aside, it is without doubt a useful plant.

ULMUS WREEDI AUREA.—A golden yellow form of Elm, with small foliage and dense growth; this should prove an acquisition to hardy trees. From Mr. Leach, Albury Park Gardens, Guildford.

MAGNOLIA HYPOLEUCA.—A very distinct species, with rather small, pure white flowers when first expanded, fading off to a creamy colour with age. In form they are somewhat globular; the anthers being of a reddish shade add to its distinctiveness; sweetly scented, a deciduous species, but with the flowers and foliage both developed in the specimens shown. From Messrs. Veitch and Sons.

RHODODENDRON HELENE SCHIFFNER (hardy section), with pure white flowers freely produced

in globular trusses, the foliage vigorous and the growth compact. From Mr. T. J. Siedel, Dresden.

TILLANDSIA LEODIENSIS.—A vigorous growing, but compact bromeliaceous plant, with pale green recurved foliage and large showy scapes of an orange-scarlet at base, shading off to a paler shade, the flowers being greenish yellow. From Messrs. Veitch and Sons.

BILLBERGIA SANGUINEA, which has large showy bracts of a deep scarlet colour upon the lower portion of the flower-spikes, the flowers being purplish, with a green base—another distinct Bromeliad. From Messrs. Shuttleworth and Co., Bradford.

VIBURNUM Plicatum (type).—A very showy hardy flowering plant that bids fair to be a most decided acquisition, being most profuse in producing its flowers in long racemes, these being pure white, the corolla being, as in the case of Hydrangeas, the most attractive portion. By its style of growth this should prove a valuable plant for walls. From Messrs. Veitch and Sons.

CYCLOBOTHA AMGENA.—From Oregon; an undescribed species of a dull pink colour, very curious as a botanical plant. From Mr. Elwes, Andoversford, Glos.

Awards of merit were voted to—

BEGONIA (double tuberous) R. B. PARSONS.—A distinct variety with medium-sized flowers, very full and compact, deep rosy pink in colour, the habit of the plant excellent and the flowers freely produced. From Messrs. H. Cannell and Sons.

BEGONIA HECTOR.—Of the same class as the foregoing with flowers of an intensely deep vivid scarlet, full and finely formed, the best in its colour yet seen. From Messrs. Cannell and Sons.

CANNA SOPHIE BUCHNER (dwarf flowering section).—A vigorous growing variety with rich massive foliage and large spikes of broad well-shaped flowers of a bright vermilion shade. From Messrs. Paul and Son.

PHYLLOCACTUS PLATO, with flowers of the same shade of colour as *Cactus speciosissimus* minus the violet shading, but larger in size, the growth flattened in shape, a remarkably fine hybrid. From Messrs. Veitch and Sons.

Several miscellaneous groups were exhibited, the finest being that from Messrs. Veitch and Sons, which comprised a choice selection of hardy plants and shrubs (flowering and fine-foliaged) set up in their usual characteristic style and forming the most attractive exhibit of the meeting. These comprised *Spiraea confusa* and *S. astilboides*; standards very effective *Azalea mollis* in various colours, profusely flowered; *Cytisus scoparius Andreanus* in good condition, with standards of *C. scoparius*; *Azalea mollis sinensis* hybrids, profusely flowered; *Rhododendron Rosalie Siedel*, pure white; *Cercis siliquastrum* (the Judas Tree), *Azalea rustica* in variety, as *Virgile*, pale straw colour; *Freyia*, salmon-pink; and others; *Magnolia tripetala*, a seldom seen species, and *M. acuminata*, another choice kind; *Chionanthus retusus*, with clusters of pure white Jasmine-like flowers; *Lilium Harrisii*, and the finely coloured forms of Maples, introduced by the firm from Japan, made in all a very choice group (silver-gilt Flora medal).

Messrs. W. Paul and Son contributed a fine group of pot Roses, chiefly of sorts raised by the firm, comprising such as *Spenser*, a beautiful bright blush-pink, very full; *Clio*, a grand Rose with large shell-like petals, the individual flowers large and full, the colour a pale blush, habit extra vigorous; *Danmark* and *Duke of Albany*, both after, but distinct from *La France*; *Zenobia*, a rose-coloured Moss (standard); *Crimson Queen*, a fine decorative Rose of robust growth; also cut blooms of *Ulrich Brunner*, extra fine; *Jean Ducher*, *White Lady*, *Mme. Hoste*, *Sappho*, *Merveille de Lyon*, *Belle Lyonnaise* and *Medea* (award silver-gilt Flora medal). Messrs. Barr and Son contributed a grand collection of late Tulips (florists' varieties and species) in extensive variety, many of the latter being valuable as decorative flowers. These would have been improved had they been set up in green Moss instead of upon white paper, which was alto-

gether out of character (silver Flora medal). From the same source, receiving a similar award, came a large assortment of hardy herbaceous plants and cut flowers, including *Anemone palmata alba*, *Helenium Hoopesii*, a rich chrome-yellow, with *Pæonies*, *Irises*, *Daffodils* and *Spiræas*, altogether making a fine display. From Messrs. W. Cutbush and Sons came a group of profusely-flowered *Ericas*, as *E. Cavendishiana*, *E. Spenceriana*, *E. ventricosa grandiflora*, *E. erecta*, blush-white, very free, and *E. candidissima*. *Lachenalia biloba* major and *Cytisus scoparius Andreanus* were also well shown (silver Flora medal). Mr. Tasker, Middleton Hall, Brentwood, sent another group of dwarf Cannas, finely flowered, making a very showy exhibit, including such good sorts as *Mme. Crozy*, *Amiral Courbet*, *Paul Bruant*, *Souvenir de F. Gaulain* and others (silver Banksian medal). From Messrs. Paul and Son came cut examples of *Azalea mollis* in the best varieties; also of several choice named and seedling *Rhododendrons*, comprising of the former such as *Sappho*, *Blandyanum* and *Broughtoni*, and of the seedlings some very promising crosses between *Blandyanum* and *Fortunei*, of which further note will be taken (silver Banksian medal). Mr. F. Cant, Colchester, had another superb collection of cut Roses (Tea-scented kinds), making a really fine exhibit. The finest were *The Bride*, *Souvenir de S. A. Prince*, *Innocente Pirola*, *Mme. Lambard*, *Francisca Krüger*, *Mme. de Watteville*, *Sunset*, *Marie van Houtte*, *Ernest Metz*, *Waban*, and *Catherine Mermet* (silver Banksian medal).

Messrs. Shuttleworth and Co., of Peckham Rye, and Fleet, Hants, staged a good assortment of hardy herbaceous and alpine plants and cut flowers, which made a very bright exhibit; these included the best things in season, as the earlier *Iris*, with *Pyrethrums*, *Pansies*, &c. (award silver Banksian medal). The same firm had a good group of useful decorative plants, fine foliage and flowering, including a good form of *Lælia purpurata* (award bronze Banksian medal). Mr. G. Mount, Canterbury, set up two boxes of fresh flowers of cut Roses in good varieties, including *Maréchal Niel*, *Mrs. John Laing*, *Catherine Mermet*, and others (award bronze Banksian medal). Mr. Charles Turner, Slough, had a grand exhibit of the new *Polyantha Rose*, *Crimson Rambler*, with flowers of the richest crimson colour, produced in dense trusses in a most profuse fashion. This fine Rose will by the appearance of this exhibit make its mark as a garden variety.

The Hon. E. H. Ellis, Rosenan, Datchet, showed a singular-looking variety of *Kämpferia*, which produces its purple and white flowers close to the soil before the leaf growth starts. Lord Foley, Ruxley Lodge, Esher, showed *Hippeastrum solandreflorum*, with a long tube-like white flower more in the form of a Lily than an *Amaryllis*. Mr. T. S. Ware had a few fine flowers of his pure yellow self *Carnation Pride of Great Britain*, which are of extra size and very full. Messrs. H. Cannell and Sons had a fine boxful of cut blooms of immense size of their fine strain of tuberous *Begonias*, both single and double. Mr. Elwes had a few choice kinds of *Fritillaries* and *Cyclobotras*; of the former, *F. recurva* is a fine orange-scarlet, and of the latter, *C. pulchella* is a beautiful pale yellow variety.

Fruit Committee.

There were some good exhibits before this committee. Strawberries, Figs, and Melons were well shown. There were also some good vegetables, the Tomatoes and Potatoes being remarkably fine.

An award of merit was given to—

MELON INGESTRE HYBRID, a cross between *Countess* and *Hero* of Lockinge. It is a large white-fleshed variety, beautifully netted, slightly ribbed, with bright golden skin and rich musk flavour. This Melon has been shown on two previous occasions late in the year. From Mr. E. Gilman, Ingestre Gardens, Stafford.

A seedling green-fleshed Melon was sent by Mr. Richings, gardener to Dr. Frankland, The Yews, Reigate, of much promise, but not nearly ripe. The committee requested it to be sent again. Mr.

W. Iggulden sent Noble Strawberries grown in the open, the plants when in bloom having been protected, thus showing the earliness of the season, the favourable position the plants are grown in, and the value of Noble for early fruiting.

From Aldenham House, Elstree (gardener, Mr. Beckett), came a nice dish of British Queen Strawberry of large size and good colour. From Syon House Mr. Wythes sent a box of twenty-four Brown Turkey Figs, very fine fruits. From the last named were also sent fruiting branches of the Old Red Tomato, bearing heavy clusters of ripe and green fruit. These were sent to show its value as an early variety when grown through the winter. A dish of Perfection Tomatoes, also a dish of Snowdrop Potato of large size and with clear white skin were staged by Mr. Beckett. Mr. W. C. Leach, Albury Park Gardens, sent a new Bean named *Delicious*; this may be termed a hybrid between the dwarf French Bean and the runner. It is very much like Sutton's Tender and True, a new Bean of great merit, certificated at Chiswick recently. The pods are broader than those of Canadian Wonder, white, and produced in great quantity. These had been grown in a late Peach house. Mr. Leach also sent Chelsea Gem Peas, a nice dish gathered from plants in the open planted January 25 and ready early in May, thus showing its earliness. Duke of Albany in pod and Autocrat in bloom and planted at the same time were also shown. Mr. Leach also contributed several varieties of Lettuce, the best being Tennis Ball and Perfect Gem. Leach's Winter White, a Cos Lettuce, is stated to be the earliest Cos variety grown. Brown Cos, which was sent for comparison, was much later. Mr. Bond, Elstead House, Godalming, sent Veitch's Earliest of All Cabbage, sown in heat in January and ready for use in May.

Professor Cheshire, in his lecture on "How to Solve Chemical Questions Concerning the Soil without Chemistry," stated that the time allowed would not permit him to go as thoroughly into the matter as he could have wished. He also regretted it would be impossible for him to show some of the experiments he had intended to do. He stated that every gardener and cultivator stood at a great disadvantage, as they often did not know the wants of the soil or its requirements. There were twelve kinds of food upon which the chemist relied. These he named and gave the component parts of each, and demonstrated on the blackboard the value of each for the food of plants. Leguminous plants rob the earth greatly, and mostly without giving back in food any part of the plant. Though there were twelve kinds of food, it did not mean that each of these was necessary to the plant; indeed, the gardener could well dispense with many of them; for instance, oxygen and hydrogen could hardly be required. Nitrogen is essential to plant life, and phosphates, lime or chalk are of great assistance to the cultivator and of much value to such crops as require salt. Many roots require soluble manures. These can be given where the wants of the soil are ascertained. The cultivator requires to know what his soil contains and formerly applied to the chemist. He wanted the gardener to determine for himself the quantity of food required for different soils and the various plants that required such food. The fertility of the soil must be considered, and what is absent made good to give life and vigour. Farmyard manure of high quality possesses all the constituent parts of the food the plants require in many cases; hence, its adaptability and value, but in certain soils more than farmyard manure is required, so that it is not desirable to use it in every case, and in some it is not wanted at all. He did not wish to deprecate the value of farmyard or animal manure. Of late years there had been immense progress in the application of nitrogen and superphosphates. He gave an instance of the value of this manure on the heavy clay lands of Oxfordshire, where wheat was now being grown profitably. He stated such crops as Beans take in a certain amount of nitrogen, and this should be returned to the land. For instance, crops that are taken away do not

give food. If the green tops could be utilised or returned to the soil, the land would be the gainer. Some soils deficient in potash or superphosphates require more than one manure; in others kainit is required. Nitrate of soda is good for some crops and unsuitable to others. For instance, Beans do not require soda; indeed, it is injurious, potash being wanted in their case. There are other manures not offered to the public of great value and not high in price when their value is taken into consideration. Phosphate of ammonia, though not a market commodity, is an excellent manure and invaluable to the cultivator. The value of digging in green crops into the soil was fully gone into, a point, he stated, which was much neglected. A hearty vote of thanks was proposed to Prof. Cheshire, after several questions had been asked, for the able manner in which he had treated the question of soils and manures and for the way he had so fully explained the matter.

The Gardeners' Orphan Fund.—The committee of the fund met at the Horticultural Club Hotel, Windsor, on the 5th inst., under the chairmanship of Mr. William Marshall, there being a good attendance of members. The hon. secretary, Mr. A. F. Barron, announced that the receipts at the recent dinner amounted to £492 6s. 6d. in addition to the promise of £100 from the directors of the Gardening and Forestry Exhibition at Earl's Court. H.R.H. the Duchess of Albany had contributed £5, and his Grace the Duke of Portland £2. Among the special receipts reported were from the Manchester Local Committee, £2 10s. 6d.; Mrs. Lloyd, Hawkhurst, £1; and Mr. F. Miller, Margate, £1. Hearty votes of thanks were passed to Baron F. de Rothschild, M.P., for presiding at the dinner, also to Sir Trevor Lawrence, Bart., Sir John T. D. Llewellyn, Bart., and Mr. N. N. Sherwood, and also to those who furnished flowers for the decoration of the tables: Messrs. Wills and Segar, B. S. Williams and Son, H. Cannell and Sons, J. Laing and Sons, J. Walker, J. Smith (Mentmore), G. Wythes (Syon), and W. G. Head, Crystal Palace.

The weather in West Herts.—The past week was the sixteenth warm and the tenth dry week that we have had in succession. The present drought has now lasted sixty-eight days, during which time rain has fallen on but five days, and to the total depth of only three-tenths of an inch, or about one-sixteenth of what may be regarded as a seasonable rainfall for the same period. During the week the temperature of the ground at 1 foot deep has risen from 57° to 61°, and at 2 feet deep from 55° to 57°, and is now 9° and 8° warmer at these depths than at the end of the same week last year. On no day during the week did the record of bright sunshine fall below eight hours, and on five days exceeded eleven hours. It is somewhat curious to notice that the total rainfall since the beginning of the present year exceeds that for the same period in 1892 by 1½ inches. Fortunately for vegetation and also for the springs, the fall of rain during the past winter was quite up to the average, while February proved singularly wet.—E. M., Berkhamsted.

Weeds.—It certainly is the case that such a season as is the present is one of the best for the destruction of weeds ever known, and that these garden pests should be not only scarce, but absolutely non-existent. It is a surprise to find a garden now where weeds are. When it is said that there was a good rainfall to come crops would grow amazingly, so must it be remembered that weeds would grow amazingly also. It seems to be little less than madness, therefore, to allow weeds to get any hold this dry weather. Hoeing not merely kills weeds, it prevents them, and the gardener who has kept the surface soil among his crops frequently moved will find when rain comes that constant hoeing has killed seeds in the process of germination as well as living plants. On the other hand, when the rain comes, the

work of planting, cropping, or otherwise filling vacant soil will leave very little time for weed destruction.—A. D.

Sand for cuttings.—For years I have rooted many kinds of soft-rooted subjects, such as Fuchsias, Coleuses, Marguerites, &c., in nothing but sand, and with good results. In fact, I have not stopped at soft-wooded subjects, but have been equally successful in striking Rose cuttings in the same way, especially Maréchal Niel, in the spring, using the partly hardened shoots after the flowers were cut in April. The way I treated these latter was to get a roughly made box, without a bottom, 6 inches wide and about 2 feet long, making each end so that it would fit on to a 4-inch hot-water pipe in the Cucumber or Melon house. A narrow groove was cut in the inside near the top so that a square of glass would fit it, allowing a slight slope for condensed moisture to run to one end. Over the pipe a few fresh leaves were laid to prevent the sand falling through if it should get dry, as it is sure to do close to the hot-water pipe. A thickness of about 4 inches of sand was put in the box, the cuttings dibbled in firmly, the sand kept moist and the cuttings air-tight, except for a short time every morning. In this way no trouble was experienced in rooting the cuttings. Soft-wooded subjects root readily in saucers of sand kept wet and stood on the hot-water pipes.—E. M.

PUBLIC GARDENS.

An open space for Clerkenwell.—The Open Spaces Committee of the London County Council have recommended that the £10,000 received from the Postmaster-General, in lieu of the reservation as an open space of a portion of the Coldbath Fields Prison site, utilised for parcel post purposes, should be devoted to the acquisition of a plot of land (to be laid out as a recreation ground) abutting on Rosebery Avenue at New River Head.

Open spaces.—At the monthly meeting of the Metropolitan Public Gardens Association, 83, Lancaster Gate, W., the Earl of Meath, chairman, presiding, a donation of £10 10s. was announced from the Vintners' Company. Progress was reported with regard to the laying out of Victoria Park Cemetery, St. Thomas's Square, E., and the acquisition of the Hilly Fields, S.E., for which about £1200 was still required. Seats were granted for the Fulham Palace Road Recreation Ground and for Brompton Road, and a member undertook to provide funds for the erection of a covered seat to hold twenty people on Wandsworth Common. It was agreed to subscribe £100 towards the purchase of a proposed addition to Highbury Fields, should the Islington Vestry contribute an adequate amount, and to assist in the movement for securing as a public recreation ground a part of the Millbank Prison site, a similar scheme having been promoted by the association some years ago. Letters were read from the Islington Vestry undertaking the maintenance as a public garden of an open space in Penn Road, N., if the association acquired the lease and laid out the ground; from the London School Board, agreeing to open the playgrounds of twelve more schools on Saturdays and to consider further applications on their merits; and from the vestry of St. Mary Staining, declining to permit the association to lay out and open the churchyard in Oat Lane, E.C., but expressing an intention to do the work itself, though keeping the ground closed as at present. It was decided to repeat the offer made some time ago to lay out Bartholomew Square, Old Street, E.C.

Insects in Dendrobiums.—I lately found that some of the Dendrobiums were infested with the small beetle, specimens of which I enclose. This seems a terrible pest, and I do not know how far its ravages may extend. The plants infested are, as far as I can tell, but few, and the insects appear to have been imported on either D. Dal-

housianum or D. formosum. The plants of formosum were hanging near to Dalhousianum, and both were badly attacked, also some noble and Brymerianum which were close by. I at once carefully examined all the plants and removed those where any traces of the beetle were to be seen, and have cut away and burnt all infected bulbs. Meanwhile I have had some under bell-glasses and placed pieces of Dendrobe bulbs near them, into which in about ten hours the insects had bored about a quarter of an inch. I also placed some Vine shoots under the bell-glasses, and they attacked these as freely as the Dendrobe bulbs. I enclose a piece for you to see. I see in a recent issue of THE GARDEN it is mentioned as attacking in the collection of Sir Trevor Lawrence D. Phalænopsis, but my plants of this variety are apparently free. My object in sending this letter is to lay stress on the fact that this is likely to be a very serious trouble if not very persistently watched for and eradicated, and I believe the only way is to burn the affected plants at whatever cost, as the insects are not easily detected until they get a little way up the bulb. As you will see, the adult specimens are bright brown in colour and scarcely so large as a pin head. Whether they fly or not, I cannot say. They do not appear to bore in an upward direction, but to eat right through, and then must go up on the outside of the bulb and enter again. I shall be very much obliged for any information any of your readers who have had experience of this insect can give me, and I hope these lines may be the means of putting others on the alert to prevent such a pest gaining a footing amongst their plants.—W. H. LEES, *Trent Park Gardens, New Barnet.*

Alsophila podophylla (T. Higgin).—I think the specimen you send, which you say came from Hong Kong, must be this species. The fronds are bipinnate and the petals entire, with toothed edges. I do not think it is tall growing, neither do I think it is in cultivation in this country. It is a great pity that we cannot import some stems in a living state; this Fern and many others would be welcome additions to our plant houses.—W.

BOOKS RECEIVED.

"Les Orchidées," a book for amateurs. By D. Bois. Paris Librairie: J. B. Baillière et fils, 12, Rue Hautefeuille, près du Boulevard Saint Germain.

Carnation and Picotee Union. Eighth annual report.

"Town and Home Gardening." By Mrs. T. Chamberlain. London: J. S. Virtue and Co.

Annual Reports of the Fruit Growers' Association and Entomological Society of Ontario. 1892.

Names of plants.—M. B. R.—1, *Honesty* (Lunaria biennis); 2, *Cytisus purpureus*; 3, *Meconopsis cambrica*.—Col. Puget.—*Xanthoceras sorbifolia*.

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No. 1122. SATURDAY, May 20, 1893. Vol. XLIII.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare.*

KITCHEN GARDEN.

TOMATOES FOR THE OPEN AIR.

It is more especially in the smaller gardens where convenience for growing Tomatoes under glass is limited that the grower has to rely upon what may be produced from the open air, the supply, more or less as the case may be, depending largely upon the weather which may be experienced during the later summer months. The climatic conditions of the present season, at least so far at any rate, will no doubt act as a further incentive to those growers who may be wavering in their decision whether to try again or not. The character of the season may certainly make or mar the crop, although this alone must not be relied upon if the grower is to be rewarded for his pains in securing a good crop of well-ripened fruit. According to present appearances, this should be a good season for Tomatoes, as the plants are looking remarkably well, the growth being well matured. In fact the weather has been so favourable, that the plants prepared for open-air planting, that is, if my own may be taken as the condition generally, are already setting their first trusses of fruit. This is as it should be, for if open-air Tomatoes are to be grown successfully, late plants are of little or no value, the season being over before the fruits commence to ripen. Plants which are still in a backward state should be further encouraged to make up lost time by keeping them in a fairly warm structure, so as to fit them for planting during the early part of June. Others which are well advanced should be kept in a greenhouse, this hardening them off and also favouring a more matured or woody growth. There should not be the least difficulty in getting plants with the first trusses set if such varieties are being grown as Conference, Early Ruby, Earliest of All, or even Ham Green, all being excellent varieties for free setting; therefore well adapted for open-air culture. With good plants of the varieties named or other known approved sorts, the foundation of a good start will have been made.

As to which is the best form to train the plants in, it matters little if a definite principle is decided upon. Plants which have been well prepared and are not drawn succeed well as single cordons, even when growing against comparatively low walls. They commence to fruit within 18 inches or 2 feet of the ground, and this checks them sufficiently to prevent the leader growing too much ahead, all side shoots being removed as soon as perceived. It is an easy matter to train a few laterals in afterwards if so desired. In starting the plants, two or three leaders may also be taken up, these being each treated on the principle of a single stem or cordon. This part of the routine must be insisted upon, for if allowed to run wild, little or no fruit will be the result. Nor will any fruit be produced if the side shoots are allowed to first grow well ahead, and then be pruned back, as it is called. I have seen many instances of the result of such treatment, the flowers being small and dropping off instead of

setting, and all the while the grower wondering at the cause of the failure. A south aspect is undoubtedly the best for Tomatoes, but in a fine season good plants will fruit freely on a western site. In either of these positions after the long period of drought, moisture in the soil will be very deficient, for although Tomatoes are not lovers of moisture over the foliage, yet with a hot sun for several hours daily this must not be lacking at the roots. The soil in many instances is no doubt in a sufficiently fertile state to promote a healthy and fruitful growth, but, on the other hand, it is often just the reverse; and if success is to be assured, it must be suitably prepared either by adding fresh compost or the elements needed in a concentrated form. Heavily charging the soil with animal manures tends to grossness, and plants in this state, in addition to bearing no fruit, are liable to the attacks of disease. No one can gainsay the fact that excellent crops of Tomatoes, free from disease, have been produced solely by the aid of animal manures, but this only when used judiciously. The advocates of poverty at the roots to induce fertility would, if they planted their Tomatoes under such conditions, soon find out the unreasonableness of their teachings. Where the ground is somewhat poor, take out small stations, say 18 inches square and 1 foot in depth. Into this space place some fertile garden soil, not necessarily fresh loam, although a little, if to spare, would not be wasted upon them. Soil that will grow good Potatoes will produce like crops of Tomatoes. Some burned refuse and also some pulverised horse manure should be added. Instead of the pulverised horse manure and burned refuse, a little bone superphosphate and kainit—these containing the elements needed to sustain a healthy and fruitful growth—may be added to the soil previous to planting.

Planting, which should be done early in June, having taken place, it now remains to apply water at the roots, so as to sustain a healthy growth, there also being quite sufficient nutriment in the soil without either liquid or a top-dressing of a good fertiliser being needed until a crop of fruit has set. At this time a little assistance in this way will be of benefit, more especially if the weather should be hot and sunny, the fertilisers being washed in with clear water. After being once set out, some people think that little or no water applied artificially is needed, but this is an error. Certainly if the weather should change to a dull period with rain, then, of course, the drier the better; but otherwise the plants will take a good supply. If suitable soil is provided for the plants to root into and they are duly supplied with water, with applications of liquid or rich top-dressings later on, Tomatoes succeed well in raised narrow borders. In this case all that is needed is a stout plank placed on edge a distance of 18 inches from the wall, or the soil may be kept in position by loose bricks, so as to form a low retaining wall. Large pots, or even Seakale pots, may be likewise used, these being half plunged, good crops of fruit being the result. If so confined at the roots, watering and feeding must be attended to, this being doubly necessary to support the weight of fruit and to keep the foliage healthy. When this latter becomes curled, it is a sure sign that sufficient support is not being given.

A. YOUNG.

Prevention of Turnip and Brassica fly.

—On all sides one hears of wholesale destruction—on account of the long period of drought and

parching easterly winds—of the young seedling Turnips and the various winter greens and Broccoli. When this happens to sowing after sowing, it does not augur well for the future winter green vegetables. Even if the seedlings escape total destruction, they are so weakened, that they rarely afterwards take on a free growth. Blindness of the heart I also attribute to the fly. In writing of the Buda Kale (p. 370), Mr. J. C. Tallack makes mention of the Kales being sown on a rather poor seed-bed. This I consider a great mistake, as the growth being so slow, especially in a dry time, the seedlings are liable to the attacks of fly. I have perfect immunity from these destructive pests by lightly dusting the seedlings over every morning without exception with soot. The dusting is commenced two or three days after sowing. This will be found much safer than waiting until the seedlings are visible. Very likely, if this is waited for, the cultivator will find upon looking closely into the plants that destruction has already commenced.—A. YOUNG.

Field crops of Potatoes.—Seldom have these been planted under more favourable conditions than during the present season. All the Potatoes that were put in early have come up regularly and grown away without being cut down by frosts, and if the same favourable conditions continue, a very early crop may be expected. Late Potatoes generally follow some kind of crop that is not cleared from the ground before April, but this season an unusually large area was cleared in time for the work, as owing to the brilliant weather in March and April, both early and late Broccoli and all kinds of green stuff were forced up into flower quite a month before the usual date, and had to be cleared off at any price, and now late or main crop Potatoes are being got in. The soil is exceptionally dry for the period of the year, but happily Potatoes rarely suffer so much from lack of moisture as the excess of rain, and if we only get a good downpour before the month of May is out, the Potato crop will be safe. Prices have not ruled high at any period of the past year, but the difficulty is to find any crop that is more certain of returning something for the grower than Potatoes. At present Potatoes hold the first place on the list, at least on suitable land.—J. G., *Hants, April 30.*

TOMATOES TO FRUIT IN SPRING.

SOME two years ago last August I had a few Tomato plants that had been left over from a late sowing in 4½-inch pots, and cuttings having suffered from fog the previous winter, I potted these plants into 7-inch pots and kept them plunged in the open in coal ashes, the result being a sturdy growth. They were taken into a vinery at rest in October, being studded with fruit and flower-trusses. In December they were nearly all placed in warmth, and gave some nice fruits in February and March. Seeing how well these hard-grown plants grew and resisted fog over others more highly cultivated, I have since sown in August for winter or early spring fruiting, and so far have had good crops. The plants are superior to those raised from cuttings and commence to set the fruit freely in February, thus giving a heavy crop quite two months earlier than those raised early in the year. I used to raise Tomatoes from cuttings for the supply of early fruit, but I do not do so now. When growing the Tomato for winter, it is best to rely upon good loam and omit manures, growing the plants as sturdy as possible. Manures may be given early in the year as soon as a good set of fruit is secured. I have tried several methods at the time of introducing the plants into more warmth, such as giving a larger shift, planting out, and plunging the pots the plants have been wintered in. The last is the most satisfactory. If plunging is adopted, it should be done thoroughly. I plunge well over the rims of the pots, and fresh roots are emitted from the stem and the soil is soon a mass of roots. The bottoms of the pots are placed on a hard coal ash bottom. This plunging does away with excessive moisture and

keeps down rank growth. To show how well the plants fruit, I have had them in bearing over six months, doing equally as well as the seedlings sown in January. When first plunged, dryness at the root before the plants take hold of the new compost must be guarded against, as this will cause any bloom just opening to drop, and this first bloom is specially required to give the supply during March, as the fruits formed before the end of the year will give the first fruits; these will only be medium-sized, but the bloom formed when placed in warmth will be all that may be required if moisture is duly attended to, as till new surface roots are made the plants, having a mass of roots in the pots, will need more moisture. It is well known that Tomatoes set with difficulty in the winter; indeed they rarely set, and by getting a good set before the dark days, keeping cool and on the dry side afterwards, one is assured of some fruit early, as in January and later with favourable weather the plants push out plenty of flower-trusses. These carefully fertilised, with air left on the house daily, will provide the crop for a succession. I do not give these plants too much heat, and always endeavour to leave air on the house. It is useless to attempt the growth of the large shy-setting varieties, those with ribbed or corrugated fruits doing best, some varieties being much sturdier than others. G. WYTHES.

RUNNER BEANS—ORNAMENTAL AND USEFUL.

Of the ornamental character of runner Beans there can be no two opinions, and there is no good reason why owners of small gardens more especially should not take greater advantage of this characteristic as well as their undeniable usefulness. Who on walking or riding through the vegetable-growing districts round London has not been greatly impressed by the glorious mass of scarlet presented by the fields of runner Beans? If they were not in the secret they would not think this effect was produced by Scarlet Runners, for the simple reason there is nothing running about them. If they were allowed to run, they must be either staked up or prove useless, a mass of haulm producing few or no pods and not much colour. These Beans are kept closely stopped, all running growths being snipped off once and sometimes twice a week during the early part of the season. Thus treated, they push extra strong flower-spikes in abundance, and continue to present a gay appearance for two or three months. Personally, I would rather see Scarlet Runners in a garden than scarlet Geraniums, or, to give them their correct title, zonal Pelargoniums, though, perhaps, I am somewhat prejudiced against the latter showy plants owing to having had to grow so many in my time. Any way, there is nothing to prevent the sowing or planting lines of these Beans alongside kitchen garden walks, and if they are given the benefit of a fairly rich and moist root-run and the stopping not neglected, they ought to prove both ornamental and useful. The plants ought to be either put out or thinned where sown to a distance of not less than 12 inches apart, the running growths being pinched or snipped out before they have time to harden. Neglect the latter precaution and the experiment will inevitably end in failure. The great clusters of pods which form under this method of culture are apt to get splashed during rainy weather, but this is easily prevented and the plants benefited by a mulching of strawy manure.

The central walk through many small mixed gardens is usually a favourite promenade with the owners or the members of the establishment generally, and runner Beans might be

freely used in the embellishment of these. Continuous rows, especially if staked, would be objectionable, but few would object to either isolated plants up a single pole or groups duly staked, archways covered with Scarlet Runners being also very effective. Given fair play, that is to say, a deep and rich root-run and plenty of head-room, it is surprising how free-flowering and productive these Beans prove, the rows that are the first to collapse being those in which the plants smother and rob each other. If patches of three plants, trained up as many long straight stakes or poles, are located about 6 feet apart on each side of a long walk, these would most probably produce quite as many pods as would be required for the house all the season and prove distinctly ornamental all the time. If a little variety in colour is desired, then sow the old Painted Lady and also the white-flowering white-seeded Dutch. It is even possible to have varieties with prettily marbled and coloured pods, the seeds being correspondingly marked. These are mostly known as Butter Beans, and find more favour on the Continent than on this side of the English Channel. The pods when cooked are very melting, but the flavour does not please. It should be remembered that all the varieties in general cultivation will, under favourable circumstances, attain a great height, the writer having seen them up poles 20 feet high and also rambling over Apple trees equally as high. They can, however, be successfully grown with the aid of stakes 4 feet high or thereabouts, only in this case the points of the haulm should be pinched off whenever they reach the tops of the stakes. If not, the haulm falls about, smothers the undergrowth and presents an unsightly appearance. It must also be borne in mind that poles clothed with Beans are at times much exposed to strong winds, and they ought, therefore, to be fixed deeply and firmly in the ground, those in either lines or triangles being connected and made to support each other.

Archways over walks sufficiently durable for training runner Beans over are easily constructed. What is wanted for each are two fairly strong straight stakes 6 feet long, 1 foot of this being driven into the ground, and two long benders, preferably of Hazel, these being from 6 feet to 9 feet in length, the thickest end being firmly secured to each upright stake, and the other ends bent over so as to cross each other 7 feet from the walk. These benders being of about equal thickness and duly brought down and laced to each other, a good natural curve will be formed and the archway be sufficiently strong to stand against winds even if heavily weighted by Beans. These archways may be formed as closely or as far apart as those who erect them choose. Runner Beans are also very effective when rambling or trained over latticed porches, and they also form a pretty covering for summer arbours. It is not yet too late to sow them where they are to grow and flower, or, if wanted more quickly, some of those raised in the kitchen garden rows may be moved with advantage from where they are somewhat thick together. As I previously pointed out, they will not thrive, that is to say, grow strongly, flower profusely, and set good crops if starved at the roots. If possible, mix some well-decayed manure with both top and bottom spits, holes not less than 18 inches across for single plants and for three or more plants 30 inches across being thus prepared. If they are to be grown round a structure of any kind, open a trench, forking manure into the bottom freely before returning the top soil and mixing more with that. Also arrange the soil about

the plants somewhat in the form of a basin, and give water freely at least once a week during dry weather. M. H.

Forcing Potatoes in pots.—I notice at page 369 in last week's GARDEN, what I should say is an extraordinary announcement. "F. A. C." is reported to say he lifts from 1 lb. to 2 lb. of new Potatoes in March grown in 8-inch or 9-inch pots. I am afraid this is a mistake. I have for a number of years grown Potatoes in pots, but if I get 9 oz. or 10 oz. in each pot it is all I am certain of, and I venture to say my variety of forcing Potatoes cannot be easily beaten. —R. GILBERT.

Wilcove's white Broccoli.—Much of late has been written respecting Broccoli, many kinds having been recommended, but I do not remember to have seen the above kind named. I venture to say it is very difficult to surpass this as a late kind when it is true. It is a very old kind, but it is very doubtful if any of the new sorts can be said to be an improvement on Wilcove, all points considered. Some growers may say it is not as hardy as some other kinds. After trying most of the standard kinds, I can see no difference on this point. During the last few years I have tried it in this garden, and this last winter I had it growing beside five other well-known kinds, and a larger percentage of Wilcove lived through the winter than of any other kind. Our garden is not favourable for Broccoli through the winter, as the situation is low. When a good strain of it is grown it will be found invaluable for late cutting. I have been cutting this kind for the last four or five weeks, and now (middle of May) have several fine heads still remaining. The heads are very white and well protected. It grows to a large size and is very erect growing. Some years ago when I had charge of a garden in Dorset I had a true stock of this fine kind. When it was first sent out a packet of seed was obtained from the raiser, and a few of the best heads were saved for seed every year.—DORSET.

SPRING AND SUMMER CABBAGES.

WE have here a rather large field cut up into allotments, and it is very pleasing to see how well the ground is cropped. Naturally, a quantity of young Cabbages was put out in the autumn, for cottagers pay much attention to this vegetable. The hard winter destroyed the greater portion of them, the field being quite open to cold wind. One lot alone quite escaped injury. In this case the plants were earthed up to the bottom leaves at the beginning of the winter. It is evident that the earthing was the cause of their safety, as the soil in all parts of the field is identical, and there is a complete absence of shelter. The owner of these plants will have plenty of Cabbages to cut when his neighbours have none. We shall probably never experience a more severe winter than the past one, and it would seem that nearly covering the stems of young plants with soil suffices to ensure their safety against the most severe frost. Earthing up Cabbages is, I know, practised by many, but from what I have seen it is not so universal as it should be. Two or three mild winters are apt to induce a feeling of security, and then comes an exceptionally severe one that takes off the plants wholesale. The damage is probably effected at the junction of the stem with the soil, and almost always, I imagine, when hard frosts set in immediately after heavy rains or when snow is melting away. What with the hard winter destroying such a large number of plants and a great proportion of those that escaped bolting, early Cabbages must be unusually scarce. I hear of fancy prices being given for breadths that are just turning in. It is, of course, only in very favoured situations that there are any Cabbages to cut. An annoying feature as regards this early Cabbage supply is that the weather is dead against putting out young stuff that has been raised under glass. A grower here, finding how things were likely to turn out, gave up a large house to raising plants. He has many thousands of healthy plants,

but, like many more, has been waiting for a change in the weather to get them out. With the ground parched and a fierce sun beating on it for hours daily, there is much risk in putting out a quantity of plants that cannot be watered afterwards, the risk being all the greater in the case of such as have been raised under glass, as naturally they are now susceptible to the drying influence of parching winds and hot sun. If this weather continues, they must, however, be set out, and all that can be done when it is a question of planting large quantities is to puddle them in. By dipping them in a batter of rather thick mud, thus thoroughly encasing the roots and planting before it dries, the roots will remain moist long enough to enable them to grasp the soil and keep the stems from shrivelling. Once Cabbages make a start they soon go down for moisture. A shower of rain would, of course, simplify matters, but I am afraid that May, like the two preceding months, will be marked by heat and drought. Happy is the man now who by means of the hose can easily ensure the safety of newly-set-out plants and promote a quick growth. The above remarks on planting are applicable to field culture only. In gardens it is always practicable to water in the plants. If planted with the dibber the roots should be just covered with soil, and the hole filled up with water before filling in with soil. In such a time as the present exceptional pains are warranted, and certainly it pays in the long run to take them. When the ground is so dust-dry, and there is no prospect of rain for some time, I prefer to take out the soil with a trowel, set the plant against the firm soil, partly fill in, tread the ground quite hard and fill the space up with water. The advantage over dibber planting is that a larger body of soil is moistened. A light watering now and then will keep it fairly moist. The difference in the progress of plants that are set out in this way in a time of heat and drought and those that are put in in a more rough-and-ready manner is remarkable. There will be from ten days to a fortnight's difference in the time they take to heart in.

J. C. B.

Late Borecoles.—With brilliant sunshine and continued drought the value of the late Kales will be apparent, but even these are running if not planted on a north border and kept cropped. Some Borecoles bolt quicker than others; hence the necessity of planting in different positions and if possible in heavy land on which fine heads are produced. I do not think those who sowed early will be well off for this vegetable this season, as by this date (the middle of April) there will be little left, all the early lot having run, no matter what variety. I would advise two sowings. I do not sow the late Kale till the first week in May. The earlier lot is sown early in April. It may be objected to this late sowing that the plants do not get large enough to give a heavy crop, but this is not the case, as I find they are large enough for all purposes if planted out when ready and not allowed to starve in the seed bed. I have found large succulent plants more liable to succumb to severe weather than medium-sized ones. I also think a medium or small Kale is not so strongly flavoured as the coarser ones. When late sowing is resorted to there is no loss of ground, as the plants may be placed closer in the row, and thus as much top is produced as from larger plants, and there will be fewer gaps from frost than with larger or early sown Kale. There are so many varieties of Kale that it would be useless to enumerate them. Some of the best flavoured are not the best looking or neatest growers. For instance, the one called Ragged Jack, an old variety, highly spoken of by "E. M." (p. 278), is excellent for its good flavour and productiveness. The variety called Woburn Kale possesses the same good qualities, and the Asparagus or Buda, excellent for late use and most prolific, should always be included in the list of useful hardy varieties. The Green Curled or Scotch Kales are too well known to need description, but of these there are various forms. I prefer the Dwarf Late Curled; I find it

hardier than the tall varieties. Veitch's Dwarf Late Curled is an improved form and quite ten days later than the ordinary variety, shorter in the stem, and very hardy.—G. WYTHES.

SHADE.

IN the wonderfully hot and sunny April through which we have lately passed, shade has been already pleasant and a grateful change from the brilliant sunshine. We usually regard trees as detrimental to summer flowers, and so indeed to a certain extent they must be, yet a great part of the pleasure of a garden and lawn in the hot months depends upon having sufficient shade. There are many things which refuse to grow under the constant shade of evergreen shrubs which will not mind the shade of deciduous trees coming over them only in the sunny portion of the year. Nevertheless, I have gathered this year the finest possible Lily of the Valley growing under mingled Box and Yew, the ground powdery dry, the aspect north-east. *Narcissus ornatus* was growing not far off under much the same conditions; it was rather poor and weak, but every root was flowering. In growing Lily of the Valley, which I do in large quantities, I choose a semi-shady locality, where, as a rule, it will do best, and *N. ornatus* likes a good deal of sunshine, but it will flower almost anywhere. *N. poeticus* has been good this year in the open, but among Laurels there is scarcely a flower. Just at this time of the year, when the leaves have only begun to cast their deep shade upon the ground beneath them, I notice several plants which evidently rejoice in the shade, and this spring especially are very much the better for the absence of that baking heat which has made the beds and borders which are exposed to it perfectly dry and hard and cracked with fissures, into which you might thrust your hand. First among these plants comes the common Martagon Lily, which with me is a perfect weed, coming up in all sorts of places where its seeds happen to fall. It takes a year or two to come to maturity, but when it has attained its full size under the shade of leafy trees it is a fine handsome plant even before the flowers open. The purple stems stand up boldly, ringed round with beautiful whorls of deep green leaves, which are massive and strong with the crown of buds on the top. A month later and this crown will make a fine head of turn-cap Lilies. The colour is peculiar, and not perhaps so pretty as that of other Lilies, but the stateliness of the whole plant makes it a charming variety among other shade-loving things. I have a white Martagon, about the hardness of which I was not quite certain when I got it, so I placed it in a warm sunny corner. It is flowering well this year, but the leaves have been a bright yellow throughout. What I believe to be the black Martagon—*dalmaticum*—is growing beside the white variety. It looks as if it liked the sunshine; at any rate it is growing well and strong. I thought it a very beautiful flower when I saw it for the first time in Fifeshire in 1892. Another most beautiful plant at the present time is Solomon's Seal. I do not know anything more graceful in its growth than this. Its great tall stems arch so majestically, just bending sufficiently to show off to perfection the row of little bell-like flowers. Colour would spoil this fine plant, and would be inappropriate in a flower which we appreciate simply for the great beauty of its form. It likes damp shade and looks superb among other moisture-loving things when it grows among the huge granite boulders which form the rocky way for some rushing brook on the wild moors of Devon and Cornwall. Solo-

mon's Seal seems to be more and more used for forcing, and it adapts itself remarkably well to such treatment. But the roots must be strong and the plant must have plenty of manure water, or the stems are apt to become stunted in their growth in a pot. It is growing well with me among Laurels as well as in other shady places. This is a fine plant to gather when large and tall flowers are wanted to fill vases in the sitting room.

I am exceedingly fond of the Periwinkles, which are amongst our earliest flowers, and will endure, if they do not love, the shade. This is also more or less a wild flower. There is one place in this parish in which it runs wild through the tangled weeds of the hedge, but always flowers abundantly in February and March. It is on the roadside, but protected by a very deep ditch. Both *Vinca major* and *V. minor* are worthy of being introduced into our gardens and being allowed to ramble about in some semi-wild corner under deciduous trees. The white variety is specially pretty, and the variegated leaves of this species add, perhaps, to its beauty, though this is somewhat doubtful. As a rule, variegation does not add to the beauty of foliage.

Then in the deepest shade you can have the herbaceous Geraniums to perfection. Of course, these Geraniums are totally different from those which beautify our greenhouses summer and winter. They are in flower now, and are very different in their varieties and colour.

Sweet Woodruff (*Asperula odorata*) is a singularly pretty little plant in flower just now with little white flowers borne on the tips of sturdy green shoots. It is useful for covering rough places under trees. I have only mentioned above those plants which are at the present time worthy of attention and growing in the shade in my garden. The list might easily be prolonged as other months and other seasons bring forth their own objects of interest. The Japanese Primrose (*Primula japonica*), which is really one of the most beautiful of that interesting tribe of plants, loves moisture, and therefore, though the colouring may not be so rich and deep in shade, it will flower there almost better than in the open. This year this charming flower has had a struggle for life, and when watering has been neglected it is not worth looking at on account of its shrivelled leaves and stunted flowers.

A GLOUCESTERSHIRE PARSON.

NOTES OF THE WEEK.

Roses at Colchester.—We have had no rain since February except one shower of about ten minutes. Unless rain comes within a week Roses will have a sorry time of it this year.—FRANK CANT.

Hardy Primulas of several kinds were charming a few days ago by the side of water in the Long Ditton nursery. *P. rosea* was established there, its rose-coloured flowers making a bright display, and we also noticed colonies of *P. involu-crata* and *P. denticulata*. It is in just such a moist, shady position as this that the various kinds of *Primula* succeed.

The Pæonies are commencing to make a brave show of colour in the Long Ditton nursery, and a fine collection may be seen there. The beautiful single varieties are in full bloom, and a wealth of colour is got from a good selection, whilst the forms of the distinct *P. tenuifolia* are of note for the graceful character of the foliage. The more conspicuous in this respect is the double variety, the flowers of which are vivid crimson, and the leaves

quite feathery in character. Varieties of *P. arietina*, *P. peregrina*, and others may be noted. This class of Peony is also in beauty in the Royal Gardens, Kew.

Stylophorum diphyllum is a handsome flower. It may be seen in the hardy plant house at Kew, and is worth a note for its clear yellow colour, the stamens orange. The plant belongs to the Poppyworts, is a native of North America, and grows from 1 foot to 2 feet in height. It is free, hardy, and the flowers fully 2 inches across, set off by glaucous leafage.

Shortia galacifolia.—It is interesting to notice that in the Tottenham nursery this delightful plant has braved last winter without injury. Many inquire as to the hardness of the Shortia, but if it will stand out in such a trying winter as the last, it cannot be very tender. The best position for the plant is one that is cool, rather shady, and the soil deep, well drained, and light. It is as charming, however, in pots as in the open ground.

Early Peas.—I have this day gathered a bushel of Peas from the open ground, the variety being Early William, a selection from William I. These Peas were sown on November 10 and have done well. For twenty-five years here and a number of years at many more places I have practised sowing Peas at the above date. I may add I never gathered Peas so early before at these gardens, May 26 being the earliest date, I think, in 1872.—R. GILBERT, *Burghley*.

Rose Mme. Lambard, with a perfect flower fully expanded on May 15, is a good example of the earliness of the season, and other buds upon the group of plants are showing colour. If the end of the season is as favourable as the beginning, we shall have more than five months' enjoyment from this, one of the loveliest, freest, most variable and most constant of Teas for beds and borders in the open air. The present flower, of a self rosy pink colour, is quite unlike the copper-tinted ones that will come later, but in all its aspects a bloom of this Rose is sweet and welcome.

The Bluebells at Kew are always worth a note when in full beauty. They are approaching perfection in the wilder parts, particularly surrounding the Queen's Cottage, where they make a perfect sea of blue—a delightful picture for the many thousands of visitors at this season of the year to look at. Breaks of the flowers occur beneath the trees in other portions of the gardens, and a fine effect is obtained by a dense carpet of them covering the ground beneath the group of *Araucaria imbricata*, fifteen in number, near the Palm house.

The golden Oak and purple Beech are delightful when associated together, and such an effect may be seen in the Knap Hill nursery. These things create a splendid contrast of colour, the deep self yellow leaves of the Oak against the intense purple-chocolate of the Beech. Such beautiful leaved trees should be more common in gardens. They are of strong decided colour, and that is the reason why they produce a striking and beautiful picture, impossible with the use of many variegated things that are spotty and positively objectionable.

Jamesia americana is one of the most interesting things in bloom in the Royal Gardens, Kew. There is a bed of it near the succulent house, and when in full bloom, this Rocky Mountain shrub possesses much charm. It grows about 3 feet in height and the leaves are not unlike those of a Ribes—whitish in colour, but almost hidden by the wealth of small pure white flowers, which stud the wiry shoots. A large bush of it in full bloom has a pleasing effect, and it is seldom one finds it in English gardens, although it has been introduced for many years.

Hardy Azaleas are commencing to burst into full bloom in the Royal Gardens, where a large break of them is planted in that portion known as the Wilderness. The delicately coloured *A. Vaseyi*, the well-known *A. pontica* and a host of varieties contribute gay and varied colours to the grounds. The hardy Azaleas at Kew have been planted some

years and are now large spreading bushes, which when in full bloom scent the air with a spicy fragrance for many yards around. They are in a fairly sheltered position and enclosed by woodland, which enhances the refined and brilliant colours of the flowers.

The Alabama Snow Wreath (*Neviusia alabamensis*) is decidedly an over-rated shrub, and proves once more that the glowing descriptions of some of our American friends savour somewhat of exaggeration. We were to have Snow Wreaths in June, but there are many other shrubs better calculated to create such an illusion than this, which at its best can only be classed with the third-rate shrubby Spiræas. The native Water Elder (*Viburnum*), now flowering so abundantly in the woods, is far more beautiful, and is a shrub worthy of a bold place in any garden, though rarely seen in gardens.

Rosa chlorocarpa.—This is a very interesting species sent to us from M. Vilmorin under the above name. It has the habit of the Scotch Brier, and, though the bush is small, it is smothered in flowers, which are very distinct in colour and exceedingly sweet scented. It is, without exception, including species and varieties, one of the sweetest smelling Roses and in colour quite unique. The base of the petals is of the same yellow tint as the tuft of stamens, but the main part of the flower is of a bright rosy pink, the colour flecked, irregularly defined and shading away almost to white at the edges of the petals. Among many species it attracts attention by its novel and pretty colour.

Sedum sarmentosum is a delightful and uncommon plant to hang up in the plant house. Several specimens of it are in full beauty in the hardy plant house at Kew, and we have never seen anything we liked so well amongst Sedums. It is an excellent type for this purpose, the spreading stems covered with small starry yellow flowers, inconspicuous individually, but in the mass making a brave show of colour against the light green succulent leaves. The stems spread about in a charmingly informal way, and the plants thus suspended have an attractive aspect. *S. sarmentosum* should be made good note of for its beauty when thus grown.

The Vienna flower show was held from April 19 to 23. In a large group of various plants from the Imperial gardens, Schönbrunn, were noteworthy specimens of greenhouse plants: *Cantua dependens*, *Hovea Celsi*, *Dillwynia ericoides*, *Eriostemon amœnum*, *E. cuspidatum*, *Pimelea spectabilis*, *Acacia verticillata*, *Lachnæa purpurea*, and *Arbutus Menziesi*. From the gardens of Count Harrach came a huge specimen of *Grevillea longifolia*. Herr Max Leichtlin, Baden-Baden, sent cut flowers of interesting hardy plants. Very conspicuous were *Pyrus Maulei superba*, *Iris formosa*, *I. iberica* var., *Aquilegia Stuarti*, and *Tulipa Greigi aurea*.—LOUIS KROPATSCH.

Tea Rose Mme E. Levet.—The heat and drought are distinctly the cause of this Rose being already in bloom on an open fence, for heat it must have to open its flowers to perfection. The buds are as hard as bullets, but when they open the colour is so clear and pure—a true canary-yellow—and the scent so sweet, that one cannot help wishing it were as constant and reliable as the parent of the race. It belongs to the Dijon family, and though it takes time to become established, it grows freely afterwards. The flowers are of medium size, with extra thick petals, and they last well on the plant by reason of their great substance.

Quick growth of Roses.—On February 20 I sowed a packet of seed of *Rosa polyantha nana hybrida*, and on May 10, exactly eighty-nine days after sowing, the first flower from the seedling plants opened; others have followed, and the little bushes are full of buds. This is a remarkable instance of the rapid growth of a hard-wooded shrub, and more so, as the seed of the Rose family is, as a rule, very tardy in vegetating. No artificial heat was given the seed. The pot stood throughout in a sunny, unheated pit. No doubt this

speedy development may in some measure be attributed to the extraordinary amount of bright sunlight which we have been so long enjoying.—J. M., *Charmouth, Dorset*.

Mappa Gortearna is a noble fine-foliaged plant. A specimen of it may be seen in the Victoria house at Kew, and its fine aspect suggests that such a plant should become general in the stoves of English gardens. It has just flowered, but the flowers are not of value, the chief value of the Mappa consisting in its broad, striking leaves, fully 2 feet across, distinctly peltate in shape and of a rich green colour, against which the bold, rose-tinted nerves are in telling contrast, whilst the under surface is tinted with reddish brown. Each leaf is supported by a strong stem, and the whole aspect of the plant betokens vigour and distinct character.

Irises of the germanica section are bursting into full beauty at Kew. We singled out from the collection two very fine varieties which deserve special mention. One is named Purple King, a remarkably showy and handsome flower and not common in gardens. It is, however, these richly coloured kinds that are the most effective. The broad standards are rich claret-purple and the falls of a deeper shade. Another fine Iris is named pallida minor. The growth is dwarf and the stems rise only a few inches above the sturdy leafage. An immense quantity of flowers is produced, making a mass of pale purple, the falls of a deeper shade than the standards. It is such Irises as these that create an effect in the garden.

Solanum crispum.—The note on page 387 refers to this shrub on the wall at Kew, but I quite agree with the writer's opinion as regards the probability of its success in the open throughout the southern part of the country. Its vigorous, sturdy habit of growth renders it unfit for a wall, and the enforced restriction essential to keep it in bounds in such a situation robs it of by far the greater part of its charm. I have a group of it in quite an open bed, and the soil is chiefly clay or marl, but so far the plants have proved quite hardy and never failed to bloom. This year they make a delightful picture, each bush being smothered with flowers. The abnormal heat and drought, with the comparative absence of spring frosts, have doubtless contributed to and favoured the extra fine display. A plant so exceedingly beautiful, and withal so unlike anything among flowering shrubs common to gardens, ought to be popular.—A. H.

A note from Penshurst.—Although we have had a long spell of dry weather (we have had no rain since March 1), the plants in our rock garden are looking well and blooming remarkably freely. *Dianthus alpinus* is in flower, a small plant 4 inches in diameter having forty fully expanded flowers and more than that number of buds. *D. cæsius* is in full bloom; so are *Ramondia pyrenaica* and *R. p. alba*, two plants of the latter having five and ten flower-stems respectively. *Heuchera sanguinea* has been in flower sometime; one plant has twenty spikes and another twelve. We have several more strong plants, but they have only two spikes among them. The only way in which I can account for this is that the two plants that are blooming so freely are planted in narrow crevices in the rocks, while the others are in large pockets. The various Saxifrages are in flower; one spike of *S. Hosti* measures 2 feet 6 inches in length. On a small patch of *Gentiana verna* we had nearly 200 flowers. The *Helianthemum*s are just coming into flower, while the *Alyssums*, *Drabas*, *Tiarella cordifolia*, and *Androsaces* (with the exception of *A. Leichtlini*, which is just coming into bloom) are past their best. The *Aubrietias*, *Veronicas*, *Lithospermums*, *Gypsophila prostrata*, *Iberis*, *Erigeron*, *Pæonies*, *Trollius*, *Cerastium*, *Lychnis*, *Ethionema*, *Erinus*, *Saponaria*, &c., are in flower, so that, notwithstanding the dry weather, the rock garden is looking very bright.—ROBERT HOSIER, *Swaylands House, Penshurst, Kent*.

The English Flower Garden.—Design, Views and Plants. Third edition, revised, with many new illustrations. London: J. Murray, and through all booksellers.

TREES AND SHRUBS.

PARK SCENERY AT CIRENCESTER.

THERE are many fine old mansions in this country located in the midst of grand scenery, parks well stocked with timber being still plentiful, and, it is to be hoped, will be sus-

in the way of planting. Our forefathers would have appeared to favour planting or forming avenues rather than grouping forest and other trees, and if these said avenues, most or all of which led up to a mansion or some other point of interest, did or do look somewhat stiff and formal in a young state, there is no mistaking their effect when the trees have attained some

doubtless there is much to be said in their favour, though not by me. Personally, I hold that there is more to admire in the fine clear stems of comparatively old trees of the commoner kinds of conifers than there is in the majority of perfectly formed younger trees of choicer genera and species.

All visitors to Oakley Park, Cirencester, the residence of Earl Bathurst, and these amount to many thousands in the course of a year—the grand old park being constantly open to all comers from sunrise to sunset—will agree with me that one of the most attractive features, because both imposing and uncommon, is the avenue of Firs—an admirable illustration of which accompanies these notes. These, from their striking resemblance to the interior or nave of a cathedral, are known as the “Cathedral Firs,” and whatever was in the minds of those who thus arranged these trees, there is no mistaking the remarkable effect produced by their stems. They are all of the common Norway Spruce (*Abies excelsa*), the avenue being about 150 yards long and occupying a width of 50 yards. The majority of these Firs are 110 feet high, and one of the largest, which was blown down a few years ago, was found to be 120 feet in length, this exceeding by 14 feet the recorded height in the journal of the Royal Horticultural Society, the specimen in this instance being found at Lynedoch, Perth. As far as girth of trunk is concerned, the Scotch trees have the advantage, the latter measuring 10 feet in circumference 5 feet from the ground, while the best of the Oakley Park trees are nearer 8 feet. In a young state they grow rapidly, but those at Oakley Park are very old, their exact age, however, not being recorded. They are known to be not less than 110 years old, and are thought by some to be much older. The older inhabitants of the district remember them well for upwards of 60 years, and state they fail to see any marked difference or change in their appearance during that time. On Lord Bathurst's estate there are other grand avenues, one of forest trees being 6 miles in length, while another is composed entirely of English Yews from 800 to 1000 years old. W. I.



“Cathedral Firs,” Oakley Park. From a photograph by Mr. F. Hoare, Cirencester.

tained for the benefit of future generations. It is to the forethought of those who are dead and gone that we owe many features of interest, as well as to the judgment and taste of latter-day landscape gardeners who have, so to speak, carved out some of the finest parks and the best bits of near-at-hand scenery from what was at one time only so many woods and rough fields, much good work also having been done

thing like their full size. Not till their trunks have attained great dimensions are avenues of trees to be seen at their best, and this may have had the effect of causing a discontinuance of planting deciduous or forest trees in favour of conifers of some kind. The latter are usually most valued when fairly large, yet perfect as regards the state of the lowest branches as well as the leaders, and

Azalea rhombica.—This Japanese Azalea, which was recently alluded to in THE GARDEN as a distinct early-flowering species, well illustrates the fact that some desirable plants may be in our gardens for years and never advance in popularity, while others bound at once into favour. These remarks were suggested by the perusal of the catalogue of one of our leading nurserymen for 1870, in which *A. rhombica* is there offered for sale, yet after a lapse of twenty-three years it is still little known. True, the price charged (one guinea) would indicate that the stock was limited, yet in the same catalogue *A. mollis* was, I see, quoted at half that price. While this last is now grown by tens of thousands, *A. rhombica* is still very scarce. —T.

Xanthoceras sorbifolia.—A fine flowering spray of this distinct Chinese shrub from a correspondent at Totteridge shows that in some situations in our home counties this *Xanthoceras* succeeds and flowers freely. It forms a stout bush of a tree-like habit of growth, whose branches are clothed with bright green pinnate foliage, and terminated by simple racemes of blossoms. The

individual flowers, of which many are borne in a raceme, are about 1 inch in diameter, the upper portion of the petals being white, while the lower part is of a bright coppery red—a very uncommon tint. Thus the general aspect of the flower is white with a distinct red centre. It was introduced into this country about twenty-three years ago, and at that time was thought likely to attain a considerable amount of popularity, but for some reason or other it has not done so. In many districts it will not thrive, while under some conditions it cannot be depended upon to flower in a satisfactory manner, but a good healthy specimen will bloom from every shoot. The flowers and foliage make their appearance simultaneously, but cold cutting winds are very liable to injure the tender leaves. This *Xanthoceras* succeeds best in a deep loamy soil that is not dried up at any time. The roots are few in number, but very stout and of a deep, descending nature. From this circumstance it does not like removal. A coloured plate of the *Xanthoceras* was given in *THE GARDEN* as long ago as 1875, it being in fact about the first hardy shrub so illustrated.—T.

Rhododendrons.—Truly is the season topsyturvy when we see all the ordinary June bloomers in flower and at their best early in May. The lovely Azaleas are in the same case, and whilst during such magnificent weather it is not possible to be otherwise than gratified that the bloom takes place under such conditions, yet must it be briefer than usual, not only because of the unusual heat, but also because the roots of the shrubs feel the drought materially. Happy indeed are those shrubs that enjoy a little shade and a somewhat cool position where the bloom may be more enduring. In every direction gardeners are driven to their wit's end to find time for watering *Rhododendrons*, but in far worse case are the nurserymen who, having deferred their planting to the last moment hoping for rain, have now to do that needful work at considerable risk. Happily, those shrubs if kept annually transplanted suffer much less than others.—A.

Ugly conifers.—I met the other day at Surbiton with a striking illustration of the merited condemnation of conifers on p. 339. In the fairly considerable forecourt of a large house are two conifers, one a fairly handsome well-furnished Deodar, whose only defect is that it is much too near the house; the other, a 50 feet high miserable, thin, scraggy *Wellingtonia*, off which it had been found needful to lop every branch some 15 feet up the stem. A more wretched example of what the assumed noble *Wellingtonia* can become in this country perhaps could hardly be found, yet there are thousands now some twenty to thirty years planted that are fast getting into the same condition. It would be well if any who contemplated planting conifers could first see what so many of the older trees are like. If they did they would probably think twice before using trees that can so deteriorate. This season, though usually the same, how beautiful both in leafage and flower have our deciduous trees been. What among all the conifers is there that can compare with a noble Horse Chestnut, a Crab, a Thorn, or even a *Laburnum*?—D.

The Judas Tree.—Doubtless many travellers by the high road running from Putney to Kingston have wondered what was the name of the beautiful standard tree growing and flowering so profusely by the roadside in the lodge garden at Coombe Wood. It is the Judas Tree, and flowering so profusely that it presented a striking object some 500 yards distant. I have never seen one flowering so freely before. Could we only induce it to grow as well everywhere, what a beautiful companion would this *Cercis* become to *Laburnums*, *Thorns* and the numerous other trees that bloom now.—A. D.

The Lime.—In the noble park, which will be opened to the public at Hampton Court for the first time on Whit Monday, there are some of the finest avenues of Lime trees to be found in the kingdom. The trees, probably some 200 years old, are planted in quadruple rows, and if set

in a single line would very probably reach twelve miles in length. It need hardly be said that these trees are now most beautiful; indeed the Lime is an exceptionally handsome tree in the spring and early summer, and does then materially compensate for its somewhat early defoliation in the autumn. Still country Limes are not to be confounded with those growing in towns, where dryness at the roots, and thrips or spider tend to the destruction of leafage early. The rich perfume emitted from the bloom and its valuable stores of honeyed secretion do somewhat perhaps serve to exhaust the forces of the Lime earlier than is the case with some other large growing trees.

Guelder Roses.—A plant of *Viburnum plicatum*, growing and blooming abundantly against a wall at Coombe Wood, shows how admirably adapted this form is for wall covering, for its balls or clusters of white flowers are then displayed to the utmost. There is in the nursery a single form growing as a low, dense shrub, so far unnamed, the small trusses standing erect on the flattish fan-shaped branches, which promises to make a singularly striking wall variety. I have seldom seen a more beautiful hardy white-flowered shrub than is this form, and hope soon to see it widely grown. The one referred to is about 3 feet in height, 4 feet broad, very dense and literally smothered with flowers.—A. D.

BOOKS.

CELERY FOR PROFIT.*

AFTER scanning through this the companion work to "Onions for Profit," the conclusion I have arrived at is either we in this country have much to learn in the direction of growing Celery profitably or else the Americans are content with very inferior produce. The latter view will very probably prevail when it is discovered that the varieties principally recommended by the author are the White Plume, Golden Self-blanching, and Giant Paschal. The first-named received a very extensive trial among us a few years ago and proved to be utterly worthless; nor does my experience with the golden-stalked variety justify me in using a less strong expression about that. Giant Paschal promised better things, but that, too, proved very disappointing, no amount of blanching getting rid of the strong flavour evidently dear to the Americans; nor could I prevent early bolting. If, however, we take away or object to the two self-blanching forms, then we cut away the ground from under the author's feet, much of the success attending the so-called new system of culture depending upon their retention. It may be the Celery as grown on the other side of the Atlantic is better in quality than I am prepared to believe without having actual proof, and, any way, discussing their methods of culture will not be altogether wasted labour and space.

Both the old and the new methods of culture differ considerably from what we practise. About raising and preparing the plants there is no fuss made, as with us. The seedlings, duly raised in heat, are certainly pricked out, but only in flats or shallow boxes, and not more than one-half or three-quarters of an inch apart in rows 3 inches apart. Allowing them more room promotes a too spreading growth of both roots and tops; whereas what is wanted is stiff little plants with one strong tap-root. Prior to planting out with a dibber, the longest of the leaves and also the tap-root are lightly shortened, and thus treated they are found to take to their fresh quarters very readily. In the old and still most generally adopted method, furrows filled with manure, or better still, rich compost, are recommended, but not insisted upon, nearly or quite as good Celery being grown on ordinarily well-manured ground. We hear nothing about deep digging, manual

labour being far too scarce and expensive, nor does the author state how far apart these single rows should be, but advises disposing the plants 5 inches apart in the row. As far as the early crops are concerned, not much after cultivation is needed. What there is necessary is briefly summed up thus:—

A little hoeing, as other crops receive it, is about all. Early in July the plants will be large enough for bleaching. I never earth up the early crop, but prefer to bleach it in the simplest manner by means of a few old boards 8 inches to 12 inches wide, such as can be found lying about on almost any place. There is no need of handling or tying either. Just take two boards and lay one on each side of the row, then take hold of the outer edges and turn them up together and against the row. That is all. In a week or two you may begin to use Celery.

The italics are mine. What sort of stuff should we get after a fortnight's bleaching in this country, even if White Plume be the variety grown? The foregoing has reference principally to garden culture, the ordinary field-grown crops being mostly earthed up for a time with the aid of either ploughs or much widened hoes, such as are used for scraping the roads in this country. Illustrations are given of this and other methods of blanching Celery in vogue with us as well as in America. All these, however, are considered "too cumbersome, too laborious, too expensive," and this brings us to the "New Celery Culture." Instead of the widely-followed practice of setting out the plants in single rows or shallow trenches, the latest move is to grow them in beds. The writer is as yet a little undecided as to what space to allow the plants, but favours arranging them 5 inches apart, in rows 10 inches apart, this being "as close as White Plume should stand, in order to bleach well without further manipulation, and yet gives a better chance to mark out the ground, set out the plants and run the hand wheel-hoe through the patch than when we plant 7 inches apart each way." In order to properly blanch the outside rows, boards are brought into requisition, but the rest can be dug up fit for use when required. What can be more simple than this if only it would work well in this country?

After devoting a chapter to different methods of irrigating or otherwise simply watering the Celery quarters or fields, the good old plan of running loose tile drains either under the rows or between the beds not being omitted, the author next alludes to the "Enemies of the Crop." Caterpillars appear to be troublesome, and diseases of a fungoid nature have also to be contended with, but no mention is made of our worst enemy, the Celery leaf miner, or grubs of the *Tephritis oenopordinis*. Following upon this we have a well illustrated chapter describing several good methods of storing winter Celery, and these are worthy of close perusal, if not adoption in this country. I cannot do better than quote a part of the chapter headed "The Wintering Problem":—

One method of storing for family use consists simply in taking up the plants by prizing under each with a spade, simultaneously taking hold of the tops with one hand and pulling. Then set them closely together as the bunches of roots will permit, upon and partially in a layer of moist muck or loam in a corner of the cellar. Keep this layer always moist or wet, and the foliage always dry. Use the plants that were most nearly blanched at first, saving those which had the least done to them in the field for the last. Instead of putting them directly on the cellar bottom, you may place them into a box of convenient size having a layer of muck or loam in the bottom. Just above this layer bore a few holes into the sides of the box, and through these you may apply water as needed. Place the box in a corner of the cellar bottom. Another good way for the home grower is to throw the old manure out of a hotbed, put in a little loam, and stand the Celery upon and in this, as advised for storage in the box. First cover with shutters, but when winter comes in real earnest put fine hay or leaves upon the Celery, filling the frame clear up to the top, then replace the shutters, and finally the shutters and straw, hay, or other coarse materials as a further protection in cold weather. The sides of the frame should be well banked up. In an emergency a few plants, nicely cleaned and trimmed, may be kept for some time by

* "Celery for Profit." By T. Greiner. W. Atlee Burpee, Philadelphia, U.S.A.

packing in alternate layers with moist Sphagnum Moss. Of course they should stand top side up.

The plan of packing four or more rows of plants in trenches dug in well-drained positions, covering with board troughs, and on these banking over first soil, then straw litter, is that recommended for market growers, the bleaching of coloured stemmed varieties being effected while thus stored.

A notice of this book would not be complete without reference to the "outcome in dollars and cents." This, to say the least, is somewhat startling, though probable enough all the while there is a good demand for second-rate Celery. Separate returns are given for both the old and new methods of culture, as well as for summer and late crops. The expenses connected with cultivation of the summer crop on the "old culture" are put at 260 dollars, and the returns by 150 bunches at 30 cents = 450 dollars, this giving a net profit of 190 dollars, or rather more than £39 per acre. Nearly five times the number of plants, or about 115,000, are grown upon an acre of ground by the "new culture" at an estimated cost of, including rent of land and commission on sales, 920 dollars. The returns by 7000 bunches at 30 cents = 2100 dollars, this giving a net profit of 1180 dollars, or £246—a wonderful gain that! The same number of late plants are grown per acre, but the expenses being heavier and the prices obtained less than in the summer, the net profits by the "new culture" are put at 850 dollars, or about £177, as compared with 165 dollars, or about £34—the net gain by the old culture W. I.

FERNS.

A FERN NURSERY.

THOSE who care for Ferns should visit the nursery of Mr. H. B. May at Dyson's Lane, Edmonton, where many large houses are filled with the more popular kinds and rare species and forms. It may be appropriately called a nursery of Ferns, although Carnations, Palms, stove and bedding plants are grown in thousands for the London market. Ferns, however, are the chief feature of interest, and in this nursery have been raised many beautiful novelties which have gained a place amongst the leading kinds. Certain kinds are grown in immense quantities, and a houseful of *Adiantum Farleyense* in various stages of development is very beautiful. One sees the fine effect of the bold fronds when thus presented to view, every plant in full health and vigour. It is neither desirable nor necessary to make a mere catalogue of names. The popular Ferns, such as *Pteris cretica*, *P. tremula*, *Adiantum cuneatum*, and many others well known to our readers, have houses devoted to them to meet the large demand. It is worth while, however, to draw attention to a few of the more beautiful Ferns of recent acquisition or distinguished by well-variegated fronds. The *Pterises* form an imposing group, and no genus, perhaps, gives such a number of useful and attractive types. In one house is grouped together *P. Victoriae*, a finely variegated type, the pinnae distinctly and beautifully marked with silvery white. The plant is vigorous in growth, graceful, and varies little in its distinctive colouring, the fronds preserving their delightful silvery variegation. This is a Fern that growers should take good note of for its graceful aspect, fine variegation, and vigorous growth. As a rule variegated plants are the reverse of beautiful, but Ferns are a decided exception, some of the more interesting being those that have departed from the type in the colouring of the fronds. *P. tremula*, one of the best Ferns for houses and ordinary collections, has given rise to

several varieties. This is fortunate, as the parent is very easily grown, compact in habit, and in every way useful. *Elegans* is one of the most distinct, the plant not so bold in character as the type, but the fronds are delicately crested, and droop gracefully. This form is elegant and pleasing, a Fern that will prove a favourite. Another very fine crested variety is *P. tremula Smithiana*, comparatively new, but fast becoming a leading kind. Here, again, the fronds are well crested without losing the characteristic elegant growth. Some crested Ferns, forms of the Hart's-tongue in particular, when they develop a crested character are the reverse of beautiful. The crested destroys their fine, bold character, but in the *Pterises* this is not so. A charming variegated Fern is *P. tremula variegata*. The fronds show strong variegation, each pinna marked with silver colour, and the fronds have the same graceful aspect as in the type. Two forms of *Pteris* were raised in this nursery, and they are departures from the familiar *P. cretica*, one of the most largely grown of all Ferns. One is named *nobilis*, and in a note in THE GARDEN, Feb. 18, 1889, we mentioned that it would probably become a good market kind. Our remark has proved true, each year this distinct form being more largely grown. The fronds are well crested, and the plant of a close, not to say tufted habit. The other kind is named *Mayi*, and has been previously described in THE GARDEN. It is a valuable and highly ornamental kind, full of character and beauty. We may mention that there is also a variegated variety of *P. nobilis*, the fronds being distinctly marked.

Ferns abound on all sides. A large collection of *Gymnogrammas* is grown. That in request in quantity and amongst the most charming is *G. schizophylla gloriosa*, a Fern that has fronds like delicate lace. It is, perhaps, the most exquisite Fern in cultivation, and should be in every collection. In quite a small stage it is charming, and little plants are of use for choice decorations. A walk through such a nursery as this is interesting, as one sees Ferns in all phases of development from quite seedlings to full grown specimens. *G. Mayi*, a form of *G. peruviana*, is distinguished by the more spreading and bolder character of the fronds. A note may be made also of the beautiful *G. Alstoni*, which has triangular-shaped fronds, the upper part delicate green in colour, while underneath they are enriched with deep yellow farina, the pinnules curling at the apex to display this golden tint. Ferns from spores vary considerably in character, and a batch of seedlings of *Adiantum fragrantissimum* and *A. Weltoni* is noteworthy for the difference observable amongst them, one or two being quite distinct and fixed for a separate name. One may see many interesting things as this in such a nursery where the plants are raised in thousands every year. A splendid specimen of *Dicksonia Lathamii* showed this fine and distinct Fern in character, and when well grown it is a handsome type, the fronds bold in form and of good colour. *Lomaria Boryana* and the *Nephrolepis* were of note. The latter are suspended in the Fern corridor and have a fine appearance. One form may be alluded to. It is named *N. davallioides multiceps*, a variety of the well-known *N. d. furcans*. It has been awarded a first-class certificate by the Royal Horticultural Society, and shows sufficient distinction to merit a name. The chief difference is the more forked character of the pinnae, and they are narrower. It is very elegant, and the crested fronds are not heavy. Referring again to the *Pteris*, we may draw attention to

the now popular *P. Reginae*, a form of *P. Victoriae*, the pinnae distinctly marked and the plant more vigorous in growth. There is also a crested variety of it. We need not refer at much greater length to this nursery of Ferns, nor to the new kinds which have been described in recent issues. It is worthy of remark that at one meeting of the R.H.S. no less than four new Ferns were given each a first-class certificate. This may appear unreasonable, but every new Fern raised in this nursery possesses distinct character, either in habit or the colour of the fronds. All the more popular genera are also well represented, the *Adiantums* in particular, *Aspidiums*, *Lastreas*, *Davallias* and hardy kinds. The collection of varieties of hardy Ferns is remarkably rich, and comprises many important new forms of the Lady Fern (*Athyrium Filix-femina*), notably the most lovely of all plumose kinds named *plumosum dissectum*, which deserves a place in all collections of hardy species and their varieties. This is but a brief notice of an important and interesting nursery, but we have written sufficient to convey to our readers some conception of the vast and valuable character of the collection.

HEMIDICTYUM MARGINATUM.

THIS plant, which is the *Asplenium marginatum* of L., was separated from that genus by Presl in 1836. Hooker, in the "Species Filicum," retains the name of Presl as a sectional one, but I do not agree with the last author in retaining our pretty little Scale Fern (*Ceterach officinarum*) in this genus. *H. marginatum* has always been rare in cultivation. I had not seen it until recently I found it in magnificent condition in the new plant house of Mr. Sander at St. Albans. Some few years ago I grew this plant in the Orchid house, and used to grow it with a pan of water below it, but I was always particular, if any water remained in the pan, to empty it out and give fresh, and, I think, if this rule was to be strictly observed, there are many Ferns that would be greatly benefited by this treatment. The pots ought to be well drained, using for soil good rough turfy loam, say two parts to one of rough peat, and a good portion of sharp sand, the whole to be well mixed. The plant should be potted somewhat lower than usual, for as it grows it will make a lot of surface roots. The plant throws up fronds from 3 feet to 6 feet and 12 feet in height, or even more, and they are simply pinnate, the lower pinnae, which are the largest, being from 1 foot to 18 inches long and some 4 inches broad. These are entire and semi-transparent, the colour being a lively bright green, through which its marginal reticulated venation is distinctly seen. The species is somewhat widely spread in South America and in the warmer parts of Mexico and the West Indian Islands. All those having sufficient room to accommodate it should add it to their collection.

WM. HUGH GOWER.

SHORT NOTES.—FERNS.

Cincinialis flavens (Jus. Stevens).—This is the name of your Fern. It is a beautiful small growing variety with green pinnules, which are deep golden yellow beneath, the row of black marginal lines rendering it very handsome and distinct. It was called *Notholaena chrysophylla* when first introduced, but the above is its correct name. W. H. G.

Pteris Victoriae (H. Mathews).—Yes, this is a very pretty crested form of this species, but it is not new, for I saw the same thing some months ago in the nurseries of Messrs. Low and Co. at Clapton, and I

also saw there the green form of the plant. It also had produced a crested variety, so that you are quite forestalled in making this a new plant.—W. H. G.

Drynaria musæfolia.—I saw this Fern recently in beautiful condition grown in a basket, and for such a position I have constantly recommended it for thirty years. It has been said that its plain and simple fronds were quite unsuitable in such a position, but anyone requiring a thoroughly distinct and beautiful object should so use this plant. The fronds are simple, from a foot to 3 feet in length and from 2 inches to 4 inches broad, the colour being very pale green, which allows the network of dark green veins to be seen very distinctly, and forms one of the prettiest objects one can conceive. It is very different from the usual Fern foliage. A plant of it in a basket is the most beautiful object in the stove. It is a native of the Malay Islands, and consequently requires stove warmth; it has a creeping rhizome and grows quickly. Those who have never tried this plant should do so.—W. H. G.

Ceterach aureum (*Cyrt. W.*).—The plants brought home by you from the Canary Islands are, no doubt, of this species. I have had the plant growing, and some few years ago a gentleman in Edinburgh had a quantity of plants, but I do not know how he succeeded with them. This will thrive best in old mortar rubbish, but do not let it be composed of too much brick, and when it gets a bit established stand it full in the sun. I have always found that this plant, as well as our common kind, likes sunshine.—W. H. G.

Cheilanthes farinosa.—"H. D." says, do I refer under this name to a plant that he used to know by the name of *Cassebera farinosa*, and in answer I may state that the plant I referred to as having come from Messrs. Birkenhead, of Sale, I suppose, is the same as he means. This was a name that it was known by a very long time ago; but there is a plant in cultivation correctly called *Cassebera triphylla*, a sweetly pretty plant, which comes near to *Pellaea* in its general character; it is quite destitute of farina.—W. H. G.

Selaginella Wallichii.—J. Denning sends me part of a frondule of this plant for a name, and as it is one of the most beautiful of the large growing kinds it deserves a note. It used to be somewhat common in gardens, but latterly it would appear to have become more rare. It grows erect, making frondules a yard and more in height and some 18 inches wide. It loves the shade, and may be potted in peat, loam and leaf-mould made fairly sandy. As it comes from the Philippines and the Malay Islands, it thrives best when kept warm and moist.—G.

Cheilanthes Mathewsi.—Miss Shenstone sends me a frond of this species, asking if it is not *C. Sieberi*. It is a much prettier plant, a native of Peru, whilst the species named by her comes from New Zealand and New Caledonia. I have a small form which I take for it from the Isle of Pines. In *C. Mathewsi* the frond is some 6 inches long and nearly an inch broad, with alternate pinnae and tripinnate. I have some specimens marked by the same name, which have only bipinnate, but both forms appear to have the same incurved margins. The plant is in cultivation, and I believe thrives well in the house with *Masdevallias* and such-like cool Orchids.—W. H. G.

Leiophyllum buxifolium.—This is one of the prettiest and neatest of ericaceous plants now in flower. It forms a compact rounded little shrub from 6 inches to 1 foot high, with smooth, oval leaves of a deep shining green, and, as is implied by the specific name, Box-like in shape and texture. The apex of every one of the branches is at this season furnished with a corymb of flowers, which are white, tipped with pink. Although each corymb is no more than an inch across, so thickly are they borne that the foliage is almost hidden by flowers, and at a short distance the plants have the appearance of little mounds of white. This species, which is evergreen, constitutes in itself a genus;

varieties of it, however, are known, one of which, with spreading branches and oblong leaves, is called var. *prostratum*. In New Jersey and Carolina, where it is a native, it is known as the Sand Myrtle. It was introduced to this country in 1736. It likes a moist, but well-drained peaty soil.—B.

NOTES ON THE SEASON.

It has not been the lot of many of us to chronicle such a remarkably dry period at this season of the year as that of the past two months. Speaking for myself, personally I never remember such a dry spring as the present. Within the last day or two we have had one fairly good shower with minor sprinklings, but not nearly enough has fallen yet to moisten the soil to any depth. Early-sown seeds in the open now want rain badly. I note that such things as Onions, Carrots, and the Brassica family are all germinating remarkably well, although but little growth has so far been made. The early planted out Lettuce, which are grown by acres in this part of the country, as yet make but slow progress; rain in occasional showers would now start them off apace. Peas look well and of sturdy growth; these also have come up well; so did the early Spinach, but for the first time in my experience the sparrows eat it ravenously. The Peas have also to be netted or protected in some other way, otherwise this mischievous bird would spoil the entire crop; the Spinach has, however, escaped before. This year, singular to say, sparrows have not touched the Carnations, which for several seasons previously they have treated cruelly where not netted. Without nets upon them this spring I see no injury whatever. Why the sparrow should thus have its preference in various seasons seems to me a puzzle requiring some solution. Early Lettuce has also escaped their notice thus far; for this I find they have usually a liking.

The planting out of *Violas* from cold frames (autumn-struck cuttings) has been delayed for want of rain until to-day; all of these I hope to have in their summer quarters within the next few days. The bedding *Calceolarias* will then follow suit, for I find that the earlier these are planted the better are the results throughout the summer. As soon as they are in the ground one stopping is given them, and another later on when it is not needful to have them in flower so very early. What with one thing and another it will now be possible to continue planting out, and so avoid such a quantity of it within a shorter space of time a few weeks hence. All flower beds should be prepared for planting as soon as possible; whilst the weather remains as it is and the ground still dry the beds can be turned and manure worked in better than after a heavy rain. I never make it a practice to manure flower beds heavily, nor to use faecal manures to any extent; well decomposed leaf-soil or some of last year's hotbeds or old Mushroom beds will answer better than any rank manures. Where edgings are made up of *Echeverias* or other succulents, as *Sedums* and *Sempervivums*, a deal may be done in forwarding the work of planting. As soon as the hardier plants afore alluded to are all out it will be perfectly safe to proceed with these, many of which are perfectly hardy of themselves, but which bear shifting or pulling to pieces about now better than later on.

Annuals have thus far had a rather poor chance, but with a few growing showers, which I think we may reasonably expect in addition to what has already been received, they will make good progress. Not wanting them particularly until the end of summer, I have not sown yet to any extent. Some little planting amongst the hardy herbaceous plants has been deferred through the dry state of the ground. There is not much, fortunately, to do, but a deal may be done yet with late summer and autumn kinds by planting a little deeper than usual so as to direct the water given to where it is most required. The mulching of newly-planted borders of these as well as other hardy plants should be duly considered. Last season I made a new border specially of autumn-flowering subjects, which did remarkably well with

attention to watering. This season I intend to mulch as soon as I can spare the time, so as to save watering and to keep the roots cool and moist. Old roots of Dahlias will now be just as well off in the ground as out of it; even if one or two of the earlier growths do get caught by a frost in May, later ones will push up. Planting out early, and that rather deeper than usual, is better than the *vice versa* course of treatment, besides which they are out of the way. Such tender things as Geraniums and sundry other bedding plants of about the same constitution in this respect are already outside, protection at night being afforded for a time. This matter of temporary protection has been met by means of Bamboo stakes to a large extent as a framework; these are exceedingly useful things to have in a garden, being easily manipulated for various objects. Later on they will be in use in various ways for climbing annuals and other things besides that of more immediate use as stakes. Last season I used these Bamboos of 10 feet or more in length as supports for *Tropæolum canariense*, finding them admirably suited for this rapid growing climber. This reminds me of Sweet Peas, which many growers sow in rows as other Peas, but I must say I prefer them in patches with intervals between; in this way the various kinds in such distinct colours as they are now to be obtained can be most effectively disposed. There are other things in the way of climbing annuals that are worthy of more consideration where there is room to set them off to advantage. *Cobæa scandens* makes a very rapid growth, being raised in heat and planted out in May; then there is *Mina lobata*, a half-hardy kind, which succeeds well in a warm situation, besides which *Tropæolums* and the tall *Convolvulus* add still to the list.

In alluding to early-flowering trees and shrubs, it is particularly noticeable this spring how forward they are on the whole. Horse Chestnuts are now (April 22), and have been for some days, beautifully in flower. *Cydonia japonica* is nearly past, having flowered profusely. *Pyrus sinensis* (the Chinese Crab) is now a mass of floral beauty. The *Rhododendrons* are now coming on fast; some of the earlier kinds even are past their best. The deciduous *Magnolias* are quite gone out of flower, whereas in some seasons they are now in their best condition. Thus far there has not been any possible fault to find with the freedom of flowering, and but little harm has been done by the morning frosts, mainly no doubt owing to the unusually dry weather. Roses are in our case looking fairly well; they might be better, they might be much worse. Exposure to the prevalent easterly wind is, however, very trying to the young growth. I am disposed to think that some who have been looking forward to a season of Roses above the average may yet meet with disappointment more or less. I find in some cases the wood is dying back upon standards. Having a reserve in pots, however, it does not give so much anxiety. Newly-planted trees and shrubs have not by any means had a favourable time of it thus far. Those who took the most care in planting, watering afterwards, will not have any occasion to regret the trouble they took. This week I have had to water a number that were newly planted, and they already look all the better for it. In some cases a moderate pruning will have to be given to Laurels where the foliage is falling. In exposed places the turf is beginning to look brown—more like July than April. Those who were late in relaying turf will have some trouble in keeping it fresh unless the water supply is of the best kind. In bad cases it would be a very good plan to lightly mulch with cocoa fibre for a little time. Thus far I have only had to mow twice, once in March and once in April—a record that will rarely be lowered. Now even the machines are not set down so close as they would have been were there more grass to cut. It is, I consider, a mistake to cut too severely close under present conditions; the collecting boxes are always used, I might say, for I have to learn that it is the better plan to dispense with them. As soon as a good soaking rain falls, the paths will be amongst the first things to claim spe-

cial attention. Rolling the gravel is now next to useless, no real impression being made; sweeping meanwhile has to be done cautiously, so as not to make matters worse. WEST MIDDLESEX.

ORCHARD AND FRUIT GARDEN.

GRAPE BLACK ALICANTE.

A FEW years ago Lady Downe's was everybody's Grape who required or desired a late variety, but very few were able to combat successfully with the scalding which annually deprived the bunches of the best of their berries. I am of opinion that Black Alicante would still be preferable to Lady Downe's under the most ordinary treatment. Provided there is a good border, the Alicante will succeed better than any other Grape with which I am acquainted. When the bunches are newly formed, and up to the time when they are coming into bloom, they look exceedingly small and unpromising, but after the berries are fairly set they swell out in a wonderful manner, and invariably form handsome bunches. The berries set more thickly than those of any other variety I know. I never yet saw an imperfectly set bunch of it, and this in itself is a recommendation which should not be overlooked. From the time the berries are set until they are thoroughly finished they exhibit no flaw or blemish; on the contrary, they colour well and become covered with bloom. This variety will bear with impunity a heavier crop than any other kind I know. In short, a weight under which others would shank and shrivel is unflinchingly borne by the Black Alicante. And whoever heard of or saw this variety not colouring through excessive cropping or any other cause? while its flavour, which is the main point in the case of all Grapes, is second to none in midwinter, and, though much thinner in the skin than Lady Downe's, it keeps as long in perfection as that variety. Altogether, I think it is an excellent Grape. J.

Apple Blenheim Orange.—Mr. Tallack has no very high opinion of the Blenheim, while I, taking it for all in all, consider it the grandest Apple in the world. I know young trees do not bear freely, but anyone having large old trees of inferior sorts can soon convert them into Blenheims by heading them back to branches the size of one's wrist, or even smaller, and inserting from 20 to 100 scions, not, as is commonly done, by cutting down to two or three main stems and putting a couple of grafts into each, mutilating wood and bark with mallet and chisel, which soon engenders decay, and the tree survives but a few years. A lecturer on "Fruit Culture" only a few weeks since said, "It is useless to graft old Apple trees; they live but a short time, and I never knew them to prove satisfactory." Now I can prove from long experience that grafting old trees in the way I have described is a most profitable way of dealing with inferior sorts. I have trees fully seventy years of age that I so grafted more than thirty years ago. These made splendid growths, are now in perfect health, and since the second year after grafting have never failed to produce fair average crops. It would now puzzle an expert to find out where the grafts had been inserted. In taking charge of this place thirty-five years ago, I found an old espalier Pear tree with no sign of fruit, and on making inquiries as to the sort, no one could tell me, for the oldest hand had never seen a fruit upon it. I tried for a year or two to bring it into bearing by root-pruning, &c., but failing to get a single fruit I headed it back, and inserted twenty scions of Louise Bonne of

Jersey, which produced two Pears the first year. The tree is now as large as in its original state, and has never failed to produce good average crops since. I would, therefore, strongly advise all who have old trees of inferior sorts to convert them into good profitable varieties, as described above. I should like to add a word on storage of Apples. Mr. Cheal, in his "Fruit Culture," advocates laying them on clean wheat straw. This is a common practice, but in my opinion it is the worst material that can possibly be used for the purpose. It soon becomes musty and destroys the flavour of any fruit. Clean slates are the best for retarding the ripening and preserving the flavour either of Apples, Pears, Peaches, or Plums. The Blenheim may be so kept in good condition till March, and if stored in broad-mouthed earthenware pitchers, with the tops tied down with waterproof paper like pots of jam, it may be kept fully two months longer. The fruits should never be meddled with till wanted for use.—W. SANGWIN, *Trelissick, Truro.*

The "Wise" Apple.—On account of its naturally late-blooming character, the above is the



Grape Black Alicante.

local name in many districts of the variety Court Pendu Plat, or Garnons, as it is generally called in Herefordshire. This season, although fully three weeks earlier than usual, it is still the last in bloom amongst choice dessert kinds, as amongst the cider varieties there are some which bloom even later. Whether it will set its fruit this season as well as the earlier varieties have done remains to be seen.—A. Y.

The Plum crop.—It is rather strange that frost which killed Strawberry blooms in the bud should not have annihilated the Plum crop. Many of the blossoms were killed, but enough escaped to give as much fruit as the trees can bring to perfection. I have just been looking at some Green Gages in such an exposed position, that they cannot be depended on to bear a full crop more than once in six or seven years. The soil underneath them is covered with blooms that were killed, but a great number have escaped, quite enough for a good crop, and these look very healthy. With a change in the weather they will swell away

rapidly. These trees are fully open to the east wind, there being no break to its force for a quarter of a mile. When they were in full bloom they were visited by from 12° to 14° of frost—enough to kill the Lilac in the bud. The Victoria will undoubtedly yield large crops this year, for its blooms have more frost-resisting powers than the Green Gage and many other kinds. All that is now required is a good rain and some warm nights, which would so clothe the trees with foliage as to render the crop practically safe and help to keep them free from aphides. For years I do not remember to have seen Plums so covered with bloom. Morello Cherries, too, give a promise of heavy crops, but they, of course, are not yet out of danger.—J. C. B.

VINE BORDERS IN HOT WEATHER.

If there is any truth in the assertion that it is impossible to give Vine borders too much water during the growing season, it would be most apparent this spring. The present generation of gardeners seem very unanimous in the opinion that they do not remember to have experienced such extraordinary weather as during the past ten weeks, at any rate at this period of the year, cloudless skies and drought being the order of the day. Naturally, the Vines must have evaporated exceptionally large quantities of moisture lately, a good portion of which was absorbed from the border. As a matter of course, this will have necessitated or caused a freer use of the watering-pot or hose, especially when those responsible hold views such as I hinted at when commencing this paper. The question is, however, can any hard-and-fast rules be laid down as to how often the borders should be watered and the quantity of water that should be used each time? I have long maintained that everything ought to depend upon circumstances; that is to say, what may be right and proper in one case would perhaps be altogether wrong in another. The most successful growers are those who, instead of having fixed times for watering borders of all descriptions and in various localities, take particular note of every condition in each case. Borders may be deep, extensive, composed of retentive materials, and none too well occu-

pied with roots; while others perhaps in the same garden may be narrow, shallow, of a non-retentive character as regards the soil and crowded with roots. Obviously the treatment ought to be different in each case, the smaller borders requiring water most probably six times as often as the larger ones. Then, again, the position of a border ought to materially affect any decisions arrived at. Narrow, raised borders, enclosed by brick walls and the same exposed to the heat of a house or hot-water pipes, suit Vines remarkably well, always provided it is remembered they are liable to become dry quickly and are watered frequently accordingly. Under my charge there are two such raised narrow borders, these being crowded with roots and supporting Vines carrying heavy crops of fruit. During the month of April a thorough soaking of water twice a week has been none too much, the Vines never looking better than they now do.

The rest of the Vines in the same house are rooting in a comparatively large border, and as yet these have only been watered twice this year, yet they apparently have not wanted a drop more.

The nature of the soil of which a border is principally composed has even more bearing upon the frequency with which the borders should be watered than even the extent of the root-run. Instead of its being scarcely possible to over-water Vines in some soils, I hold that those in charge cannot well be too careful in the matter. Curiously enough, it is a certain class of light soils that are the most liable to become sodden and sour. At first sight, the turf from the Wiltshire Downs, overlying chalk in some places and ironstone in others, would appear about the unlikeliest of all soils to suffer from an excess of moisture, yet the greatest judgment has to be exercised as to when to apply water, as the "spongy stuff" holds water surprisingly and sours rapidly. Just the same thing occurs with soil we procure from off limestone rock hereabouts. Unless watered very carefully indeed, this light fibrous soil becomes as heavy as lead, followed by plants of all kinds, Strawberries and Chrysanthemums in particular, quickly going wrong. Our outside Vine borders are, unfortunately, largely composed of this deceptive stuff, and when to apply water is always a matter for very careful consideration. Only once have I watered these outside borders this season, and that proved to be a risky proceeding. For a few days it stopped the previously good progress of the Vines, the berries not swelling at all satisfactorily, and had a heavy rain fallen when it threatened, this would have greatly aggravated the evil. With such soils as these to deal with it is of the greatest importance that saturating rains be warded off and moisture conserved by mulchings of decaying leaves, or old Mushroom bed manure, rather than supplying it very often, and which may prove once too often, from the surface. Moderately strong clayey loams with which mortar rubbish, charcoal, wood ashes, burn-bake, ground bones and such like are freely incorporated, though fairly retentive, yet part with moisture more quickly than does the spongy soil just alluded to, and require to be more frequently watered accordingly. Masses or large borders of this compost do not, however, need the thousands of gallons of water at a time they sometimes receive. If these do not eventually sour the soil, they at any rate wash much virtue out of it, and such heavy supplies are, to say the least, very wasteful. More often than not elaborate systems of drainage are totally uncalled for, the best results attending the practice of supplying just enough water without flushing the drains. This may be thought carrying a notion too far, and an injurious extreme be reached. Hundreds of instances may be met with where water is very frequently and most abundantly supplied with excellent results, but that would not prove that equally good or perhaps better crops would not have been obtained at a considerably less cost if only the growers had been less free with the watering can. The chilling, soddening effects of too much water are plainly visible in many vineries, and in reality Vines suffering from being subjected to an over-liberal supply and a rich diet are more difficult to restore to good health than are others that have suffered from having too little. When the leaves formed by sub-laterals are very thin and of a somewhat sickly yellow hue, that to me is proof positive too much water has been supplied to the roots, and faulty ripening of the crop is the usual outcome.

My advice, therefore, to those who may stand in need of it is to have no fixed times for watering, but rather to be ruled entirely by the state of the border, this being examined rather frequently and watered when approaching dryness. In that state a very little water will go a long way. If from neglect or faulty routine the watering is delayed till the soil to a considerable depth crumbles badly in the hand, then a much greater amount of water, and more than one application, will be needed before it is properly re-moistened. If, on the other hand, the soil is in a thoroughly moist state when a fixed time for watering comes round, and regardless of this the soaking is given, then the chances are that much harm will result. Plants in flower-pots are not given water when the soil is in a fairly moist state, and if this is because they do not need it or may be injured by it, how much more needful is it that caution be exercised in respect to watering large masses of less exposed soil. It may not be generally known, but it is an indisputable fact, nevertheless, that newly-planted or newly-potted plants, and notably Grape Vines, form fresh roots most quickly and abundantly when the soil is kept a little on the dry side. Let them have the benefit of plenty of atmospheric moisture; but not till they have taken possession of the new soil ought much water to be applied to the roots, this not merely to avoid souring the soil, but also because it favours an early and strong root-action. It must not be gathered from the foregoing that I wish to encourage neglect of watering, but, on the contrary, wish to convey the view that Vine borders should be even more closely looked after than is the case in very many instances, and more judgment exercised by those in charge.

W. I.

Tying up shoulders of Grapes. There cannot be any question that the practice of shouldering up bunches of Grapes is often carried too far. Often upon entering vineries at this season of the year after the bunches have been thinned a perfect network of string meets the eye at every turn. True, by spreading out the bunches to their fullest extent they look much larger than they otherwise would do, but after the Grapes are ripe and cut the bunches are anything but pleasing when on the dish. I do not go so far as to say that no bunches should be shouldered, as in such varieties as Barbarossa, Trebbiano and others of that ilk, shouldering must be practised if handsome bunches are to be produced. Occasionally a few bunches of other kinds, such as Muscat of Alexandria, or even Mrs. Pince, or extra large bunches of Black Hamburgh, may be improved by a little judicious shouldering. What I like to see are nice, tapering pyramidal bunches, all ugly shoulders having been previously removed. It often takes a lot of courage to remove portions of clusters of bunches, but those growers who practise it never have any fear on this point, knowing that those portions which are removed do not add either to the symmetry of the bunches or to the look of the crop when finished. All the ugly shoulders should, of course, be removed just as the bunches are forming, thereby throwing all the strength into the main bunch. The practice I pursue with all Grapes, except in the case of extra large bunches, is not to shoulder up at all, but to merely go over the bunches just as the berries are stoning and gently raise the shoulders so as to prevent any undue binding. As the berries take on the second swelling they gradually push the shoulders upwards until these have quite a rounded appearance.—Y. A. H.

Strawberries—change of stock.—Most cultivators will bear me out when I state that at some time or other when visiting other gardens, varieties are seen doing remarkably well, although the treatment they are receiving differs but very

little, if any, from that given the same variety in other places. Of course good culture is answerable for a deal of the success, but not so to such an extent as to make any difference noticeable. A cultivator in selecting his varieties for forcing may be very careful in choosing and layering the earliest runners obtainable, also growing them on in a rational manner, and yet he may not succeed in securing high quality fruit, and this plentifully. When I first took charge of these gardens the Strawberries were not very satisfactory, so I set about getting a fresh stock. These were varieties which I knew well, but some of them I was very disappointed with, as they proved very unsatisfactory. This puzzled me, as the soil is suitable for Strawberries. Soil no doubt has great influence on the well-doing or otherwise of many varieties of Strawberries, but it is quite evident that it is not the soil alone which is at fault when the same variety will succeed and fail when procured from different sources. I was speaking to a well-known gardener the other day, and who is a large grower of forced Strawberries, as to the variety *La Grosse Sucrée*, as he had a fine lot of this in fruit at the time. At one time he told me that he thought but little of it, but on having a fresh stock it succeeded far beyond his expectations. There cannot be any question that far too many plants are perpetuated from a debilitated stock, and this is why failures are so frequent with special varieties for forcing. What is wanted is a good stock to start with, and to raise the batch for forcing from yearling plants grown for the purpose if possible. A variety I think which requires extra care is the good old Keens' Seedling, than which when well grown there is not a better second early in cultivation. The first care is to get a good stock, and then to look well after it by layering the stock annually. Layering annually, however, is not the only care needed, as of course the plants require to be well grown.—A. YOUNG.

Does lifting fruit trees retard their blooming?—According to my experience lifting fruit trees does not make any difference as to the time of blooming. It does retard the blooming period of such things as Roses, &c. For many years I have been watching how fruit trees behave in this respect. During the past winter I lifted several fruit trees both under glass and otherwise, and when the blooming period came I could not tell any difference between those that had been lifted and those that had not been so treated. I have some Morello Cherries on a north wall. One tree was lifted and all the soil shaken from it, and planted again at once, and at the present time they are all equally in bloom. A curious illustration of the effect of hot air on the shoots of Morello Cherries came to my notice this year. At the back of our cold Peach house Morello Cherries are planted, and in this wall near the top are some wooden ventilators from the house. Over these openings are trained Cherry shoots, and in these places the blooms were open ten days before those on the other branches.—J. C. F.

Packing Strawberries.—There are few fruits which it is more difficult to pack and send, so that they shall arrive safely at their destination, than Strawberries. I had a few very fine fruits sent me the other day in a tin box, packed with all possible care, but they arrived in a lamentably battered condition. Even in sending per rail or other ordinary means of transit it is found needful to use stout close-fitting boxes, the fruit usually packed in single layers, and then instructions added to use all possible care. In the face of these difficulties of transit at home, it was a surprise to see the other day several thousand apparently of flat wicker cross-handled baskets, each full of Strawberries, being unloaded at Waterloo Station, the contents in the soundest and most perfect condition. These fruits had been gathered in the open in the south of France, probably early the previous morning, then packed, forwarded by rail to Havre, thence forwarded by steamer to Southampton, again transhipped on to the rail, again at Waterloo reloaded on to vans, and thence to Covent Garden Market, and after all

the fruits arrive in a wonderfully sound condition. It is true the fruits are not so large as ours usually are, but, all the same, the result is astonishing. And yet the French have been quicker to learn the secret of safe transit per rail and steamer than we have, as found in the remarkable excellence which attends Grapes sent over long distances in the same way from the Channel Islands and elsewhere. The Strawberry baskets seemed to be about 18 inches by 12 inches and 3 inches deep, with a cross handle in the centre. The fruits were not shown to me, so that it was impossible to note style of packing, but probably only leaves were used. Over all were roughly sewn stout sheets of brown paper. Why not adopt similar baskets to send fruit per rail at home?—A. D.

The Gooseberry caterpillar.—As far as I have seen, this destructive insect is likely to give us much trouble during the coming season. I do not remember its ever starting on the bushes so early as this year. About the middle of April the caterpillars began their ravages on the bushes, and had I not taken strong measures to arrest them, every leaf would have been destroyed ere this. When I saw they had begun to spread I got a big barrel and put in it a bagful of quassia chips. On this I poured a quantity of boiling water. After a few hours I added a given quantity of soft soap water; this was all mixed together. While it was hot a man went over every bush and gave it a vigorous syringing. The solution was as hot as he could bear his hand in. On looking over the bushes an hour or so after you could see the caterpillars on the ground by the hundred dead. Last year I syringed the bushes three times during the season to keep the caterpillars down. This is not an expensive solution, as everyone knows, nor does it take a deal of time to syringe it on when a good syringe is used.—J. C. F.

The weather and the crops.—Although, taking the fruit crop as a whole, there is not much reason to grumble, and we shall get a very fair average, the most useful of fruits—Apples—are likely to be short. For this, the continued drought, the keen drying winds day after day, and the cold, biting nights are doubtless responsible. There was a grand show of blossom, but it withered prematurely, and the set is a poor one. The Apple moth was also very much to the fore and caterpillars are very troublesome, not only on Apples, but on Pears, Plums and Morello Cherries, necessitating careful picking; indeed, if this had not been done in time and carried out effectually, Pear foliage would have been riddled and the fruit spoiled. Two old trees of Van Mons Leon Leclerc well set with fruit were simply covered with maggots. All wall trees carrying fair or heavy crops of fruit were well mulched early in April and do not seem to feel the prolonged drought. Aphides in various forms—green, black and grey—are troublesome, but have been kept well under by the use of tobacco in powder and carbolic soap (a good insecticide) in solution. The continued drought is also responsible for any amount of red spider. Wall trees and Gooseberries, both bush and on trellis, would have suffered severely had not the enemy received a check from frequent and copious washings.—E. BURRELL, *Claremont*.

COLOUR IN EARLY GRAPES.

THESE remarks have special reference to the variety Black Hamburgh, this being the kind that is mainly grown for the early supply of Grapes, whether for home use or market. This date, however, may not be considered very early, as there are quantities of Grapes already ripe, but in the majority of gardens the earliest Grapes will now be colouring. Good colour, especially in such a variety as Black Hamburgh, is the trade mark of excellence. The want of colour, however, is often very noticeable, this being brought about by a variety of causes. Over-cropping is a sure cause of bad colour, let the health of the Vines be ever so good. Vines, when systematically over-cropped, will not long remain in good health. But with Vines in

good health, and the roots working freely in a suitable border, and this also duly supplied with nourishment, the Grapes should colour well. Where bad colouring does take place and the health of the Vines and other general details are as they should be, it is through the colouring process being brought on too rapidly. The Grapes are ripened up before their time, and with this well advanced it is hopeless to expect to lay on colour afterwards. It is a hackneyed phrase with gardeners in speaking of Vines which are loaded with fruit, "Allow the Grapes plenty of time, so that they may colour properly." But with Vines heavily weighted with fruit, although allowing them time in which to do their work may assist them, yet this will not lay on colour to the extent needed or desired. Plenty of time, however, is what is needed for Vines carrying a fair complement of fruit; but this must not be carried to such an extent through air-giving as to stop the roots from working freely, which they certainly will do if the structure is allowed to be draughty. What is wanted is a lowering of the night temperature, by having just sufficient warmth to create a buoyant atmosphere, or so as to prevent a deposition of moisture upon the berries. Although plenty of air is needed during the daytime, yet this must not be put on so as to create a draught, as Grapes can never be expected to colour properly in a draughty structure; nor must the temperature be allowed to range too high during daylight, but this need not take place, that is, with ventilation properly regulated. The ventilators during the night should be slightly open both at the top and bottom, increasing the ventilation early in the morning and again as necessary until the maximum amount is reached. A close and muggy temperature is very inimical to deep colour. An extra run of laterals is also sometimes recommended, but this may be carried so far as to quite crowd up the main foliage. A few laterals may certainly be allowed to run, but any indiscriminate abuse of the practice will surely result in the opposite effect to what the grower intended.

Y. A. H.

STOVE AND GREENHOUSE.

STEPHANOTIS FLORIBUNDA.

It may possibly be said by some that nothing new can be written concerning this one of the finest of all stove climbing plants. That may be so in a few instances, but I have an impression that the culture of this exotic is not altogether what it might be in some establishments. Its specific name is indicative of freedom in flowering; this fact even is not borne out under certain modes of culture. Personally speaking, I have never experienced this difficulty, and should much like to have to deal with a plant that has borne this bad character. The only case in which I think this would be actually possible would be that of a seedling, and then even I question very much if it be not more a matter of culture than of constitutional weakness. Where any difficulty arises in obtaining a profusion of flower it is more often than not caused by a too generous treatment. This may arise from one or two causes, or both combined, viz., from being grown in too rich or too great a quantity of soil, or through having been supplied too liberally with water without that adjunct which is necessary to almost all kinds of plant life, to wit, a resting period. If I had to treat a plant that had given trouble in this direction, and it were in a pot or in any other way restricted at the roots, I should, after a good growth had been made, keep it quite dry, not fearing any evil consequences by so doing even at the expense of losing the larger portion of the foliage. In addition, if the plant be in

a pot so that it could be removed to a cooler temperature, that also would be an advantage. I had once a large specimen in a pot that was intended for exhibition. Previous to my taking it in hand, it had made growth enough, but produced a very few flowers. This was caused by its having been kept all the season round in the stove without limitation as to watering. I placed the plant in a greenhouse where the minimum temperature in the winter ruled from 45° to 48° just where it stood, which was upon or over the flue, that being the mode of warming. That plant flowered well the following season after the cool and dry treatment to which it had been subjected. It lost nearly all of its leaves whilst in the cool, but that did not matter at all. It may be thought that this temperature was low enough; no doubt it was, and probably 50° as the lowest would have answered as well.

With a few plants in pots it becomes a fairly easy matter to have successional examples in good condition at stated periods. Even two plants in the same house if planted out may easily be made to flower at different times. This is altogether a question of management as regards pruning and resting to regulate the growth. To flower a plant in March and April, dependence must be placed upon a well-matured late summer or autumnal growth upon which the flower-trusses are in an embryo stage early in the winter. These trusses do not advance until extra warmth is given and as the days lengthen, then they will come away rapidly. Such a plant should not be allowed to flower after the end of June, when it should for a few weeks be kept dry at the roots. After this has been attained it should be pruned, and that in no half-hearted fashion if it has reached anything like its limits as to size. What is needed is a strong and clean growth, weakly shoots in larger quantities never flowering so profusely. In the spring, as soon as there is a sign of renewed activity, the terminals should not be allowed to start away so as to weaken the flower trusses behind them. If this be the case, they had better be stopped at once. In any case this is a good plan if extra early flowers are needed. As a succession to such a plant to take up the flowering in June and onwards, the pruning should be done in the spring before any great activity is to be seen. This, it should be stated, can be checked for a time by keeping it dry at the roots. By pruning into well-ripened wood, good sturdy back growths will be secured, which can hardly fail to flower in due course. Such a plant may be allowed to flower as long as it will into the autumn; it will then have a good resting period. I once had to do with a plant of *Stephanotis* that was planted out of doors and brought through under the sill of the door. This may cause some surprise, but it was nevertheless a fact. The explanation of its continued success for about twenty years was that the boiler was within a few feet of the roots. Although the soil at the surface would be frozen, no harm ever came to the plant, this being attributable to the roots striking downwards towards the warmth.

With two or three pot plants at command a good long season can be had, the first to flower being treated in a similar manner to those planted out for early blooming; the successional plant thereto being started in growth in the spring in like fashion, the later one still being retarded in a cooler house until May and June before it is really started, although with increased warmth, even in a cool house, it may try to grow somewhat. When pot plants of this kind are started into growth by being placed in

heat from a cool house, they will take from ten to twelve weeks to bring them into flower. The young shoots of pot plants should never be tied down to the trellis until the flower trusses are about to expand, otherwise lateral growths will be encouraged and the flower trusses upon the older wood often turn blind. These shoots, on the other hand, should be supported towards the light in an upward direction until well advanced in colour. When in growth the *Stephanotis* will always take water freely provided the plants be in good condition at the roots, and occasional doses of liquid manure will largely assist them at the flowering stage or when pot-bound. Cuttings can be struck at almost any time, but I would prefer to take them about now, selecting short, stocky shoots that have not yet commenced to run away. As to soil, I do not consider the *Stephanotis* at all particular; it will thrive in peat, or peat and loam, or in leaf soil and loam. Firm potting is certainly desirable, as it is not necessary to be turning the plants out and reducing the balls every year. With respect to varieties, I am doubtful if there be but one, still when given exactly the same treatment in every way for all so-called varieties, it is easy enough to flower them in small pots and call them improved forms; this is only an expeditious mode of culture, the result of care and attention from the striking to the flowering. Those with small flowers and those with larger ones and trusses in proportion are not due to variety, but culture.

GROWER.

Three fine-leaved Begonias worth growing freely, and which we noted in the nursery of Mr. H. B. May a few days ago, are *B. Greigi*, *B. Souvenir d'un Ami*, and *B. Arthur Malet*. The first of the three has dark purple-coloured leaves and pink flowers, a rich contrast, and the plant makes strong growth. The variety *Souvenir d'un Ami* is a Continental acquisition, and is a handsome plant. The leaves are bronze-purple in colour, very rich, with greyish veins, and covered with crimson hairs, that impart a dowdy appearance, whilst the flowers are pinkish in colour. One of the most distinct and attractive of all the fine-leaved Begonias is *Arthur Malet*, which is now grown largely in gardens. It has very handsome leaves, quite of a rosy colour, set off with a silvery tone, and the veins are green. This class is of much value in gardens, not difficult to grow, and whether in or out of flower, they are always handsome through the fine colour of the leaves. The silvery and crimson-purple colours are seen in perfection in this type of Begonia.

***Ficus elastica variegata*.**—The finest houseful of this plant we have ever seen is in the nursery of Mr. H. B. May, Upper Edmonton. A long structure is filled with the best species, well grown, and finely variegated, the leaves richly coloured with green and yellow. One gets a wrong impression of the variegated *Ficus* from the examples in ordinary gardens, which are too often very poorly variegated, the leaves blotchy and not strong in colour. When the colour is decided and bright, and the plants thoroughly well grown, as may be seen here, few things are more attractive than this variety of *Ficus elastica*. Many houses are filled with the type, which is one of the best market plants in cultivation, and the immense number grown here is evidence of its popularity. We noticed also the variegated variety of another good house plant, *Cyperus alternifolius variegatus*, which is nearly white, but we do not care for this so well as the type.

Tree Carnations at Edmonton.—Carnations are grown largely and well in the nursery of Mr. H. B. May at Upper Edmonton. When there recently we made note of one variety in particular named *Duke of York*, a superb acquisition to the tree section. The flowers are sweetly scented,

like those of the old *Clove* in colour—a full rich crimson—and the petals are remarkably broad and robust. *Winter Cheer* is largely cultivated. It is very free-blooming, each of the strong, compact, vigorous plants carrying a profusion of brilliant scarlet flowers individually of full form. This is one unquestionably the best of the Tree Carnations in its line of colour, and, although comparatively new, has quickly become popular.

Combretum purpureum is an old and well-known plant by name, but it is not often one finds a good example in gardens. The flowers are brilliant scarlet in colour and produced in wreaths, so to speak, and these sprays of bloom are delightful when cut for choice decorations. A fine plant is in one of the many houses in Mr. May's nursery at Edmonton, and has provided a quantity of bloom for cutting. Such a species is well adapted for rambling over the rafters in a warm house, and should be more seen in gardens. Many fine stove plants appear neglected partly through the extensive culture of Orchids.

Podophyllum pleianthum is in bloom in one of the borders of the temperate house at Kew. Even when not in flower it possesses distinct character and beauty. The leaves are broad, peltate in shape, and marbled with shades of green, each borne on a sturdy foot-stalk, making a fine mass of bold foliage. If the flowers are not very attractive, they are interesting and borne in threes from the axils of the leaves, as in the well-known *May Apple*, *P. peltatum*. They are pendent, like those of a *Tulip* in shape and intense chocolate in colour.

***Cochlostema Jacobianum*.**—This is one of the most distinct stove flowering plants that we have, but from the wide spread of its foliage it needs a good-sized structure for its full development. When out of flower the general aspect of the plant recalls a large growing *Bromeliad*, the leaves being arranged in a vaseform manner, and as the largest leaves are about a yard in length the spread of the foliage is considerable. The flowers are borne on spikes produced from the base of the leaves, thus forming another very distinct feature. The colour of the blossoms is a very pleasing shade of blue. It remains some considerable time in bloom. This *Cochlostema* was introduced from Ecuador by M. Linden, of Brussels, in 1867. It will succeed under the treatment usually given to the general run of stove plants, that is, potted in a mixture of loam, peat, and sand, and freely watered and syringed during the growing season. It needs a structure shaded from the summer's sun. This *Cochlostema* belongs to the order *Commelinaceae*, which is rich in flowers of a blue colour, among others being the beautiful hardy or half-hardy *Commelina coelestis*, which in the open ground yields a great wealth of blossom during the summer months.—H. P.

NOTES ON CANNAS.

WHEN the large-flowered race of *Cannas* was first grown in this country, the principal display of bloom was towards the end of the summer and early in the autumn, but of late they are by many cultivators induced to flower much earlier in the year; in fact, their showy blossoms may be had at nearly all seasons if the plants are grown on in a successional manner. Of the thirteen varieties belonging to this class that have received awards at the hands of the floral committee of the Royal Horticultural Society no less than seven were so honoured in 1888, the first year in which they were generally grown. These seven were shown during the months of August, September, and October, while last year an award of merit was bestowed upon one, *Alphonse Bouvier*, on January 12, and during the present season the variety *Progression* received the same award on April 11, while a fortnight later a group of beautiful examples of different varieties was shown. This large-flowering race of *Cannas* may be said to have been created by M. Crozy aîné, of Lyons, who, following out a course of persistent selection, has

attained such wonderful results. All the varieties that have received awards from our Horticultural Society have, I believe, been raised by that gentleman with the exception of *Star* of 1891, which is, I think, of American origin. Very few, if any, classes of plants have been in so much demand within the last few years as these *Cannas*, and they are consequently largely grown by many of our nurserymen. There is now a very long list of varieties; in fact, I see that M. Crozy in his newly issued catalogue announces 172 sorts, of which eighteen are included under the head of new varieties for 1893. It is very evident that many of these must so closely resemble each other as to be almost indistinguishable, so that a selection will in most cases be necessary, and on this point it is as well to bear in mind that some of the oldest, and therefore the cheapest, are very beautiful. Under the head of extra varieties M. Crozy especially announces four kinds, viz., *Alphonse Bouvier*, bright poppy-red; *Mme. Crozy*, scarlet, edged gold; *Progression*, golden-yellow, spotted maroon; and *Sophie Buchner*, bright vermillion. I have only seen the first three, which are certainly very beautiful, and on which awards of merit have at different times been bestowed by the Royal Horticultural Society, but the fourth—*Sophie Buchner*—is very highly spoken of, and the price (15s. each) would indicate that it was a very superior variety. These *Cannas* are principally grown in this country as pot plants, for our summers are as a rule not warm enough for the development of their showy blossoms, but in more southern climes they yield a gorgeous display planted out in the open ground; while Mr. Goldring speaks very highly of the brilliant effect produced by them at Baroda. The different varieties are increased by division of the rhizome, but seedlings raised from the best forms will be sure to yield some good varieties, and even if none are superior to their parents, there is at all events in their care before they flower the pleasures of anticipation.

H. P.

GARDEN FLORA.

PLATE 910. SMILACINAS.

(WITH A COLOURED PLATE OF *S. (TOVARIA)*
OLERACEA.*)

OF the eighteen or twenty species of this genus known, only three, so far as I know, have as yet been brought into cultivation. They are easily managed plants if not disturbed too often, and the North American species especially will be found extremely useful for mixed herbaceous borders. They produce a wealth of rich green foliage and white feathery flower-heads, a welcome addition in May and June. *S. racemosa* and *S. stellata* ripen seed freely, but I have never seen home-grown seed of *S. oleracea*.

S. OLERACEA is a native of temperate Sikkim, and has been in cultivation for many years in the herbaceous grounds at Kew. It has the reputation of being difficult to manage, and this may be the case where the plants are disturbed periodically. It may also in a way be accounted for by the fact of its being a slow grower, slow to increase, and a shy seeder. I have never seen ripe seeds unless amongst collections from India. As may be seen from the accompanying coloured plate, it is by far the most striking of the few species of this genus in cultivation, and in the south at any rate it will be found perfectly hardy, succeeding best in a rich peaty soil with a northern or north-western exposure. It was gathered first by Griffith in 1849, and although it may not have been lost to cultiva-

* Drawn for THE GARDEN by Champion Jones in the Royal Gardens, Kew. Lithographed and printed by Guillaume Severeys.



Camellia japonica

tion since that time, it is yet a rare plant, and one well worth the attention of growers of shade-loving plants. It is called Chokli-bi by the natives of Sikkim, where the young flower-heads, sheathed in their tender green covering, form an excellent vegetable. It flowers during the summer months and makes a very effective group.

S. RACEMOSA and S. STELLATA are almost too well known to require detailed notice; both are natives of North America, both white flowered and perfectly hardy. They may be cultivated with ease in the mixed flower border, where in May and June they are very attractive. D. DEWAR.

Glasgow.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

RADISHES.—The weather is anything but favourable for the production of crisp and tender Radishes, and unless extra precautions are taken in preparing suitable soil, and also keeping the roots duly supplied with moisture, the quality will be poor in the extreme. Nor must the site be in an exposed position. The best site for summer is on an east border, this being partially shaded from the midday and afternoon sun. The soil must be rich and sandy, but not overcharged with rank manure. The preparation of a suitable root-run is half the battle, this tending to a rapid growth. As regards the application of water, this, although it need not be of daily application, must be given as often as necessary so as to keep a moist surface. For summer use the French Breakfast is a capital kind, but for coming quickly to a usable size Ne Plus Ultra is the earliest I have tried.

THINNING YOUNG CROPS.—Considering that this is an early season, the young crops which need thinning, excepting perhaps Onions, are not so very forward, the dry weather being answerable for this. Nor is dry weather the most suitable that can be selected for thinning, as the young plants do not draw very freely. Where crops, however, need thinning this must be attended to whatever the weather, or else they will become so strongly rooted that those which are to be left behind for the crop will have their root-hold weakened. The exception to early thinning is where failures occur through the ravages of the Onion and Carrot grub. In this case it must be gradual, not taking out too many for fear of a failure. In thinning draw out the surplus singly, as then the remainder will not become disturbed. With the exception of Onions, this will be a bad season for transplanting where the rows are gappy, as it is well known that such subjects as Parsnips and Beet transplant badly except in moist and showery weather. After thinning, the Dutch hoe should be run lightly over the ground to settle the soil and stimulate growth.

PREVENTION OF ONION AND CARROT GRUB.—These pests often cause wholesale destruction, but are more prevalent on dry soils than on heavy land, and I am afraid the present season will prove no exception, the soil being all in favour of a severer attack than usual. It is of little use now to talk of what preventive measures ought to have been taken in the autumn or spring previous to seed-sowing. All that can be done now is to make the plants distasteful to the flies, so as to prevent them depositing their eggs. Scot dusted frequently over and amongst the plants is a good antidote, and there need not be any fear in using it. Well-diluted paraffin oil, or rather petroleum, syringed lightly over the whole bed may also be tried with advantage; so also may a little guano sprinkled between the rows, as it is the smell which drives the fly away. Onions may have the base of the stems lightly earthed up, but, of course, not to bury them too deeply. Directly any plant is seen to be affected, carefully dig it up and burn it, as such may have the effect of destroying some future colony.

MULCHING AND WATERING PEAS.—During this phenomenal season of drought an exertion will have to be made to sustain growth, or this impor-

tant crop, if it does not really fail altogether, will be much behind the usual standard. Much may be done by mulching, and anything which will assist in keeping the surface cool should be used, the line being drawn at weedy rubbish. Give thorough bi-weekly soakings in preference to daily dribbles. Liquid manure or sewage should also be applied where at hand. Instead, however, of pouring this on to hot and dry soil, first pave the way by a thorough soaking of clear water, when a little liquid manure will go a long way, and with the certainty of the roots deriving full benefit. Where the rows are well mulched, one good weekly soaking will be sufficient. A. YOUNG.

ORCHIDS.

LAST week allusion was made to the careful attention required in watering at this season, and that attention must still be continued for some time to come. I am thankful to say that although we have had no rain since the early days of March, there is still a good supply in the tanks. The drying winds in the course of the day very speedily dry up the surface of the compost of such things as Cattleyas and Lælias. If the plants are of large size, this does not matter, as the body of the compost retains the moisture for two or three days; but in the case of very small plants the compost is not sufficient to retain the moisture longer than a day. The atmospherical conditions also require to be kept under control. There may be too much moisture as well as too little in all the houses, and as a general rule it is a good plan to allow the paths and stages to dry up a little for a few hours at noon, and I have, after some experience, come to the conclusion that it is better not to damp down after the house is shut up at 4 p.m., or near that time in the afternoon. One season I took the trouble to damp down the houses well between 7 and 8 p.m. in addition, and I am sure the growth of the plants was not so healthy as they were when this additional moisture was not supplied to them. Although the weather is remarkably dry and the sun shines brightly by day, it is still cold at night, and in such weather the side ventilators of the warmest house had better not be opened. The present is a suitable time to see to the repotting or rebasketing of such Orchids as *Phalenopsis grandiflora*, *P. amabilis*, *P. Schilleriana*, and other allied species and varieties, and it is needless to say that this work ought to be done in a very careful manner, disturbing the roots as little as possible. As long as the baskets are sound, it may be better to leave the plants in them, for it is impossible to remove them without destroying half the roots; but if the baskets are decayed, this danger does not exist to the same extent. The best freshly-gathered Sphagnum should be used; it ought to be well washed, and all extraneous matter should be picked out of it. Some persons use peat with the Sphagnum, but this has a tendency to decay by being kept continually moist, and I think it is better left out. A good sprinkling of clean crocks should be mixed with the Sphagnum and a few pieces of charcoal, and I am not sure if charcoal had not better be left out. Some of the *Saccolabium* and *Aerides* may now be repotted, and *Angraecum sesquipedale*. We have a plant of the latter yet in flower. It is of the later flowering type, but we have never previously had them continue so late as the second week in May. We use for the above, Sphagnum and clean crocks only, and there ought not to be a very great depth of Sphagnum, as the under portion decays and causes the roots also to decay, leaving a portion only of those near the surface of the Sphagnum and the few outside of it altogether in good condition. Even under good management the lower leaves have a great tendency to decay, and the bare stems, being indications of bad culture, should be hid as far as possible by getting them deeper into the flower-pots. Fresh roots will soon push out both above the Moss and underneath the surface of it. Two inches or 3 inches is a sufficient depth of Moss and drainage, the greater depth for the larger plants. I ought

to remark that it is better not to disturb any plants of the above showing their flower-spikes, as the check which must take place necessarily deteriorates large or even small spikes of flowers in course of development, and unless the repotting is performed with great care, many of the lower leaves will be lost. It is very detrimental to the value of all the above to lose their lower leaves, but especially so to such things as *Phalenopsis*, &c.

As I am writing these remarks, part 116 of the "Orchid Album" has been brought in, and the first plate (461) is *Cattleya Mossiae Rineckiana*. It is rather curious that I was about remarking of this variety as being not so vigorous in growth as the type, and liable to exhaust itself if allowed to carry all its flowers until they fade naturally upon the plant. It is the object of Orchid growers in some instances to manage their plants so that the flowers are retained as long as possible, and this would not matter much in the case of the ordinary forms of *C. Mossiae* when a healthy plant can be purchased for a few shillings; on the other hand, when we have to deal with plants of much commercial value the health and vigour of the plant must be weighed against the longevity of the flowers. A grower should be able to tell by the look of a plant whether it is likely to be injured if the flowers are allowed to remain too long upon it. A vigorous plant with plenty of roots even of a delicate variety may not suffer, while one not so vigorous might suffer a good deal. I have known some who would destroy Orchid flowers in the early bud state to strengthen their plants, but this is seldom necessary and may sometimes be injurious. The life-work of even a moderately healthy plant is to produce flowers, and if not allowed to do this, it may resent the interference by making its growth out of season. I have observed that by allowing strong spikes to remain on plants of certain *Oncidiums* until the flowers fade and the pseudo-bulbs have become much shrunk, that it has taken so long for the plants to recover, that they have been six weeks and two months later in making up their growth. It is easy enough to get growths and flowers for a few years, that is, until the natural vigour of the plant stored up in the native pseudo-bulbs is exhausted, when decline sets in, and the art of the gardener is powerless to sustain them. As witness the very beautiful *Epidendrum bicornutum*, one of the most beautiful in this large genus, and not only so, but the flowers are also long-lasting, and yet, although the plant has been in cultivation some sixty years, I do not know any cultivator who has managed to grow it to any purpose after the first five or six years. It is a West Indian plant and needs warm house treatment, and as it grows on bare rocks and trees near the sea, it should do best in teak baskets suspended from the roof glass with *Phalenopsis*. The difficulty is, I think, to ascertain the right treatment during the resting period. Many other Orchids may be named of which none of us have yet mastered the culture, but every year something new is added to our stock of knowledge, and, speaking in general terms, the culture of Orchids is now much better understood than it was only a few years ago. The temperatures of the various divisions was given last week and need not be repeated. J. DOUGLAS.

PLANT HOUSES.

STOVE-FLOWERING PLANTS.—Those that from now onwards will be advancing into or showing for flower will be on the whole assisted by occasional doses of liquid manure water, bearing in mind the all-important fact that it is those plants which most frequently receive a change of soil in the potting that may safely be given the largest quantity. Allamandas, for instance, as soon as they are well set with flower-buds may have liberal doses, but not before, or the tendency will be still towards a woody growth, which in plants of full size is not at all desirable. We sometimes hear it said that such and such a plant is not a free-flowering variety. More often than not this is altogether a mistake, the fault lying more in the

management than anything else. Allamandas or any other stove plants (climbers more particularly) that are planted out have of course such a freedom of root action as not to need so much feeling as in the case of pit plants; they nevertheless will be largely benefited, using rather some artificial manure that will sustain them with less tendency to sour the soil. Vincas, shrubby Clerodendrons, and other fast-growing plants will one and all take water freely when once their pots are filled with roots and the flowering season begun. Neglect of this causes the plants to assume a pale, sickly appearance long before their time, being thereby protracted of a much shortened blooming period, which might be easily averted.

Young plants of any of the foregoing should not be allowed to flower whilst still of small size unless that be an essential object for particular purposes. It should rather be the aim of the cultivator to obtain a well-established plant first, the flowering period tending more towards exhaustion than anything else. The Vincas, for instance, if they be allowed to flower too early, will not continue to make additional shoots, the plants thus becoming leggy, and the same applies to the shrubby Clerodendrons, both being precocious flowerers if left to themselves. Dipladenias require to be very carefully dealt with as to watering, for more plants of this genus are killed eventually, after lingering out a miserable existence, by what might be thought by some to be only moderate supplies. It is never advisable to give these plants manure water of any kind that will tend to make the soil sour. The barest modicum of an artificial manure will suffice in any case, and this only at lengthened intervals. Ixoras, when in free growth, will take water freely provided they be not plunged; then watering becomes in a manner deceiving. Weak farmyard manure will suit them, but bone-meal or any preparation in which its chemical properties predominate will be found on the whole safer and more satisfactory to use.

Other plants of rapid succulent growth, as Achimenes, Gloriosa superba, Gloxinias, Cannas, &c., will all be safe with liberal supplies of water. The last named may not be altogether stove plants, but, nevertheless, they thrive in heat and moisture. Anthuriums also whilst developing flowering-spines freely will require liberal treatment. Those who grow the old-fashioned *Aschynanthuses* should keep them moist both at the roots and overhead. In any case the stock of *Eucharis*, when healthy and it is known that they are well rooted, should be dealt with liberally. Now dry at the roots and now over-watered is the cause of more harm than many are aware of. I do not by this mean to infer that the plants always require exactly the same treatment as to watering, for when a plant, for instance, is throwing up large numbers of spikes extra supplies must be beneficial, preventing thereby exhaustion. On the other hand, immediately the plants are out of flower a less quantity will only be a natural course to take. Those who on the whole pursue an equitable course as to watering obtain, no doubt, a more constant succession of spikes, if not in such large quantities at stated intervals. As soon as *Pancratiums* give signs of throwing up their flower-spikes more water should be given, and this will have to be maintained to carry them through the succeeding leaf growth. *Hymenocallis* are in a measure more continuous in flowering and growing, coming intermediate between the *Eucharis* and *Pancratium* in this respect.

Plants that have thus far been resting or have not required direct inducement to make any growth, as *Poinsettias*, *Euphorbia jacquiniiflora*, *Plumbagos* and other winter decorative subjects, must now have more attention bestowed upon them. *Poinsettias*, if not already placed in heat for cuttings, should not be any longer kept out of it, nor should the *Euphorbia*. The best cuttings from these subjects will be those taken from plants fully exposed to the light, being short-jointed and not too sappy and soft; these always strike the most satisfactorily. *Aphelandras*, winter-flowering *Begonias* and other plants of that season must now, one and

all, have reasonable attention bestowed upon them; otherwise, when their season comes round once more, good results cannot, as a matter of course, be expected. For dwarf plants the *Begonias* may still be struck, whilst the main stock of *Eranthemum pulchellum* should soon be propagated and for small plants later on. There should, as a matter of course, be more room now for giving these winter-flowering plants a good chance with the happy disappearance from under glass of all of the tender summer bedding plants for a time.

JAMES HUDSON.

FRUIT HOUSES.

RIPE AND RIPENING PEACHES.—Ripe fruit will soon be plentiful, the early American varieties ripening well in advance of the majority of home raised sorts. Syringing should be discontinued in the case of trees on which the fruits are nearly ripe, but those not so forward ought still to be freely syringed every morning and again when the house is closed somewhat early in the afternoon, the floors or borders being also frequently damped down as before, a fairly strong heat and moist atmosphere being favourable to the swelling of the later fruit to the full size. There is very little to be said in favour of the old-fashioned plan of suspending fish-netting under the trees for the purpose of catching any fruit that falls, the better plan being to keep the fruit closely gathered. Those that fall somewhat prematurely, or stay owing to over-cropping, are seldom fit to use as dessert fruit, but should be sent to the kitchen for making into pies. It will soon be seen which are sufficiently ripe to gather, and if the decision is arrived at by the softness of the fruit, test them by gently pressing the base only. They ought to part moderately freely from the trees, and should there be any necessity to drag them off, use a pad of cotton-wool to prevent the hand from bruising the easily damaged fruit. Any sent to the market ought not to be fully ripe or just fit for use when packed, as they may be expected to keep a few days, while if it is necessary to send fruit to a distance for private use before it is fully ripe, and this is no uncommon occurrence, then pack them and heavily surround with hot cotton-wool.

SUCCESSIONAL PEACHES AND NECTARINES.—Heavy crops are very general, but if fine fruit is desired and in some cases the health of the tree is sufficiently studied, thinning out will still be persevered with. As already intimated, the fruit from over-cropped trees frequently proves disappointing, much of it failing to ripen properly, and the attempt to mature such heavy crops also leads to a feeble wood growth in the case of all but the more vigorous young trees. Do not wait till the stoning is over, that is to say, till much of the mischief is done, before properly lightening the crops. It is the neglect of thinning out that frequently leads to many fruits dropping off during the stoning period. Instead of leaving the fruit not more than 3 inches apart all over the trees, it ought rather to be nearer 9 inches apart each way, another 3 inches being none too much if extra fine samples are desired. Trees that are growing very strongly may well be the most heavily cropped with a view to checking grossness and consequent unproductiveness, while those carrying good crops and only forming moderately strong shoots should never be allowed to become dry at the roots, liquid manure also being given freely. Not till the shoots are of good length and the wood fairly firm ought it to be closely laid in, and not more than will be wanted for thinly furnishing the trees with bearing wood next season should be reserved. In order to have the fruit richly coloured early expose it to all the light and sunshine possible. If this is delayed till colouring has already commenced, there is the risk of scalding to be faced. When thinning out the fruit, that best placed for colouring should be principally saved, and the leaves being tucked back from some, others being well laid up to the sunshine, the colouring may be perfect and the fruit improved in value accordingly. Nectarines being smooth-skinned are liable to be

scarred either by a too fierce sunshine, or, what is more often the case, by the syringing water hanging too long to the fruit. Especially is this the case with Lord Napier in unheated houses. Directly the first signs of this scarring (cracking following) are observed, cease to syringe overhead. If there is any red spider on the trees, ceasing to syringe will lead to the increase of this unless something is done to prevent it. Squeeze a handful of flour of sulphur through a muslin or scrim canvas bag into three gallons of water, and freely syringe the trees with this. The fruit can be wiped clean when gathered.

FIGS.—Abundance of strong sunshine suits these well. The trees not suffering from want of water or extreme poverty at the roots, the first crops will have swelled satisfactorily, strong yet very firm young growth having been made, and in the case of forced trees this will have already become clothed with a fruit at nearly every joint. Even the trees in unheated houses will in many instances be sufficiently forward to ripen two crops instead of only one, as in most seasons. In each and every case the young shoots ought to be freely thinned out, so as to enable those reserved to obtain the full benefit of all the sunshine, light and air going, soft immature wood being of little service. Also stop all the young shoots at the fifth or sixth leaf, this hastening the growth of the young fruit, fresh leaders forming in due course for fruiting next season. Trees, especially those with their roots confined to a comparatively small space, should have plenty of water, liquid manure, and a mulching of short manure. At present the Figs may be quite sound, but should dull, showery weather set in, some of them may develop a disease at the points, decay rapidly spreading all over the fruit. Where this is liable to take place, a drier atmosphere and more air must be admitted during the ripening period, a little heat being kept constantly in the hot-water pipes. Figs should be fully ripe when gathered, as they cannot be ripened properly off the trees.

MELONS IN FRAMES.—After pits and frames are cleared of Potatoes or are liberated otherwise, they are frequently turned to good account in Melon and Cucumber culture. As a rule, there is sufficient heat left in the old hotbeds to give the plants a good start, and all that is necessary is to clear the beds of rubbish and level over and to further place a good mound of fresh strong loam for Melons in the centre of each light. Give the surroundings enough water to well moisten the soil and then keep the lights close for two or three days, all then becoming well warmed through by the boxed-up sunshine. If plants are scarce, stop these and plant one in the centre of each light when they are breaking afresh. From these leading growths can be trained thinly in different directions, stopping these when near the outside of the frames or pits, and the fruit will then be freely produced by the laterals. There being enough plants, place three in each central mound and do not stop these till they have spread to near the outside. Always plant Melons rather firmly and keep the collars somewhat raised. Shade very lightly till the plants are rooting afresh, then discontinue shading. Ventilate rather sparingly, closing early and well moistening the soil on clear days. Mat over on cold nights.

PRACTICAL.

Notes from a Worcestershire garden.—The rockery built here in the autumn of 1890 is and has been singularly beautiful this spring, and its beauty is one more proof that the success of a rockery depends not on its size, but on the skill and science exercised in its construction. Though not more than 8 yards across in its widest part and of less depth than breadth, over fifty cartloads of loam and peat were used in its construction, and the depth of root-run varies from 8 feet to 2 feet. For six weeks, dating from the beginning of February to the middle of March, the principal features were grand groups of *Anemone blanda*, *Chionodoxa Luciae*, *Leucojum vernum*, and *Iris reticulata*; these were closely followed by *Anemone vernalis*, *Pulsatilla*, *Robinsoniana*, and apen-

nina. *Androsace carnea* and *sarmentosa*. *Soldanella alpina* all bloomed well this year, the latter's efflorescence being probably due to a covering of glass which protected it from November to February. *Primula nivalis* was perfect, as was *P. rosea*. *Trillium grandiflorum* has had about 150 perfect blooms, and is an immense plant; this and *Aquilegia alpina* have been the prominent features of the rockery during the past fortnight. *Lithospermum graminifolium* has grown well, and has four stout corymbs of buds which will soon expand. In fact, we have had only one failure, viz., *Gentiana verna*, which, however, in the case of the seedlings sown in the autumn of 1890 from fresh sown seed gathered at the foot of the Matterhorn, promises success in the future. All attempts to bloom regularly purchased plants have hitherto failed. Of course, during such a dry season as the present copious waterings have been necessary, but time and pains expended thus have been bounteously rewarded, and certainly the contrast between our little rockery and the more expensive and elaborate structure at Kew was in April remarkable and instructive. I have over thirty buds on a plant of *Dianthus glacialis*, and even *Anemone sulphurea*, which has for years expended its energies in growing instead of blooming, has this year given me several of its lovely blossoms. *Aquilegia alpina* well grown is a glorious flower; I have now scores of blossoms. *Ramondia pyrenaica* and its variety *alba* all promise well, and will be soon in full flower.—H. M., *Bromsgrove*.

ORCHIDS.

ORCHIDS AT THE WOODLANDS, STREATHAM.

On a recent visit I observed here as elsewhere the effects of the bright and hot weather we have experienced this spring in the early flowering of many of the species and varieties of Orchids. The only plant that appeared to flower at its proper time was *Odontoglossum citrosimum*, which was displaying many spikes, but the blooms not yet open. *Cattleyas* were magnificent, and in great variety. The first to attract attention by its numbers and by the delicious fragrance emitted by the numerous flowers was *C. Schrederae*. Some extra good forms are now to be seen. Here also was to be seen a quantity of the beautiful forms of *C. Mossiae* in great variety, and numbers of grand forms of *C. Mendeli*, which here are flowering grandly. There were also numbers of the ever-pleasing *C. Skinneri* and the variety *alba*, and also a form called *virginalis*, which is pure white, saving a very faint tinge of pale green on the disc of the lip. *C. granulosa*, a plant of not much value in an ordinary way, was here represented by several examples of a very fine and beautiful form. *C. intermedia* is a good old form and very elegant. The pure white-flowered form, too, is very beautiful, but it does not come up to the variety called *Parthenia* of Reichenbach; its blooms are larger and of more substance, and the sepals and petals broader. *C. Lawrenceana* also was giving a profusion of bloom, its lovely flowers standing out with great distinctness from all the others. Another form of *C. labiata*, *C. Warneri*, was also flowering freely, its dark sepals and petals and the large deeply coloured lip rendering it very conspicuous. Here also I saw for the first time the fine hybrid *C. luculenta*. I do not know both its parents, but I was told *C. superba* was one of them. The plant appears to be a good grower, and it throws up its flowers boldly and in goodly numbers together; the sepals and petals are nearly equal, spreading, thick and waxy in texture, white, suffused with a tinge of rose, and the front lobe of the lip rich crimson.

These with a fine lot of *C. citrina* with its large yellow flowers hanging overhead comprise the most of this genus. Amongst the *Laelias* in bloom I noted a number of the beautiful *L. purpurata*, both the dark and light forms. The grandest flower in the collection was *purpurata Williamsi*. It is a strong grower, and the flowers are very large and well shaped, the sepals and petals white, veined with rosy-purple and suffused with rose; the lip large, the whole of the front lobe deep crimson-magenta, saving the extreme point, where it is paler, but veined with the same colour; throat yellow, streaked with deep crimson. Besides these were to be seen many fine forms of the light-coloured *L. elegans*. The dark-flowered varieties were pushing up their growths and bid fair to be gay again in the autumn. Here, too, was to be seen in flower Mr. Norman Cookson's grand hybrid called *Laelio-Cattleya Phoebe*, a cross between *Cattleya Mossiae* and *Laelia cinnabarina*. The sepals and petals are of a bright Indian yellow and the lip of a deep and rich crimson. This is a colour we stand much in need of, and I hope to see it again when in better condition. In an adjoining house were several examples of the grand *Maxillaria Sanderi*. I have heard many complaints about this being a shy bloomer, but here are several plants full of their large and handsome blooms. One variety was quite distinct, having the front lobe of the lip pure yellow. Here also is a very small-bulbed *Cypripedium*, which has a tall spike of bloom in the way of *St. Legerianum*, the flowers being very bright. *Oncidium sessile*, of which several plants were blooming freely; *Odontoglossum hastilabium*, *Calanthe veratrifolia*, and a fine variety of *Oncidium phymatophilum*, with a very large spike of bloom, all helped to make a grand show. In the next house, which is warmer, there was a fine lot of *Cypripediums*. Amongst the choicest kinds was a plant in flower of the rare *C. Hyeumum*, which is of the purest white, veined with light green—a gem of the first water. *C. Mastersianum* is another plant rarely met with. It is not a showy kind, but remarkably distinct. Fine forms of *C. grande*, *C. Sedeni candidulum*, *C. eurylechus*, *C. regale* and many others were in evidence. In the same house were a large plant of *Epidendrum O'Brieni*, a Veitchian hybrid of great merit, with head of deep cherry-red flowers, fine plants of *Angraecum Sanderianum*, with very long spikes of pure white flowers, and a plant of *Vanda Parishii*. Of *Anguloa Ruckeri* several plants were in bloom, bearing seven flowers on each plant, the ground colour being very dark, whilst of *A. Clowesi* several were promising before long to enliven the scene with their large yellow flowers. In the cool houses there is quite a grand display of bloom, and never before have I seen so much flower at one time. In this department there is a lot of *Odontoglossum* crispum in various varieties, some highly spotted and others pure white; also some excellent forms of *O. Pescatorei* and some superb forms of *O. Ruckerianum* and *O. Andersonianum*, many of them deserving of a name to distinguish them. Here also are good forms of *O. polyxanthum*, *O. gloriosum*, *O. luteo-purpureum*, *O. cirrhosum*, *O. triumphans*, *O. Reichenheimi* and *O. Insleayi*, the last being quite out of season. *Oncidium lamelligerum* was good, and there was already a goodly number of fine flowers upon the *Miltonia vexillaria*.

WM. HUGH GOWER.

Odontoglossum citrosimum.—This is truly a magnificent plant when well grown. To see it in

its full beauty the spikes must be allowed to hang down. I shall not forget the noble effect this Orchid produced when Mr. Sander exhibited it at the opening of the Colonial Exhibition some few years since. Basket cultivation is undoubtedly the best for this Orchid to show off its full beauty, but it will not succeed with me in this way. After having been transferred to pots and grown on the stage of the *Cattleya* house, and on the shaded side, the plants commenced to improve at once.

—A. YOUNG.

Hardy Orchids at Tottenham.—When at the Hale Farm nursery of Mr. T. S. Ware a few days ago, we noticed in a cool, moist position an interesting collection of hardy *Lady's Slippers*, each species represented by many plants, all in fullest health and beauty. *C. arietinum* is a rare species, and it is seldom one sees a quantity of it as at Tottenham. It was introduced from Canada as far back as 1808, but the hardy *Cypripediums* are not everybody's plants. This is quite a gem, the leafy stems bearing a single flower, which is small, but delightfully coloured, the petals and sepals of a rich brown colour, and the lip white at the upper part, the base crimson. In a deep peaty soil this species and the following are quite at home. *C. spectabile* was not in bloom, but promises a fine display. This is a noble species when well grown, and no spot is more suitable for it than a shady recess in the rockery, where the soil is peaty and it gets shelter from cold winds and frosts. It may be associated with the *Trilliums* and similar things. *C. acule*, the stemless *Lady's Slipper*, an old introduction from North America, was in fine bloom. It was introduced in 1786, but is not common; the flowers are large, purple in colour, the bold lip of a paler shade, sometimes, but rarely white. It grows in its North American home in shady spots and boggy soil. *C. parviflorum* is in splendid bloom. It is a close ally of *C. pubescens*, and a bright beautiful flower, freely produced, with the sepals and longer twisted petals rich brown, the lip deep yellow, in rich contrast. A good clump of it makes an attractive display, and very charming also was *C. Calceolus*, the British *Lady's Slipper*. It is a charming species, the sepals and twisted petals deep brown in colour, and the lip yellow. The ovate leaves are of large size when the plant is in suitable soil and situation. *C. parviflorum* and *C. Calceolus* have been established for years on the small rockery and left quite undisturbed, growing into fine vigorous clumps. A point often overlooked is the sweet fragrance of the flowers. Those of *C. Calceolus* smell like Cowslips.

***Cattleya Mossiae Reineckiana*.**—This very choice variety of *C. Mossiae* has a flower between 7 inches and 8 inches across, the sepals and petals of the purest white; the large and beautifully frilled lip is also white, stained in front with lilac-mauve and in the throat with bright yellow. The plant figured in the "Orchid Album," t. 461, was grown by Mr. Cummings in the rich collection brought together by Mr. A. H. Smee at The Grange, Carshalton.

***Disa tripetaloides*.**—We are getting quite a lot of these small-flowered *Disas* into cultivation now. Most of them do well in a cool frame, so that they may be grown by anyone having that accommodation. This *Disa*, figured in the "Orchid Album," t. 462, grows about 1 foot or 18 inches high, and bears about fifteen or thirty flowers, each measuring about 1 inch across. They are soft creamy white, flushed with flesh colour, dotted with crimson. This also is from Mr. Smee's garden.

***Calanthe Oweniana*.**—A cross between *C. vestita* and *C. Veitchi*. It was raised by Mr. Williams and named after Mr. Owen, of Rotherham. It resembles *C. Veitchi* in its habit of growth; the flowers, however, are larger and of a deeper and richer colour, and they have an additional distinctive feature—the whole centre of the lip is clear white. It requires the same treatment as is usually given to this family of plants—*Orchid Album*, t. 464.

***Maxillaria Sanderiana*.**—This plant flowered first in this country with Baron Schuebler in 1885, but the plant figured in the "Orchid Album," t. 463,

flowered with Mr. Williams, of the Victoria and Paradise Nurseries, Upper Holloway. It is a grand flower, being large, thick and fleshy in texture, the sepals and petals white, stained at the base with dark chocolate and spotted with the same colour at the junction of the two colours; lip with a spreading front lobe, creamy white. It thrives best in the temperature of the Cattleya house.

Cypripedium Stonei.—"J. H." sends me a fine flower of this species, asking if it is not very much like the variety *platytanium*, to which I must say at once that it in no way resembles it. The petals are a trifle broader, perhaps, than in the typical plant, but if the sender could see his flower as I have it now side by side with that of *platytanium*, he would no longer doubt. The petals of *C. platytanium* are just upon an inch broad and heavily spotted with crimson; whilst it would take four of the petals of the flower sent put side by side to make up the width alone; the other parts of the flower are not very different from the typical species.—W. H. G.

FLOWER GARDEN.

THE ROCK GARDEN.

WATER IN THE ROCK GARDEN.—III.

(3) WATERFALLS.

IF our rock garden can be furnished with running water there will in most cases be no difficulty in providing an additional attraction in the shape of a waterfall. This can be made a very pleasing feature even if the water supply is scanty, but if a more plentiful supply can be had, at least occasionally, it will certainly impart a bolder character to the work. Height is very desirable in a waterfall, but I think it is a mistake (often made) to introduce the water as flowing from high rocks without showing still higher rocks or groups of plants in the background from which the water appears to spring. The sides of a waterfall, too, should consist of bold masses of rock. Without these precautions the fall would look unnatural, and the desire to attain as much height as possible would be too plainly evident. If a waterfall can be made to appear like the continuance of a spring and streamlet, such as described in the last chapter, so much the better. It will then appear most natural of all. I will now say a few words about the different kinds of waterfalls. It stands to reason that waterfalls can never be made after a certain model or pattern, but must, of course, vary considerably in shape or size according to the depth to which they fall or the volume of water at command. The three principal forms are—

- (1) The smooth unbroken fall.
- (2) The dripping waterfall.
- (3) The bold broken fall.

(1) THE SMOOTH UNBROKEN FALL.

Generally speaking, this is the worst form of falling water, especially if the water supply is a copious one. Not only is there something particularly stiff and monotonous about a smooth sheet of water as seen in an ordinary cascade, but the dull thud of a large body of water falling perhaps to a considerable depth has a disquieting rather than a pleasing sound, and can in no way compare with the pleasant murmur of a spring or the merry ripple of a streamlet dashing over rocks and boulders. As a rule, therefore, smooth waterfalls should be avoided altogether. There is an exception, however, to this rule, and that is when the water descends in front of an object which it might not only be desirable to see, but whose

beauty would be enhanced by being seen through a smooth transparent sheet of water clear as crystal. Such objects for instance are most dark recesses which would naturally emphasise the effect of the light reflecting surface of a smooth sheet of water, especially if this sheet is so thin that it resembles almost a pane of crystal glass through which the dark recess and also the mossy sides or fronds of graceful Ferns would be clearly visible. Not only small recesses, but also large caves, if sufficiently dark, will gain in effect by being seen through a fall of this kind, and the silvery reflection of the descending sheet will appear increased in brightness through being contrasted against a dark background. But if instead of being thin and transparent, the smooth sheet of water should be too thick to ensure transparency this effect would be altogether lost, and the fall would be anything but picturesque. Thinness and transparency must therefore be our first care when constructing a smooth waterfall, and I will here describe my plan of ensuring this.

Whether the fall is to be produced from a streamlet or direct from a water pipe it will in



Myosoton sordidum.

the first place be necessary to spread the water evenly before allowing it to form the fall. For this purpose it should be collected in a watertight receptacle, having a perfectly level opening of the width of the desired sheet of water. As this receptacle must be entirely hidden from view, it matters little whether it consists of a galvanised tank or a concreted basin, but as a matter of choice I prefer the latter, as it admits of greater irregularity of form and is more easily concealed. Of the greatest importance is the surface over which the water is to fall when emerging from the little reservoir referred to. If this surface should be rough or in the least uneven the fall could not form a smooth sheet, but would be divided. The smoother this surface is the wider can the water be spread, and the greater will be the thinness and consequently the transparency. My plan is to have a piece of glass embedded in the cement, which, if properly placed, will spread the water to an extraordinary extent, and this is a decided advantage if one has to make the most of a small supply. By conducting the water over a sheet of glass, I have frequently produced sheets of

falling water 6 feet to 8 feet deep and fully 4 feet in width from a pipe only $1\frac{1}{2}$ inches to 2 inches in diameter. The water-sheet, it is true, was only the thickness perhaps of a sheet of paper, but this was an advantage rather than otherwise, as the interior of a picturesque cave could be seen through it to perfection. The piece of glass used in this case was 4 feet long and about 9 inches wide. This should, of course, be fixed perfectly level in a transverse direction, but should be slightly sloping in the direction in which the water flows. This arrangement will cause the fall to describe a gentle curve, but if the glass were fixed level in a longitudinal as well as in a transverse direction, the water would fall down straight and appear less natural.

That all such artificial work must be unavoidably stiff and ugly in appearance is only too true, but it should, of course, be entirely concealed by stones or plants. If the position is such that stones could not well be employed to hide the commencement of the fall, the glass and other arrangements might be effectually concealed by stretching wires across at some little distance from the glass and fastening to them Ivy or some other evergreen creeper, whose pendent shoots would not only completely mask the artificial work, but give an additional graceful effect by hanging down in front of the cave or other dark recess. Such creepers, however, must be kept duly under control, and should never be allowed access to the select part of the rock garden prepared for choice alpine.

(2) THE DRIPPING WATERFALL.

This in many cases will be only a modification of the smooth unbroken fall, and the latter kind might easily be transformed into a dripping fall by reducing the water supply. By this means we may have a dripping waterfall and a smooth fall combined, changing to either by merely regulating the valve or tap. There are cases, however, when a dripping fall only may be desirable, and these I will now consider. I suggested that a smooth transparent fall should descend only in front of a somewhat darkened recess or cave, and in the case of a dripping fall this is still more important. Every drop of falling water should be clearly visible, and this will be impossible unless the background is darkened. The glass arrangement just mentioned will not be required when the fall is to be a dripping one only, unless the water supply should be exceptionally small. In most cases the dripping can be produced by letting the water collect in a small basin and allow the overflow of this to drop naturally over an irregular and picturesque arrangement of rocks. When the work is of very limited extent and when it is desirable to introduce a dripping fall direct from a water-pipe without any streamlet or other visible influx, an ordinary lead pipe which has been perforated and the end of which has been closed might answer the purpose. But in this case the water should not be allowed to drop straight from the pipe, as this would appear too regular and unnatural, but the fall should be interrupted and broken by stones to cause greater irregularity. This might be effected by the stones used for hiding the lead pipe if the perforations in the latter are made not in a downward direction, but sideways or upwards, so that little jets of water would first be thrown against the stones and then be allowed to drop naturally.

A very pretty effect may be produced from a dripping fall in front of a cave for Killarney or other Filmy Ferns by letting the water drop into

shallow pools with gravelly bottom, and so arranged that the rebounding drops would send a very fine spray over the delicate fronds of Ferns or Moss. If allowed to fall on stones instead of water the splash would in most cases be too great for the safety of the plants. It is also of importance to take care that water used in this manner to moisten the fronds of Filmy Ferns should never be allowed to drop direct from a water-pipe, as it would be too cold, but it should first be conducted over a surface exposed to the action of air and sunshine and collected in an open pool among the rocks before being allowed to drop into the cave.

(3) THE BOLD BROKEN WATERFALL.

This, without doubt, is the boldest, and, on the whole, the most effective form of water in the rock garden; but to be seen to the best advantage, it would require a more abundant supply of water than the forms previously mentioned. If the supply should be a scanty one, the water would scarcely be visible from a little distance. We may distinguish two kinds of broken falls, viz., those dashing over bold and

falls should also show a number of irregular recesses caused by overhanging stones here and there. These recesses would, of course, be almost dark, and would show the falling water to greater advantage.

For the practical construction of a broken fall it is necessary to have a firm water-tight foundation, and cement concrete is indispensable. The rough outline of the steps referred to is best formed in the soil when making the necessary excavation, and then secured with cement work. As the latter is only to be considered a foundation for the more artistic work, it may be perfectly regular if that should make it more substantial, which must be the principal consideration. The shape matters little, as every inch would be hidden by rocks, which should be placed in a manner so natural, that the presence of the stiff and ugly cement work beneath would never be suspected.

Exeter.

F. W. MEYER.

(To be continued.)

English names for Irises—I think the most appropriate English name for the Irises of the



Alyssum montanum.

rugged rocks during the entire height of the fall, and those only partly broken or consisting of a broken and unbroken fall combined. When the height is not considerable, the entirely broken fall will be found the most effective. This should appear like a number of miniature falls of the greatest possible variety combined into one grand picture. If the rocks are granite or other unstratified kinds, we might take the natural falls of our moors and highlands for our models, arranging the stones so as to form a most irregular series of steps interspersed with loose rocks and roundish boulders of all sizes in the wildest profusion. But if the stone at disposal is of the stratified kind, it would be better to imitate horizontal strata without, however, approaching anything like regularity. Not only should the different layers vary in thickness, so as to produce steps of various sizes, but the ledges themselves might be broken up so as to admit of the greatest possible variety in the shape and size of the miniature falls, though in the main parallel strata may be adhered to. Broken

Oncocyclus group would be Cushion Irises. They differ from all the other Irises by having a soft diffused cushion of hairs in the centre and down the claw of the outer segments. I would call the different groups as follows:—

Apogon	...	Beardless Iris
Pogoniris	...	Bearded Iris
Xiphion	...	Balbous Iris
Evansia	...	Crested Iris
Oncocyclus	...	Cushion Iris

—J. G. BAKER.

Primulaceæ.—In spite of the hot dry spring and the fact that in many districts most of the Primulaceæ are over, there was a fairly good display of these at the Drill Hall on the 25th ult. Mr. Douglas had perhaps the best collection. Here *Primula Sieboldi* was exceedingly well shown in several forms, the rich magenta-red laciniata and bluish and pink varieties being excellent. *Primula japonica* was in much better form than usual, white, piebald or blotched, magenta, deep red, and other hues being found in the flowers. It would almost seem as if the warm spring had suited this once popular *Primula* very well. *P. obconica* was also very good, although there were

no specially fine forms of it shown. So far I have seen none better than Mr. J. Crook has at Forde Abbey, and it is a pity his long distance from London prevents plants of his fine selection being exhibited. Very good indeed was *P. sikimensis*, with its mealy foliage and pendent sulphur-yellow flowers. Perhaps even more pleasing was *Primula floribunda*, almost a perpetual bloomer, flowers bright yellow, a real beauty, but more suited for greenhouse culture. *P. rosea* was poorly represented; indeed, it was long past its best. The large collection of *P. Sieboldi* shown by Mr. T. S. Ware, less formally grouped than were the fine collections which Messrs. Ryder and Co. used to send up, served to show what a beautiful plant this is for greenhouse and window decoration in the spring. Some half-dozen of the best forms—white, pink, lavender, blue, red, and magenta-crimson, both smooth edged and laciniated—suffice for any garden, and a succession of their blooms may be had for fully three months. It is not at all difficult, so soon as the Chinese forms are over, to have *P. Sieboldi* in abundant bloom in any ordinary greenhouse.—A. D.

THE ALYSSUMS.

The Madworts, or Alyssums, constitute a large genus, numbering about ninety species, which have been at various times distributed over no fewer than ten genera. There are, perhaps, in cultivation at the present time not more than a dozen really useful kinds, and some of these, indeed, are so nearly allied, that half of them might be dispensed with altogether. There are a few annual species, but the majority are perennial shrubby or half-shrubby plants, procumbent in habit and for the most part evergreen. The flowers, though individually small, are produced in such dense clusters, and the latter in such numbers, as to render this class of plants quite indispensable in spring and early summer, both in the wild garden, on the rockery, and in the spring garden. They are of comparatively easy culture when properly situated. Propagation is effected by division and cuttings, the latter, in the case of the smaller section, being much the safer way. Division should only be resorted to in the case of such sorts as *A. saxatile*, that are required in quantity for spring bedding; indeed, so uncertain are plants of the *spinosum* and *argenteum* set, that it is always advisable to keep young plants of them on hand, old ones often dying off in a most unaccountable way. Others not mentioned in detail are *A. alpestre*, nearly allied to *montanum*; *spinosum*, in the way of *argenteum*; *Wierzebecki* and *olympicum*, &c.

A. ARGENTEUM.—This is a compact growing shrubby species, seldom more than a foot or so in height. It makes a charming little plant for a rockery, wedged in between boulders or on perpendicular parts, where, however, the roots can get a good depth of soil; the leaves, which are small, are silvery on the under side, the upper surface being dotted with silvery grey hairs. The flowers, which are produced in dense panicles, are of a fine deep yellow, and appear in April and May. It is found on exposed rocky places in Switzerland.

A. CALYCINUM.—This, like the above, is shrubby in habit and useful in similar places. The whole plant is pubescent, being covered with adpressed stellate hairs. It grows from 6 inches to 12 inches in height and branches from the base. The leaves are small, scattered and blunt-pointed. The flowers, which are small and yellow, are in short racemes, and pretty in masses. Though not indigenous to this country, it is often found in cultivated fields in Southern Europe.

A. MARITIMUM.—This is the Sweet Alyssum of gardens, and though perennial, it appears to be much more satisfactorily treated simply as a hardy annual. The flowers, which are small and white,

are by no means showy, and indeed only worth attention on account of their fragrance. It is a good plant for covering bare spaces, banks, or tops of unsightly walls, where it will sow itself from year to year. It is a native of Southern Europe, &c. It is often called *Koniga*, *Lobularia*, and *Glyce*.

A. MONTANUM, represented in the annexed cut, is perhaps the handsomest of dwarf-growing alpine *Alyssums*. It is shrubby or half-shrubby in habit; the stems are profusely branched from near the base and often tufted. It flowers freely about the end of April, its branches being covered with a profusion of large pretty yellow sweet-scented blossoms. It rarely produces seed under cultivation; therefore, the only means of propagating it is by cuttings, which, if taken off early, strike freely in a cold frame. It does best in exposed rocky places in free, well-drained soil, and should be planted where the ground in winter is not too moist. It makes a charming little pot plant for a cool house in early spring. It comes from the mountainous parts of Switzerland and Austria.

A. PODOLICUM.—This charming little plant is best known in gardens under its old name of *Schivereckia podolica*. It has small much-branched stems and grows only 3 inches or 4 inches high. Its leaves are hoary, and its small white flowers are produced in early summer in abundance. It is quite hardy and does well in a half-shady spot. It is a native of South Russia.

A. SAXATILE (Rock Madwort).—This (see cut) is well known to be one of the most valuable of spring flowers, and certainly one of the easiest to grow. It is used as a spring bedder in almost every garden in the country, and, in company with *Candytufts*, *Arabis*, and *Aubrietias*, it makes a grand display when few other flowers are open. This class of plant is in large demand for the wild garden, where in large masses it is most effective. We often see this plant in shady places, but in such situations it grows but indifferently. Like most other alpine, it requires a sunny exposed situation, the drier the better, and if properly placed it need not be removed for years. In heavy flat ground it is often severely cut during winter. In such localities it should be renewed annually by cuttings. If trimmed back after flowering in spring it will very often bloom again in the autumn. The variety *variegata*, though more beautiful in foliage, is not so fine as the type.

D.

Anthericum liliastrum majus.—This, the greater St. Bruno's Lily, is a really grand plant, especially when seen in a mass, as it is in this way that the large, pure white, Lily-like blossoms are most effective. True, the flowers do not remain in beauty very long, while this season, in common with most subjects, they are, owing to the drought, of shorter duration than usual. This *Anthericum* is not always met with in good condition, and in light dry soils it is not seen at its best. A good deep loam of a rather sandy nature seems to suit it well, and, in planting, especial care is necessary, for the stout brittle roots are arranged horizontally, and as they all radiate from one common centre and are at times nearly 1 foot long, it is evident that they will suffer a good deal if a small trench is taken out for the reception of the roots, as is often done. A good way is to take the entire soil out to a depth of 4 inches to 5 inches, stand the plants in position, as then the horizontal roots can be arranged in their regular manner without injury, and, finally, return the soil in its place. In days gone by this form of the St. Bruno's Lily used to make a grand display every year in the Wellington Nursery, St. John's Wood.—H. P.

Preparing soils for borders and rockeries.—To do this successfully something depends on environment and a deal more on the fact of what you intend to grow, but in any case fine weather or the summer-time is the best for such preparatory work as preparing soils. There should be no hurry, and all should be done thoroughly, especially when done in view of growing choice species

having special requirements. There are two distinct classes of cultivators of hardy flowers. One class is composed of those who will grow no plants but those they know more or less intimately, and the other class is notable for the desire to grow only something almost unknown or new to them at the time of planting. With such a difference in the personal choice of the planter, there must be due consideration for the varied requirements of the plants that may be brought together, and certainly it will not resolve itself into a mere question of soil alone, but largely as well of formation. There must be varied surfaces, levels, slopes and depressions; and when planting, positions will require selecting with as much care as the selection and preparation of soils. Take, for instance, two plants of the same genus. Though both *Polygonum sphærostachyum* and *Polygonum Brunonis* may be partial to damp vegetable soil, the former absolutely needs it, whilst the latter may be grown nearly anywhere. It therefore comes to the old point of a personal knowledge of the plants. One must not only "read and learn," but experiment and observe in the midst of the conditions that immediately surround. Often what will do with the most off-handed treatment in one garden may require a deal of coaxing in another garden varying but very little indeed, so far as one can learn from casual observation, so that to the plants there would be doubtless a very important difference of conditions somewhere. In my view, the creation of slopes and levels, &c., is as important to the life and well-being of a hardy perennial plant as the character of the soil itself, for we expect such plants, when once set, to take care of themselves for a reasonable time, and if due regard is not paid to a natural provision of moisture both in the soil and with regard to aspect as well, success may not follow on even the most elaborate preparations otherwise. J. WOOD, Woodville, Kirkstall.

Tropæolum Clibran's Gem.—For summer or winter flowering some of the climbing *Nasturtiums* are very satisfactory, and of them there are now several distinct varieties in cultivation. A very noticeable form is *Clibran's Gem*, the flowers of which are large and of a deep maroon—a most uncommon shade of colour. It is a free-growing climber and one worthy of association with such well-known varieties as *Fireball*, *Bismarck*, *Peter Rosenkranz* and *Hermine Grashoff*. A quarter of a century ago *Tropæolums* of this class were largely grown for winter blooming (their place being now taken by the zonal *Pelargonium*), and in those days a favourite variety for the purpose was one named *Mrs. Treadwell*. Many flower growers used to find this extremely useful during the dull days of winter.—H. P.

Tufted Pansies from Hawick.—I beg to send you herewith a few tufted Pansies from my collection. They have flowered in great profusion for some six or eight weeks, and are likely to continue, but the long-continued drought has very materially diminished their size individually.—JOHN FORBES, Hawick.

* * A rich gathering, containing all the newest varieties and several of the older sorts, which still hold their own as far as colour is concerned. We do not care for the spotty forms which are now being raised, and much prefer those of a decided shade, and which in the mass are always the most effective.—ED.

Tufted Pansies at Chiswick.—Two collections of Pansies are of note in the Royal Horticultural Society's gardens at Chiswick. One is from Messrs. Dobbie and Co., Rothesay, N.B., and the other from Dr. Stuart. The Pansies are planted in the beds by the central walk leading to the conservatory, and should prove interesting during the summer months. A few of much beauty we made note of included *Bullion*, the flowers of the brightest yellow, a free and in every way useful variety. A good deep colour is seen in *Acme*, the flowers rich velvety purple, an intense shade, whilst those of the variety *Mrs. Baxter* are also of a dark velvety purple shade, the upper portion of the top petals white. A richly coloured

and telling self kind is *Mrs. Charles Turner*, the flowers intense plum colour and the plant strong. It is interesting to note that some flowers are without rays. Those of *Bridesmaid* are of this class, the colour fine rose, passing to a deeper shade on the lower petals. A splendid colour is that of *Pytho*, the flowers rich velvety plum colour, almost black, the upper petals margined with an almost white tint—an effective contrast. *Marchioness of Tweeddale*, white; *Wonder*, soft yellow; *Souvenir*, lilac, the centre deep purple; and *Virginalis*, white, are all worth attention for the shape, freedom, and good habit of the plants. Such a variety as *Blue Cloud* is of rare beauty. The flowers are of fine form and have an almost white ground, the petals heavily edged with a blue shade. Very similar are *Holyrood* and *Archibald Cameron*, the flowers rich purple in colour with a brownish shade in the centre. *Gipsy Queen* is a lovely flower, white, the eye yellow, slightly rayed with lilac. *Neptune* is a fine kind, the flower deep purple in the centre, the upper petals of a paler shade. We shall make further notes on the tufted Pansies when the other kinds are in condition. Such collections as these are of much interest.

FLOWER GARDEN NOTES.

WITH the wind (April 29) still in a cold quarter and the glass dropping nightly to freezing point or even below it, there is not much prospect of getting out tender plants. All, however, may be in readiness for them, beds that have remained empty through the winter months may be broken down, others cleared of the spring stuff, slightly manured where this is necessary, and forked up. Fortunately, bedding out is by no means such a lengthy operation as one remembers in bygone years, but there are not as yet many places where this branch of gardening is altogether weeded out, and this week's "Flower Garden Notes" may not inappropriately deal with a few suggestions for some good summer beds. I may as well state at the outset that there is no intention of dealing with formal patterns; I have no liking for stiff, formal beds. If we must have our summer bedders, let us plant them in as natural a manner as possible, and not insist on elaborate designs for one bed or make another merely a succession of parallel lines. Edgings, whether narrow or broad, need never find a place in beds on turf; they are unnecessary, besides entailing a lot of extra labour to keep them within bounds, and if the lines of division are not kept perfectly clear, they are worse than useless. To start with beds of large size, *Petunias* make a brave show, and if seed was sown early and the seedlings pricked out into boxes, excellent plants will now be ready to hand. They should be lightly pegged for a start to cover the ground, and then allowed to ramble at will. Good dot plants for *Petunias* are variegated *Abutilons* for the strong growing, and *Fuchsia gracilis variegata* for the nana compacta section. One or two large beds may be devoted to *Verbenas* in special or mixed colours as may be most acceptable, and, as mentioned in a previous note, small pyramids can be formed at intervals by inserting a few twigs and bringing them together at top, doing for *Verbenas* in fact on a small scale what one does in a large way for Sweet Peas. The *Verbenas* will ramble over and cover the twigs, and the pyramids of colour will break the flatness of the bed; if dot plants are employed there is nothing better than *Grevillea robusta*. Other plants suitable for bold massing are *Violas*, *Ageratums*, and *Phlox Drummondii*, and large beds can be filled with one or the other of these, leaving occasional spaces for a few taller plants, such as *Fuchsia*, nicely grown pyramidal Ivy-leaved *Pelargoniums* or *Heliotropes*. I would strongly recommend that zonal *Pelargoniums* be planted in a similar way instead of oblong panels or rings, row within row, of different varieties. Select any one colour, plant the bed right out with it, and contrast with a few things of taller habit. White *Marguerites*, the white flowering *Tobacco*, or the white foliaged *Eucalypti* associate well with scarlet and pink

Pelargoniums. A very nice combination, simple, but effective, for a large bed can be made with clumps of variegated Ribbon Grass filled in with Jacoby, Raspail, or Amaranth zonals. Gold and silver-foliaged Pelargoniums are, perhaps, seen to the best advantage with alternate plants of a nicely contrasting colour. Nothing beats a good purple or mauve Viola, or a rich contrast, all in foliage, can be effected by substituting Del's Crimson Beet for the Violas. A bit of tall foliage, as *Acacia lophantha* or a few nicely-grown *Humeas*, may break the flat surface of the bed.

I suppose *Begonias*, used effectively, are the finest of all summer bedding plants. They may be used sparingly on a carpet of some very dwarf trailing plant for small, or associated in mass with taller subjects for larger beds. As an example of what may be done in this latter way for large circular beds—anything say from 12 feet in diameter may be useful—take about seven plants, from 4 feet to 5 feet in height and well furnished to the base, of *Rose of Castile* or *Abundance* *Fuchsias* and fill in respectively with a dark crimson or a light pink *Begonia*. The splendid mass of rich colour that one gets on such beds right away through the summer is almost indescribable. Material for small beds was commented on in a previous note. Other good things are *Phlox Drummondii*, *Sunrise*, *Cannell's dwarf Ageratum*, *Veronica incana*, and *Iresine Wallisi*. Here are four distinct colours that with dwarf compact *Pelargoniums* and *Violas* will be found admirably adapted to small beds. *Cuphea platycentra* is an old-fashioned plant of dwarf habit, that makes a very pretty bed and gives a change of colour. Raised beds are occasionally to be found in gardens planted, as a rule, with *Clematis*. They make a brave show when thoroughly well furnished, but are the reverse of ornamental if only a few straggling shoots are to be found here and there on the iron framework. Possibly the best summer plant for this purpose is the old *Canary Creeper*; it should be raised at planting time on a few *Pea sticks*, which are in their turn supported by a few benders. The improvised framework is quickly covered, and a splendid mass of colour well raised above the surrounding ground will hold its own right through the season. Mixed beds have come so prominently to the fore of late, that a word or two respecting them may be advisable. Those trying them for the first time may be warned to plant carefully, using good stuff (good beds cannot be made of all odds and ends left from other plantings) and to avoid undue crowding either in the number of plants or the varieties. Excellent material for mixed beds will be found in *Fuchsias* of good habit, erect or nearly erect-flowering *Begonias*, silvery *Centaureas*, *Heliotropes* and some of the delicately cut-leaved scented *Pelargoniums*.

Claremont.

E. BURRELL.

Tufted Pansies.—A recent note on these suggested the advisability of holding fast by pronounced colours for strictly bedding purposes, and the prolonged spell of dry weather causing so many of the mixed colours to run out has proved the value of the advice. Looking through a small break of *Blue Cloud* the other day, I was unable to find a single typical bloom; nearly all the flowers were a pale creamy white without a trace of the blue margin. "Shot-silk" varieties again, as *Illuminator*, and those showing a marked contrast in top and bottom petals, as *Vernon Lee*, are behaving in a most erratic manner and throwing flowers totally unlike those of the true character. Again, an inspection of a small collection of new varieties confirms the impression that many are too much alike, at any rate in such a season as this. If one were to pick a dozen blooms from such sorts as *Countess of Kintore*, *Evelyn*, *Neptune* and *Mrs. Grant*, and mix them together it would be no easy matter to sort them out again, and the same remark applies to many of the yellows. They are certainly not sufficiently distinct to warrant the trouble of keeping them separate if they are only to be used in a mass for producing a certain colour. Again,

in whites, *Countess of Hopetoun*, *Lady Dundonald* and *Lady Wharnclyffe* are, I admit, good flowers and may be included in collections where the object is to study individual flowers and particular points; but for a mass of white for bedding they are not to be compared to *White Swan*, possibly the very best bedding *Viola* (white) in cultivation.—E. BURRELL, *Claremont*.

ENGLISH FLORISTS' TULIPS AT LONG DITTON.

DURING the past few days a large and interesting collection of English florists' Tulips has been in bloom in the Long Ditton nurseries of Messrs. Barr and Son. Several beds have been planted with them, and it is safe to say that in no nursery in the British Isles has a more complete representation of this splendid type of Tulip been seen together. It is worth noting that never, perhaps, within the recollection of the oldest Tulip grower have the bulbs bloomed in perfection at the end of April, and, judging by the aspect of the flowers when we saw them on May 1, they would be past their best within a week. The brilliant summer sunshine of the latter end of March and April, uninterrupted by scarcely a passing shower, is sufficient to account for the early and ephemeral character of the flowers this year. It is Mr. Barr's wish to popularise these charming May flowers, which offer a delightful series of varied tones, quaintly distributed on the segments and arranged into various sections, according to the disposition of colour. They have fallen into the background, and perhaps their close identity with the show-board has in a manner frightened would-be growers under the mistaken notion that an exhibition flower is not of much account for the garden, but in the many kinds of old English florists' Tulips there is a wealth of beauty, a glorious series of colours, of many shades from the most refined to the brightest carmines and roses, and in every garden where space is devoted to bulbs some thought should be given to this section. They are in full beauty when the *Daffodils* have faded, and provide a delightful succession that carries on the season of flowers to the threshold of summer. Amateurs who take up the culture of the *Daffodil* may turn their attention also to the florists' Tulip. It gives an interesting result, is gay, and comes into bloom later. We should much wish to see a reaction occur in regard to this type of Tulip, and it is strange that such delightful flowers were permitted to become rare. Less showy than broad masses of the species and hybrids or the early Dutch varieties, it is true, but more interesting, and providing lessons for the men who think to ponder over. The Tulip enthusiasts of the present day are few in number, but they have sustained interest in the Tulip, and it has never disappeared wholly from English gardens. We want now to see their efforts rewarded, and a collection such as grown at Long Ditton, in the hope of making the Tulip popular in the truest sense, is the royal way to accomplish this worthy object. One cannot always visit private gardens, but here they may be seen in fullest beauty, showing how much has been lost to our borders by not making good use of the bulbs in the past. By cheapening the bulbs and lowering the price to enable the purchaser to grow a quantity without severe strain on the purse, their cultivation may be increased. It is important to remove the show from the minds of those who know only the flowers stuck, perhaps, in a bottle with a white label attached, as one cannot get much conception of the effect produced, when the flowers are reasonably treated. The long beds crowded with distinct flowers at Long Ditton were of marvellous beauty, and we hope that they will find their way from the few gardens in which they are now into a less restricted area.

It is interesting to know that there are five sections of florists' Tulips, four of them comprising the larger divisions and one a very small class known as *sels*. The breeders, *bizarres*, *byblœmens*, and *roses* are the types which we need only

deal with in the present instance. All are well represented at Long Ditton, from the breeders to the roses, and present an interesting study. The breeders are the seedling Tulips, and those who raise Tulips sow seed not from this class, but the broken, or, as they are called, rectified flowers broken from a previous breeder stage, and these rectified kinds may be either flamed or feathered, this denoting the distribution of colour on the segments. About five years elapse before a seedling Tulip blooms, and the result is usually a breeder flower, never assuming at once a rectified form. Exceptions, of course, occur, and one is the beautiful *byblœmen* named *Mrs. Jackson*, a superb flower for colour, and very finely represented at Long Ditton. It is a work of time to distinguish the several classes, and the novice is at first puzzled. But those who care nothing for distinctions need not trouble themselves with such delineations of the florist, and get merely flowers that will give an effect in the garden. The breeder Tulips may be classed whilst in this stage, and one may tell from the colour of the base of the flower to which section it may be allotted. Thus a flower with a yellow base will pass into a bizarre form, but if white, into a *byblœmen* or rose. As suggested by the name, the roses have the flowers enriched with shades of rose or scarlet; but the *byblœmen* type is distinguished by less bright shades, as mauve, purple and lilac. The rectified flowers are divided into distinct classes, feathered and flamed, and each section, *byblœmen*, *bizarre* and *rose*, has these two forms. Many of the flowers are of remarkable colour. The feathered class is characterised by the most charming feathered or pencilled edge, the colour beautifully laid on and kept free from the centre of the segments. The *bizarres* are strikingly rich, the ground colour of which is yellow, and splendid contrasts result; whilst in the rose we get tender shades, refined and pleasing. A flamed flower is distinguished by a flame of colour that gives life to the centre of the segments and joins the feathering. The finest types are those in which this flame of colour is decided and telling. Not a few of the breeder Tulips are very beautiful fine garden flowers, as may be seen at Long Ditton, and it is interesting to know that there is absolutely no golden rule to go by as to when the breeder will change its form and appear as a rectified flower. Twenty years will occasionally elapse before this remarkable revolution in the character of the flower will occur, and, as far as we know, this change must be left to Nature. There is no artificial means of hurrying on the change from one condition into another, and the breeders may change to beautiful rectified flowers or the reverse. A fine breeder Tulip will not necessarily transform itself into a fine rectified flower; whilst the rectified Tulip will assume a dwarf, less robust habit of growth.

One might write many columns upon this fascinating subject if space permitted, but sufficient has been written to give the novice some idea of the character of the florists' Tulips. The critical judge of this class has many rules to go by, and one of the most important is the character of the base colour, which should be pure if the flower is to be of the highest form. A few of the finest varieties we noticed at Long Ditton were as follows, and we may say that the collection is true to name, each type set out in distinct rows and each class kept by itself. The flamed *bizarres* make a brave show of colour, also the feathered type, especially *Lord Lilford*, *Masterpiece*, and *Sulphur*; whilst of the flamed roses, *Aglaia* was remarkably beautiful and largely represented; also *Alice*, *Heroine*, *Modesty*, and *Annie McGregor*. Amongst flamed roses, *Mabel* and *Triomphe Royale* were noticeable. These two sections are delightful for colouring, and then a large space is devoted to the *byblœmens*. *Bessie*, *King of the Universe*, *William Bantley*, and many others were in full beauty; and of the flamed class, *Adonis*, *Lord Denman*, and *Duchess of Sutherland* may be mentioned. The fine *byblœmen* *Mrs. Jackson* was in splendid character. This does not pretend to be a complete list of the varieties, as all the best and

most precious types amongst English florists' Tulips are in the collection, but a few have been pointed out as of special merit.

To enjoy florists' Tulips in perfect beauty they must be carefully grown, and from time to time appear notes in THE GARDEN from the leading cultivators on this important subject. It is, therefore, unnecessary to write about their treatment, but there are no great difficulties to be overcome. The Tulip of whatever class is essentially a garden flower, and the florists' type is as precious as the gaudy Dutch kinds or the splendid species and hybrids that colour the beds and borders in the month of May. We hope to see the bizarres, byblossoms, and roses restored to us in their fulness and become what they well deserve to be, popular garden flowers.

SHORT NOTES.—FLOWER.

The Thrift edgings brighten the Brompton gardens at Kew. It was a happy thought to use this bright-flowered edging, and the plants are now bursting into full bloom. This garden promises to become one of the most interesting features at Kew. It may be made gay with colour with the use of suitable things as a contrast to the waving foliage of the Brompton.

Brodiaea Howelli, one of the rarest of the *Brodiaea*s, was in bloom recently at Tottenham. It is very distinct and free, the flowers white, veined delicately with blue, and borne in crowded umbels. It is quite hardy, the first of the genus to bloom, and in every way a good border plant when grown in a clump or colony. The soil must be light and the position sunny for *Brodiaea*s.

Onosma alba rosea is a rare plant, but not so fine as *O. taurica*. It is worth a note, however, for its distinctness, and was in bloom a few days ago with Mr. Ware. The flowers open white, then turn to pink, the colour deepening at the margin of the segments, which are fringed; otherwise it resembles the better known species. The leaves are woolly, glaucous in colour, and the plant is of tufted habit. A dry sunny spot on the rockery is the place for it, and if not so showy as *O. taurica*, it is well worth growing in choice collections.

Iris Chamæiris.—This *Iris* and its varieties are very charming when grown in quantity, as in the Long Ditton nursery. When there recently they were in full bloom, the type making a carpet of rich violet flowers, but, unfortunately, like the *Daffodils*, they are quickly over through the brilliant sunshine of the past few weeks. The parent is an excellent *Iris* to mass together, the flowers deep in colour, and there are several varieties. A fine *Iris* in flower was the rare *I. Sieberi*, which is quite dwarf, but the flowers are large and rich purple in colour.

Ornithogalum arabicum.—My experience with this beautiful flower is somewhat similar to that of "J. R.," West Surrey (p. 315). In the autumn of 1888 I got a dozen bulbs and planted out six. These I never saw again. Six were potted and remained two years dormant. They were repotted in the autumn of 1890, and left on a shelf in a dry shed without water. In the spring they started and bloomed splendidly, the following year they did not grow, and were treated in the autumn as in 1890. Of five bulbs potted I see two have started. They made a lot of bulblets when they bloomed. —R. FRISLEY, *Wotton*.

The white *Antirrhinum*.—A beautiful flower is the white *Antirrhinum*. We noticed a quantity of it recently in pots in Mr. May's nursery at Edmorton, and for growing for the greenhouse early in the year it deserves mention. The plants were bushy and full of flower. It is not wise to grow the very bushy kinds thus—those dwarf compact kinds which one sees in gardens sometimes, a new race, conspicuous for dwarfness of habit. One loses all the charming freedom and grace of the *Antirrhinum* in these productions. The white variety reminds us that it makes a delightful bed, and some of the best effects we have seen have

been got by using this kind in a mass without associating with it crimson or any other colour. But here again it is not the very dwarf plants that should be used.

ROSE GARDEN.

ROSE NOTES.

THE prospects of an early season in the open have been considerably improved by the warmer weather lately experienced, especially at night. It only needs a genial shower or two for our Roses to look remarkably well. Teas and Noisettes upon seedling Briers are breaking very strongly, and already have a pretty effect on account of their handsome foliage. Maidens are breaking stronger than usual. All transplanted last winter are, however, looking far from satisfactory, the long spell of fine weather—from March 1 to the time of writing (May 4)—having been much against the free breaking into growth.

Princess of Wales, *Souvenir d'Elise*, A. K. Williams, *Horace Vernet* and *Gustave Piganeau*, with others of similarly weak constitutions, have needed more than one over-hauling and replenishing with plants from pots. It is very easy to secure one or two more than are needed of these rather delicate varieties at the time of purchasing. If these be potted up and stood in a sheltered position, with due attention as regards water, blanks can be made good now. Once established, they will thrive all right, and in unfavourable soils it is a good plan to treat them thus and transplant during April or May. Dwarf stocks, both of *Manetti* and seedling or cutting Briers, are all looking very dry. In many cases I fear a high percentage must die unless we soon get rain. It is not often necessary to water Rose stocks in the spring, but mine have needed it this year. Referring again to the practice of turning plants out of pots, those that have been forced under glass and given their first crop of bloom may also be used to advantage, and will be sure to do well now, throwing large quantities of bloom from midsummer onwards. A most important point when turning out pot Roses at this time of year is to afford them a thorough watering previously and again afterwards. It must be remembered that all of the roots are at present confined to a small space, and being forced to derive the whole of their supply from this, the moisture is quickly absorbed. Until they have started into the surrounding soil a free supply of water must be given. Nor must it be forgotten that under pot treatment all of the water passes through the soil occupied by roots; outside, however, much of it will escape them and be absorbed by the other soil. Should showery weather set in, or even on the advent of a thunder shower, a slight sprinkling of some artificial manure, like guano or nitrate of soda, &c., will often do an astonishing amount of good. It affords the plants a spurt into healthy growth. After applying such manures it is well if the surface can be slightly stirred and a little more soil drawn up towards the base of dwarfs. In the case of pegged-down Roses, this is impossible at the present time, but they will benefit from a slight impetus of this kind.

I would again point out the absolute necessity of an early war against insects if satisfactory results are to accrue. It is suicidal to wait even a couple of days after they appear. More than treble the work will be necessary and much harm be already done. One of those most needing early attention is the Rose meggot. This is not content with spoiling only one shoot, but often migrates to several before it changes into a chrysalis state. The two others that are difficult to eradicate are red spider and scale. These, with thrips, are very hard to clear off without injury to the plants, unless the remedies I have previously advised be applied early and efficiently. R.

Roses with scented leaves.—The hybrids from the Sweet Brier are deservedly welcomed

because they have the charming fragrance of foliage as well as flower. It may be that in the future many of our finer Roses will have the same delightful charm. One at least possesses it already in no small degree, that is *Gloire Lyonnaise*. Recently, when pegging down, as I always do, the 6-foot shoots it annually makes, I shortened the tips because several of the upper buds had broken and made young shoots nearly 6 inches in length. I found that they had a very perceptible and sweet scent, unlike that of the Sweet Brier, but equally as pleasing and refreshing. Having almost or quite lost the charm of scent even in the flowers of some modern Roses, we shall turn with special satisfaction to those that possess this the crowning charm in leaf as well as bloom. It has often been noted how the Sweet Brier fills the air with its odour after a shower, but through the long drought I have noticed frequently the scent of the Sweet Brier pervading the air and borne a long distance by a drying breeze. It should be plentifully planted in gardens, woods, and coverts.—H.

TREATMENT OF EARLY POT ROSES.

WHERE these were forced from October or November last, they will now be requiring a rest if they are to be of much service for similar forcing during the coming winter. Such plants will have produced their second crop of flowers, and it is not wise to force them any longer. Look over the plants carefully and remove all weak and superfluous wood. This will let in more air and light among the remainder, and materially assist in a full development of the same. It is far more necessary to secure well-matured wood upon plants intended for winter forcing than when they are only wanted for ordinary growing. I would not advise the withholding of water yet, but I would admit all the air possible upon a fine and fairly quiet day, at the same time still avoiding draughts as much as possible. The plants want looking over, standing the ripest of them together. In a batch of Roses there are certain to be some throwing stout, young growths in the way of suckers. To stop these would be injurious; therefore, make your plants into two batches. The ripest of these may be stood out of doors by the end of April or early in May, according to weather and locality. Do not stand them in a cold or draughty position, but one sheltered from north or north-east winds and fully exposed to the sun. If the pots are about three parts plunged, or some lawn mowings placed among them, they will not be so liable to dry up from the effects of wind and sun, two very trying agents when combined, as they have been during the past few days. My own plants have been turned out this week, but the situation is very sheltered, being surrounded by a high *Arbor-vitæ* hedge. Cool nights and mornings followed by hot and bright days will be as nearly as possible equivalent to autumn treatment for these Roses, and as they are in reality in the same stage of growth now as outdoor Roses will be at the end of the summer, such treatment is following Nature fairly close. In September they will be looked over again, the drainage made right, and if necessary some few of them will be repotted. They will be stood in the same position for a time, then pruned and introduced to a quite cool and close house or pit. By the early part of November new growth will be some 2 inches to 3 inches in length, and will then benefit from slight fire-heat, the plants blooming from Christmas onwards. If well matured and started very steadily, there is little fear of blind or disappointing growths, but unless these two essential points be attended to, the results cannot possibly be satisfactory. Roses do not need nearly so much attention to keep them clean and free from insect pests during this early forcing as when growing during the spring months. Do not let the foliage and wood be at all distressed by sun and air during the first week or so after removal to the open. They can be assisted by a free use of the syringe night and morning,

even up to 10 a.m. When once brought into the open air, cease to apply liquid manure, or the plants will continue to make young growth instead of filling out and maturing that already made. R.

SOCIETIES AND EXHIBITIONS.

GARDENING AND FORESTRY EXHIBITION.

MAY 13.

THIS exhibition, which is on the same lines as the International Horticultural Exhibition held at Earl's Court last year, was opened on Saturday last by His Royal Highness the Duke of York.

The grounds on Saturday were gay with flowers tastefully set out. Something yet remains to be done before the various things are in working order, and the several attractions should, if the weather is fine, bring together thousands of visitors from town and country. There were many interesting floral exhibits to be seen on the opening day, and the flower show was an additional feature of interest. Mr. Milner and Mr. H. Turner, who has the management of the horticultural department, are both to be congratulated upon their endeavours to make the exhibition this year worthy of its name. The view from the entrance presents much the same features as on the last occasion, and various firms have plant structures, &c., whilst the annexe is filled with Rhododendrons in full bloom from the nurseries of Messrs. Wm. Paul and Son, Waltham Cross, and Messrs. Lane and Son, Berkhamsted. A fine effect is the result of the bold grouping of well-marked varieties, and not a few of the specimens are of large size and in perfect beauty. On the left-hand side of the central building, leading from the entrance, is a grotto-like retreat arranged with Ferns. In the grounds the general features of the last exhibition have been preserved. There are changes, but not of great horticultural interest, and much remains yet to be done towards the forestry department. But exhibitions are seldom quite ready on the opening day, although on the present occasion there was little cause for fault-finding.

We may briefly refer to a few of the more important general or permanent exhibits. A large exhibit of lawn mowers came from Messrs. Ransomes, Sims, and Jefferies, Orwell Works, Ipswich, comprising examples of their well-known lawn mowers, which it is unnecessary to specify on the present occasion. Messrs. Mackenzie and Moncur, both house builders, Edinburgh, have a plant house built upon the most approved principles, and a fine example of their work. Messrs. S. Deards and Co., 21, Eldon Street, E.C., exhibit their "Little Samson" boiler, Mr. J. Bennett, horticultural builder, Ellington Road, Ramsgate, a plant house. A large collection of fancy and garden pots of all kinds comes from Mr. C. G. Warne, Weston-super-Mare. We shall refer again to these permanent exhibits when opportunity offers. The stand of Messrs. Sutton and Sons, Reading, is worth careful note. It is a show case of vegetable, flower, and farm seeds, also excellent models of vegetables, whilst the collection of natural Grasses is interesting. In the grounds one may see the Rhododendrons from Messrs. C. Lee and Son, Hammersmith, and a most interesting example of fruit culture for market and gardens from Messrs. Cheal and Sons, Crawley. This display is on the left hand side leaving the annexe, and the various methods of training fruit trees, espaliers, pyramids, &c., are shown with a miniature orchard and fruit plantation. The whole arrangement is very cleverly contrived, and should prove an interesting feature of the horticultural aspect of the show.

On Saturday the annexe and various other parts of the building were made gay with flowers, and not the least interesting events during the summer will be the flower shows, which should, as last year, bring together a large company of visitors. The competition on the opening day was not very

keen, but many beautiful things were shown, and miscellaneous groups occupied much space. We think, however, that it would be better to place smaller exhibits, as cut flowers, tufted Pansies, in a more confined area than the central building, where groups show to better advantage. The Tulips and allied subjects seem lost in such a large space. We will take first the competitive classes, and these were placed chiefly in a tent, not the building utilised on a former occasion.

The largest class was for twenty-five Roses, and we may praise highly the exhibit of Mr. Charles Turner, of Slough, which was made up of remarkably fine plants, some standards, others bushes, all well grown, fresh, and striking. It was one of the freshest groups that we have seen for some time, and would have stood well in a large competition. There were three competitors for nine stove and greenhouse plants, but they were not remarkable, although the first prize collection from Mr. J. F. Mould, Pewsey, Wilts, contained several creditable specimens. Mr. H. James, Castle Nursery, Norwood, was a good second. The twelve show or fancy Pelargoniums from Mr. C. Turner call for mention. He was the only competitor in this class, but the plants were thoroughly well grown and flowered, particularly the varieties Duke of Edinburgh, Magpie, Ellen Beck, Gold Mine, Delicatum, and other well-known kinds. Great interest centred upon the class for a group of miscellaneous fine-foliaged and flowering plants. The competition was practically between Messrs. B. S. Williams and Son, Upper Holloway, and Messrs. J. Laing and Sons, Forest Hill. There was a keen contest for first place, which was assigned to the Forest Hill firm for a meritorious group, splendidly set up, and containing an interesting collection of plants. Croton Reidi, an excellent type, was finely shown, the leaves yellow, broad, and the lower ones barred with red. Caladiums, Gloxinias, Anthuriums, Clivias, and many other things made up this group, in which we may mention Cattleyas in variety, while *Odontoglossum citrosum* was used to conspicuous advantage. The group from Messrs. B. S. Williams and Son was in every way excellent, the chief plant a remarkably fine example of *Cymbidium Lowianum*, besides a number of other rare and showy Orchids, well blended with fine-foliaged plants. These arrangements formed quite a feature of the show, and would have appeared more imposing if allowed greater space. Worthy of note also was the collection of eighteen Azaleas from Mr. C. Turner, the plants well flowered, even, fresh, and representing an interesting variety of kinds, amongst the more important being the rose-coloured *Comtesse de Flandre*, *Mme. de Cannart d'Hamale*, *Roi d'Hollande*, *Etendard de Flandre*, *Duc de Nassau*, *Charmer*, and *Flora*. The nine fine-foliaged plants which won Mr. H. James the first prize were moderate, the best examples being those of *Dasyllirion acrotrichum*, *Kentia Fosteriana*, and *Rhapis flabelliformis*.

Better grown than anything in the exhibition were the *Calceolarias* from the well-known grower, Mr. J. Ford, gardener to Sir Charles Pigott, Bart., Wexham Park, near Slough, who won easily the first place in the class for eighteen. They represented great variety in colour, the specimens compact, with dense heads of bloom, and dwarf. Meritorious were those from Mr. J. Mowbray, gardener to Major Legge, Slough, who was accorded second place. Mr. C. Turner had some good *Auriculas* and a creditable group of *Carnation Souvenir de la Malmaison*, which won him the premier place. This is a fine flower when boldly grouped and grown well. Messrs. B. S. Williams and Son were first for twelve *Amaryllises*, and, considering that the season is going past for this flower, the plants were creditable. The same firm occupied chief place in the class for twelve *Clivias*, but there is not great variety in the colours.

Several classes were set apart for cut flowers, and some very dainty arrangements were to be seen exhibited in the chief building. They looked out of place, however, amongst hothouse buildings and such things. The chief prize-takers were Messrs. Perkins and Sons, Coventry, the various

arrangements showing considerable taste. The principal flowers used were *Roses*, *Odontoglossum crispum*, *Dendrobium Jamesianum*, *Cattleyas* in variety, *Bouvardias*, &c., but the bouquets were too lumpy in our opinion. This is, of course, a matter of fashion, but the looser, simpler arrangements are the more artistic. This firm was to the front for a basket of flowers, but in the other classes in which they entered there was no competition. An interesting class was for three stands of flower and foliage suitable for dinner-table decoration, and the first prize was taken by Miss M. Foden, Hemel Hempstead, for a delicately arranged exhibit; Miss Hudson, Gunnersbury House Gardens Acton, being a very close second.

The miscellaneous classes were practically the most important features of the exhibition, but as they were much scattered there were no really bold effects. All the following received, according to the official list, extra prizes, and we may note them individually. The hardy Azaleas from Mr. Anthony Waterer, Knap Hill, Woking, made a blaze of colour in the tent, and only those who have seen the Knap Hill Azaleas can judge of the effect the shrubs create in the woodland. As we shall make notes upon the Azaleas of Mr. Waterer, it is unnecessary now to refer to them except to say that they are delightful in pots as here presented, the flowers varying in colour from white to the deepest crimson, and very useful for the enrichment of the greenhouse or conservatory. They are not sufficiently grown for this purpose. A very fine collection of cut hardy flowers was shown by Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, who showed the various things in good masses, the way to display their beauty to full advantage. *Primula Sieboldi* was charming, and one gets a considerable variety of colours in the flowers from white to crimson, whilst the mass of *Spiraea palmata* was also of note. The mass of the scarlet *Delphinium nudicaule* was remarkably noteworthy. Two panfuls of *Cypripedium pubescens* and *C. Calceolus* deserve mention, and such hardy Orchids as these are very effective thus grown in quantity. A first-class certificate was given to the *Carnation* of the Malmaison type named *Pride of Great Britain*. Nor must we omit mention of the group from Messrs. Collins and Gabriel, Waterloo Road. *Spiræas*—*S. astilboides* and *S. aruncus* in particular—were of interest, and also finely shown were *Saxifrages*, *Pyrethrums* in large bunches and variety, *Irises*, and *Aquilegia chrysantha* and *A. grandiflora alba*, the latter a dainty flower, large, and of the purest white. This is a really good garden plant. Messrs. Wm. Paul and Son, Waltham Cross, had a splendid group of *Roses*, plants and cut flowers also. This firm had a display both in the tent and in the annexe amongst the Rhododendrons, the latter group consisting largely of new varieties, such as the beautiful *Clio* and a new kind named *Duke of York*, which belongs to the China class. It is exceptionally free and the colour of the flowers decidedly pleasing, the centre rich rose carmine, a peculiarly bright and pleasing shade, the outer petals just touched with the same tint. Amongst Messrs. Paul's *Roses* of note were *Star of Waltham*, *Ernest Metz*, *Spenser*, a bold flower, bright in colour and of fine form, and the new Moss named *Zenobia*, which we have previously noted in our columns. Cut flowers of the leading varieties were represented, but want of space prevents further mention of them. A large display was made by Messrs. Barr and Son, Covent Garden, whose miscellaneous collection was of much merit, comprising a selection of flowers of bizarre, bybloemen, and breeder Tulips, of which there is a large and choice assortment at Long Ditton; whilst the *Pæonies*, *Irises*, and other flowers in season were noteworthy. The group occupied much space, and the several things were shown in quantity. The exhibit from Messrs. Cheal and Son was of much interest. It comprised hardy flowers of many kinds, noteworthy being a collection of tufted Pansies representing the chief varieties in cultivation, whilst the same firm had a large collection of fruit, which, considering the lateness of the season, was well preserved.

Near the entrance were several interesting groups, and amongst amateurs, Mr. Wythes, gardener to the Earl of Northumberland, Syon House, Brentford, showed well. A charming group of plants, comprising Orchids and other choice things, came from this exhibitor, also a splendid collection of fruit. Two exceedingly good baskets of Grapes were included, the varieties Black Hamburgh and Foster's Seedling, whilst a note may also be made of Amsden June Peach, Lord Napier Nectarine, a seedling Melon of rich promise, excellent fruits of Fig Brown Turkey, *Monstera deliciosa*, which is grown well at Syon, and the finest fruits of Strawberry Anguste Nicaise that we have seen. Mr. J. James, of Farnham Royal, Slough, had a group of his splendid *Calceolarias*, which represent this flower in perfection. The collection of *Gloxinias* and *Begonias* from Messrs. H. Cannell and Sons, Swanley, made a brilliant display, each thing shown being represented in perfection, and many varieties were exhibited. Want of space prevents mention of names. The brilliant blue-flowered *Leschenaultia biloba* major from Messrs. Balchin and Son, Brighton, was a relief to the other exhibits. The plants were well grown, and it does not require many to make a bright effect, the flowers telling in colour. The group of fine-foliaged and flowering plants from Messrs. Cutbush and Son, Highgate, was charming, and well displayed, and the same firm also showed a fine assortment of hardy plants in bloom. Mr. A. Smith, High Wycombe, exhibited a very choice collection of Pansies, representing the chief varieties in cultivation, and also Roses; whilst from Mr. T. A. Hester came twelve dishes of Apples, excellent for the season. We do not care, however, for Apples so late. They may look well, but the true flavour is gone. A bright group was that of Rose Crimson Rambler from Mr. Turner. It is a brilliant *Polyantha* flower, deep crimson in colour, large, remarkably free, and in every way one of the finest acquisitions of its kind of recent years. Messrs. R. Smith and Co., Worcester, had a charming group of Clematises in pots, a very interesting display, the plants well flowered. There are many tender colours in a good collection. Excelsior, Countess of Lovelace, double lilac; Blue Gem, and Sensation, deep lilac-purple, were the most noteworthy. A good collection of fruit came from Mr. J. Miller, gardener to Lord Foley, Ruxley Lodge, Esher.

Messrs. B. S. Williams had new plants of interest. *Laelia purpurata* Princess May is a delicately coloured variety, the flowers white, with a soft pencilling of rose in the lip, chocolate stripes running into the throat. *Odontoglossum crispum guttatum* is a finely spotted form, the flowers bold and well marked. *Amaryllis* Princess May is practically a white variety, the flowers remarkably well shaped, and green in the centre; whilst *Dracæna* Princess May is deep green, margined with intense red. *Coleus* Distinction, from Mr. J. A. Morris, Church Road, Acton, is a fine variety of deep and effective colour—an acceptable dark leaved kind which should become popular.

A full prize list is given in our advertising columns.

CRYSTAL PALACE.

MAY 11 AND 12.

No finer show than that held on the above dates has been seen for at least twenty years at this popular resort. The arrangements, too, were excellent, the plants being disposed in both annexes, no formal course being followed in any case, and but a small proportion of tabling employed. Being in a measure broken up, and thereby covering a larger amount of space, the exhibits could be viewed by the large company present without any discomfort. This is as it should be, tending thereby greatly to the enjoyment of the visitors. Had the show been held in marquees, as in the case of a good many societies, a vast amount of space would have been required; a large number might then consider it, and that rightly, a finer show than it appeared to be. There is no place in or around the metropolis

so well suited for horticultural exhibitions, unless it be the Botanic Gardens, Regent's Park, with the undulating grassy banks. These are an advantage certainly in grouping plants effectively, but at the Crystal Palace all of the surroundings are so much in accord with plants and flowers, as to make it a place at once unique for anything pertaining to horticulture. On this occasion the schedule was a specially attractive one, no less than fifty-four classes being provided for plants of various kinds and cut flowers. The Crystal Palace Company are to be highly congratulated upon the enterprise they have displayed in framing such a schedule, and they cannot, as far as the quality of the exhibits or the keen competition in most of the classes goes, have any cause for regret in the steps they have taken.

The following is a *résumé* of the chief features of the exhibition. The class in which the greatest amount of interest was taken was that for a group of Orchids arranged for effect. Three prizes in the aggregate amounting to £50 were offered, and three competing exhibits were staged. The schedule specified groups of Orchids arranged for effect with Palms, Ferns, and other foliage plants. Mr. J. Cypher, Queen's Road Nursery, Cheltenham, was placed first with a group most pleasingly arranged, without that uniformity which so detracts from a group of this kind. Of Palms, well-grown Kentias were the leading features, and of Ferns, *Adiantums* were mainly used, the Orchids consisting chiefly of *Laelia purpurata* in quantity, very fresh and effective; *Cattleya Mossiæ*, fine varieties; *Odontoglossum vexillarium* and *O. Alexandræ* being also very prominent; *Dendrobium Bensoniæ* and *D. Jamesianum*, *Oncidium Marshallianum*, other *Cattleyas*, as *C. Skinneri* and *C. citrina*, *Cypripedium Exul* and other varieties, with *Epidendrum radicans* and *E. O'Brienianum*, all being most effectively disposed. Messrs. B. S. Williams and Son were a close second with a larger quantity possibly of flower, but hardly so well put together. A very fine specimen of *Cymbidium Lowianum* was the central plant, but although fine, as it was, it rather detracted from than otherwise to the group as a whole. Of other Orchids, the *Vandas* were strongly represented. There was some discussion as to the relative positions of these two groups, but the awards were undoubtedly correct according to the wording of the schedule. These groups were arranged upon tabling set in a diamond shape. Orchids in the other classes were also good, the best twelve being those from Mr. W. Cobb's collection in the immediate vicinity of the Palace. These comprised very fresh and freely-flowered plants of *Oncidium ampliatum majus* (extra fine), *Cattleya Mossiæ* and *Odontoglossum Alexandræ*, both in splendid condition, *Cypripedium caudatum* and *Cymbidium Lowianum*, *Masdevallia Harryana* and *Odontoglossum citrosimum roseum*, each first-rate examples; *Maxillaria Sanderae* and *Odontoglossum polyxanthum* were smaller plants; and lastly, *Phalænopsis grandiflora* in excellent condition, making altogether, with two others, a capital group. Mr. James, West Norwood, followed with smaller plants on the whole. For six Orchids, Mr. Douglas, Great Gearies, Ilford, succeeded in beating Mr. Cobb, who, however, came in a good second. Mr. Douglas had a grand example of *Dendrobium Dalhousianum*, most profusely flowered, with *Cattleya Lawrenceana* and *D. Devonianum*, both in excellent condition. Mr. Douglas was also first with cut Orchids in a dozen and a half varieties, showing large bunches or trusses of each kind. Mr. Prewett, Swiss Nursery, Hammersmith, was a good second in this class, his best bunches being those of *Cymbidium Lowianum*, *Vanda teres* and *Cattleya gigas*, with *Lycaste aromatica*. These were set up in the usual cut-flower box; whereas Mr. Douglas had his in a bed of Maiden-hair Fern, which added to the effect.

Stove and greenhouse flowering plants were shown in the good old style by Mr. J. Cypher and Mr. Chapman, Hawkesyard Park, Rugeley, respectively in the open and the amateur classes. The former had grand plants of *Azalea Neptune*, *Pimelea decussata* and *P. Hendersoni*, *Erica Cavendishiana*,

Franciscea eximia, and *Anthurium Scherzerianum*, with smaller ones of Cypher's variety of the last-named with immense spathes, and of *Aphelexis purpurea grandiflora*. Mr. Chapman, as usual, staged splendid examples of culture—*Tetralochea ericæfolia*, *Aphelexis purpurea grandifolia*, *Statice profusa*, and *Anthurium Scherzerianum* all being in the best possible condition and profusely flowered. Mr. Mould was second in the open class. Mr. Offer, Handcross Park, Crawley, was second in the amateurs' class with medium-sized and healthy plants. The best collection of stove and greenhouse cut flowers was that of Mr. Finch, Queen's Road, Coventry, who was strong in *Ixoras*, *Cactus speciosissimus*, Orchids, &c. Mr. Gibson, Halstead Place, Sevenoaks, came a close second, being in fine form with *Franciscea confertifolia* and other good things.

Azaleas were much the finest from Mr. C. Turner, Royal Nurseries, Slough, who had immense bushes of *Roi d'Hollande*, *Duc de Nassau*, and *Etendard de Flandre*, all in profuse flower. Mr. Offer followed with smaller plants. Roses in pots, always an attractive feature, were staged in beautiful condition by those old antagonists, Messrs. Paul and Son and Mr. C. Turner, the former winning for eighteen plants in not less than twelve varieties, the best being *Innocente Pirola*, *Beauty of Waltham*, *La France*, Mrs. J. Laing, *Francois Levet*, *Marguerite Romaine*, and *Magna Charta*, all carrying splendid blooms. Mr. Turner, who followed closely, had Duke of Edinburgh, Mme. Lacharme, *Merveille de Lyon*, *Celine Forestier*, and *Marie Baumann* as his best plants. In the group of thirty plants, Messrs. Paul and Son were the only exhibitors, showing rather smaller plants, including, however, some standards as a variety. Mr. Rumsey, of Joyning's Nursery, Waltham Cross, was the only exhibitor in the class for Teas, whilst no exhibit was forthcoming in that for Hybrid Perpetuals.

Florists' flowers in the competing classes were represented by two capital exhibits of show and fancy *Pelargoniums* from Mr. Chas. Turner, to both of which first prizes were awarded, the plants dwarf and profusely flowered. Herbaceous *Calceolarias* were shown well by Mr. Gabriel, Elmstead, Streatham, taking the first prize.

Fine-foliaged plants were strongly shown in the many classes set apart for them. For nine of any kind, Mr. Offer was easily first with grandly grown examples of *Cycas circinalis* and *Zamia Altensteini*, *Croton Warreni*, *C. undulatus*, and *C. princeps*, with *Asparagus plumosus nanus*, the next best lot being that from Mr. Finch. In the smaller class the position of these exhibitors was exactly reversed, Mr. Finch staging here very fine *Croton angustifolius* and *C. mortfontainensis*, and of Palms, *Kentia Fosteriana*, Mr. Offer's collection being marred by a dull looking Aroid, not worth pot room. For *Crotons*, Mr. Offer was easily first for nine, with plants in his usual good style, *Cheloni*, *volutus*, *Nestor*, and *picturatus* being the finest of these. Mr. James was second with smaller plants. Mr. Howe, Park Hill, Streatham Common, was first for six plants. In Ferns, Mr. Offer occupied the same position as with *Crotons* in the large class, but he was hard pressed by Mr. Howe with smaller, but remarkably well-grown plants; the former was strong in tree kinds, having *Cibotium Scheidei*, *Alsophila australis*, and *Cyathea dealbata*, with *Davallia polyantha* and *D. Mooreana*, both fine; whilst the latter was strong with *Adiantum Williamsi*, *A. æmulum*, and *A. Weigandi*, with a finely grown *Gymnogramma schizophylla gloriosa* and another of *Goniophlebium subauriculatum*. In the smaller class Mr. Douglas was first with healthy plants of moderate size. For twelve *Dracænas*, Mr. Lambert, Elfin-dale Lodge, Herne Hill, was a good first with much the largest plants, the four best being *D. Lindeni*, *rubra*, *anerleyensis*, and *Wilsoni*. Mr. Offer was first for six plants. Mr. James and Messrs. Laing and Sons showed well in the larger class, the latter having several newer kinds. Messrs. Laing and Sons staged a grandly grown and choice selection of *Caladiums* of the best kinds, the colours being very bright and effective. Messrs. J. Peed

and Sons, West Norwood, were a very good second, having many fine plants, but smaller ones at the front of the group. These two groups made a fine display. For nine Palms, Messrs. B. S. Williams and Son were easily first with grand plants of Kentias and other useful sorts, as *Rhipis flabelliformis*, *Phoenix rupicola*, &c. Mr. Howe was first for six, with an immense plant of *Kentia Fosteriana* and a fine *Cocos Weddelliana*, with others, Mr. Finch and Mr. Offer following closely.

Of other miscellaneous classes, Messrs. B. S. Williams and Son were first with twelve plants of their fine strain of *Amaryllis*; Mr. Lane, Burntwood, Caterham Valley, first for twelve table plants, well grown and suitable for the purposes intended; Mr. McGregor, North House, Putney, and Mr. Portbury, Ripon House, Putney Heath, both pressing up closely to the first prize lot. Mr. Chas. Turner was the only exhibitor of *Auriculas*, and Messrs. Paul and Son of *Violas* in the competing classes. Mr. T. S. Ware was the only exhibitor of tuberous *Begonias* in the single and double classes, showing well-grown plants, to which a first prize was awarded in both cases. The groups of hardy herbaceous, bulbous and alpine plants made a splendid display of colour and caused a deal of attraction. Messrs. Collins Bros., Waterloo Road, S.E., were first with a large display, in all points good, with excellent variety. Mr. T. S. Ware was second, also showing well. In the miscellaneous group of plants, Messrs. J. Laing and Sons surpassed themselves, staging the best arranged and brightest lot of plants we have yet seen from Forest Hill. In this group they concentrated their strength in tuberous *Begonias* of the best kinds and in *Orchids* that are in season, as *Lælia purpurata*, *Odontoglossums Alexandræ* and *Pescatorei*, with *Anthurium Andreanum* and others of the large-spathed kinds, also several *Amaryllis*. Of the fine-foliaged plants, the finest features were the *Crotons*. Messrs. Peed and Son followed in this class with a group of good and well-grown plants, lacking the brightness of the first prize group. Messrs. Paul and Son were first for a collection of hardy flowers, including shrubs, arranged with foliage, showing in their usual well-known style.

The table decorations were not, taken altogether, quite of average merit. Most exhibitors, by aiming at extreme airiness of effect, fail to do justice to their flowers. The first prize for a dinner-table laid out for twelve persons went to Mr. Seale, of Sevenoaks. The materials were lightly and gracefully arranged, and consisted chiefly of branching flowers and sprays of light or tinted foliage. In the top of the centre-piece were long sprays of *Oncidium* and spikes of white *Gladiolus*. The only flowers in the vases were *Laburnum* and *Cypripediums*. Mrs. Walter Mole and Miss Mayhew exhibited tables both graceful and pretty, but both erring on the side of extreme lightness. In the class for three stands, Mr. W. Clark, of Balham, was first. His exhibits were light and well arranged up to a certain point, but lacked finish, and the colours were too much mixed. Mr. Seale was second here with a very different style of work, which was certainly more effective than the first prize lot. The chief fault was that the bases and tops were much too broad for the height of the stands. For a basket of flowers, Messrs. Perkins, of Coventry, were first with a very beautiful arrangement in a large boat-shaped basket. As usual, minute attention was paid to detail. The more solid flowers were varieties of *Cattleya*, *Lælia*, *Maréchal Niel* and *Niphetos* *Roses*. Long sprays of *Odontoglossum* were used with graceful effect and *Lily of the Valley* in abundance. Messrs. Harwood, of Balham, were second with a large round basket very tastefully arranged. An attractive and uncommon feature of this was the plentiful use of small *Caladium* leaves of various kinds. These and the coloured *Croton* leaves and stove flowers used produced a very rich combination. The third prize basket, exhibited by Mr. Thomas Horsman, is worthy of mention. It was a beautiful, though slightly over-loaded arrangement, chiefly of white flowers, the only colour being a pretty blue *Iris*. Messrs. Perkins were again first for button-holes and sprays. Their exhibits were

irreproachable both in style and make. All the foliage was exquisitely light. One spray was of white flowers, *Roses*, *Orchids*, *Bouvardia*, &c.; in a second, small yellow *Oncidiums* and *Roses* supplied colour; while in the third, orange-coloured *Lælia* flowers were skilfully blended with *Odontoglossums* and *Lily of the Valley*. The button-holes were of similar character. Mr. Thomas Horsman was second with carefully made, but stiff productions. Messrs. Perkins also headed the list in the class for three bouquets. The simplest, but not least effective was composed of pink and maroon *Carnations* with abundance of *Asparagus plumosus*. The white bouquet contained the usual varieties of *Orchids*, &c., while the other mixed one was quite a work of art. Yellow and mauve were the predominating tints, and the flowers included *Cattleyas* of rich colour, *Oncidiums*, *Odontoglossums*, and yellow *Roses*. For a bride's bouquet Messrs. Perkins were easily first, and Messrs. Peed and Sons a good second.

Miscellaneous Exhibits.

Of these there were two which stood out prominently above the rest both for their extent and excellence. These were the magnificent group of *Clematis* from Messrs. R. Smith and Co., Worcester, and the splendid display of *Roses* in pots and cut blooms from Messrs. W. Paul and Son, Waltham Cross. The *Clematises* were grouped by themselves upon the floor in the central annexe, and were in wonderfully fine condition. The most noteworthy kinds were *La France*, a dark shade of colour; *Princess of Wales*, pale mauve; Mrs. G. Jackman, white; other kinds were *Countess of Lovelace*, *Marie Lefebvre*, *Mme. van Houtte*, *Sensation*, *Blue Gem*, and *Purpurea elegans*. The *Roses* were grouped near these at one of the corners, and standing out so prominently were greatly admired. The following should be noted: *Raoul Guillard*, large crimson (H.P.); Mrs. John Laing, deeprosy pink; *La France*, very fine flowers; *Merveille de Lyon*, extra good; *Clio*, large, pale flesh colour, of good shape; *Perle d'Or* and *W. A. Richardson*. These were two superb exhibits. Messrs. W. Cutbush and Son staged a miscellaneous group of *Palms* and greenhouse flowering plants, comprising also *Cytisus Andreanus* and *Saxifraga pyramidalis*; of the greenhouse plants, the blue *Leschenaultia* and the *Ericas* were well flowered examples. Mr. H. J. Jones, Lewisham, arranged a group of *Pelargoniums*, the plants of medium size, but extra dwarf, compact, and well flowered; the sorts comprised the best of the decorative kinds, as *Volonte Nationale album*, *Starlight*, *Edward Perkins*, *Digby Grand*, *Monarch*, *Linda*, *Jubilee*, and *Princess May*. Messrs. J. Laing and Sons staged a miscellaneous group of hardy flowers, comprising *Saxifraga granulata*, tall, double white; *Iris florentina*, pale blue; *Ranunculus acutifolius*, *Tulipa Gesneriana*, *Iris iberica*, *Aster diplostaphioides*, a large showy species of a light mauve colour, and several other good things. Mr. T. S. Ware staged a group of single and double tuberous *Begonias*; the best of the latter were *Claribel*, bright pink, creamy centre; *Triumph*, crimson; *Henshaw Russell*, large scarlet; *Iona*, orange-yellow; *Regalia*, light pink; *Picotee*, creamy pink with deeper edging; and *Princess May*, pure white. The best singles were *Bexley White* and *Alba fimbriata*, two good whites. Messrs. Reid and Bornemann, Sydenham, showed a group chiefly of *Pelargoniums* (*Ivy* and *zonal*). Messrs. W. Balchin and Son staged some plants of *Leschenaultia biloba* major in the best possible condition. Mr. Rumsey had several boxes of cut *Roses*, which added also to the interest of the exhibition.

A full prize list will be found in our advertisement columns.

ROYAL BOTANIC SOCIETY.

MAY 17.

THE ROYAL BOTANIC SOCIETY is proverbially unfortunate in the matter of weather, and the show on Wednesday last in the Regent's Park Gardens was practically spoilt by the heavy downpour of

rain. This was unlucky, as for fully two months past the weather has been perfect for such things as flower shows. If the exhibition on Wednesday was smaller than many we have seen here, it was in every sense pleasing, and the large tent presented a gay aspect from the judicious grouping of flowering and fine-foliaged plants.

Taking the competitive groups first, the hardy flowers claim first attention, and they were boldly massed together—the way to show them off to full advantage. The first prize for a collection was awarded to Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, who had a very fine assortment, in which we noticed *Spizæa compacta multiflora*, a plant that is likely to become largely grown, the flowers more densely arranged than in the type, *S. japonica*; *Helenium Hoopesi*, a showy flower, the florets narrow and rich orange-yellow; *Heuchera sanguinea* and several *Cypripediums*, besides very fine masses of *Delphinium nudicaule* and *Erigeron aurantiacus*. The second prize collection from Messrs. Paul and Son, Cheshunt, was of note for the fine masses of *Geum miniatum* and the yellow-flowered *Ranunculus monspessulanus*. The *Roses* deserved praise, and the chief class was for a collection which was arranged on the centre banks of the large tent. That from Mr. Charles Turner, Slough, gained the premier award, and the new variety *Crimson Rambler* showed up well as a pot plant, the heavy clusters of crimson flowers having a gay effect. It is evidently an excellent variety for this purpose. *Juno*, a China Rose, the flowers large, rose in colour, full and effective, was exhibited well, besides the usual kinds grown in pots. The nine specimens from Messrs. Paul and Son, Cheshunt, were good, especially those of Charles Lawson, *Violet de Bouyer*, Catherine Soupert, *Celine Forestier*, and *Centifolia rosea*.

Stove and greenhouse plants of all kinds contributed to the attractions of the display, but in this respect there is little alteration from year to year. One of the principal classes was for twelve specimens, and the best plants were those from Mr. J. F. Mould, Pewsey Nursery, Wilts., who showed *Statice profusa*, *Erica Cavendishi*, and *Clerodendron Balfouri* in fine condition. This class of plants, as we have frequently said before, has had its day. Mr. Mould was the chief exhibitor for these plants, and another very successful competitor was Mr. A. Offer, Handcross Park Gardens, Crawley, who had some good fine-foliaged specimens, for which he took many premier awards. His six first prize variegated plants comprised *Maranta Makoyana*, *Dieffenbachia magnifica*, and *Alocasia macrorrhiza variegata*. Mr. Henry James, West Norwood, also showed fine-foliaged and flowering plants well. Messrs. J. Peed and Son, Roupell Nurseries, Norwood, were first for nine *Dracenas*.

Pelargoniums and *Azaleas* were of the usual character. The former were contributed by Mr. Chas. Turner, the Royal Nurseries, Slough, who came first in both classes, namely, that for six fancy varieties and the same number of show kinds. The plants were remarkably well flowered, and of the fancies, *The Shah*, *Princess Teck*, *Ellen Beck*, *East Lynn* and *Delicatum* were noteworthy, whilst *Gold Mine* of the latter was well grown. The *Azaleas* from the Slough firm were worth noting, although somewhat thin. They scored first place, and other successful exhibitors were Mr. H. Eason, gardener to Mr. B. Noakes, Hope Cottage, Highgate, and Mr. R. Scott, gardener to Miss Foster, The Holme, Regent's Park. A good class was for twenty-four *Gloxinias*, and the plants of Mr. H. Eason were of much merit, well grown, the flowers standing well up and displaying considerable range of fine colours. Tuberous *Begonias* were exhibited well, and Messrs. J. Laing and Sons, Forest Hill, were a good first. In the collection were the following very beautiful double varieties: *Earl of Craven*, crimson, a very striking flower; *Lady Brooke*, salmon, a distinct and attractive shade; *Lady Dorrington*, white, margined with salmon; *Duke of York*, salmon; and *Stanstead Gem*, crimson. Mr. T. S. Ware was second. The best twelve *Orchids* were from Mr. Henry James, but they do not call for special mention.

The Caladiums from Messrs. J. Laing and Sons were one of the best features of the exhibition, and they were first for a large group, which contained many of the best kinds in cultivation, as Gabrielle Lemonier, silvery white, with green veins; L'Autonne, pale green, with silvery blotches; Excellent, deep crimson, silver and green at the margin; and Marquis F. d'Albertas, green, white in the centre.

At such exhibitions as these a large part of the show is made up of the miscellaneous collections. Many beautiful groups were to be seen on the present occasion, and Roses were a charming feature. A silver medal went to Messrs. Wm. Paul and Son, Waltham Cross, for 12 boxes of delightfully fresh Roses. Plants of their new Rose Clio, which has been previously described in THE GARDEN, were also shown. The Queen, crimson; Viscountess Folkestone, Queen of Queens, rose; Spenser, light rose; and the Tea varieties Corinna and Medea were represented; also a kind named Guillaume Gillemot, brilliant rose, a full, pleasing flower. A similar award was made to Mr. Geo. Mount, Rose Nurseries, Canterbury, for his fine flowers of leading varieties. An immense group of Calceolarias was exhibited by Messrs. Sutton and Sons, Reading, representing their splendid strain. About 100 plants were shown, all in superb bloom, the large well-shaped flowers varying greatly in colour from yellow to velvety maroon shading. A silver-gilt medal was deservedly given to this fine exhibit. A silver-gilt medal was also awarded to Messrs. J. Laing and Sons for a group of great interest, well arranged, and comprising a number of fine Caladiums and tuberous Begonias. It was a meritorious exhibit. The same firm also had *Dra-cæna Triomphe d'Anzin*, which has broad leaves of fine crimson colour; a good panful of the interesting *Fuchsia triphylla*, Caladium *Le Nain Rouge*, dwarf, the leaves red; *Coleus Stanstead Beauty*, variously coloured; and the new Palm, *Rhopoblaste hexandra*. A pleasing group was shown by Messrs. J. Peed and Sons, comprising Orchids and other things, a silver-gilt medal being awarded. Mr. R. Scott gained a silver medal for a miscellaneous arrangement. Mr. H. J. Jones, Ryecroft Nursery, Lewisham, had a splendid group of *Pelargoniums* of many varieties, which gained a silver medal, and a very charming variety of the Ivy-leaved class named Ryecroft Surprise. It is of excellent habit, and the bright rose double flowers are produced freely in fine clusters. This will, we think, become largely grown. A silver medal went to Messrs. Barr and Son for their bold masses of hardy flowers, *Pæonies*, *Oriental Poppies*, &c., and also to Mr. J. R. Box, of Croydon, for many good double varieties of tuberous *Begonias*, the following very beautiful: *Lady Beatrice Herbert*, salmon; *Countess of Caledon*, white; *Mrs. Jenkins*, yellow, very handsome; *Hon. Sidney Herbert*, brilliant rosy scarlet; *Calliope*, tender rose, and frilled; and *Princess May*, buff, shot with salmon-rose. Messrs. J. Carter and Co., High Holborn, had two large groups, a bronze medal being given to the display of *Mimulus* of splendid colours, one named *Glorious* being very charming, the flowers brilliant red, with yellow and deep velvety spots on the lip, a showy variety. Their large group of *Petunias* gained a silver medal. There is much diversity of colour and expression in this strain. *Pallas*, rose, barred with crimson; *Desdemona*, lilac, deeper in the centre; *Iolanthe*, purple; *Shylock*, crimson; and *Narcissus*, white, and fringed, are charming kinds. Mr. C. Turner had a bronze medal for his group of *Carnation Souvenir de la Malmaison*, and Messrs. Balchin and Son the same award for *Leschenaultia biloba major*. A delightful exhibit was the varieties of French *Cannas* from Mr. P. Perry, gardener to Mr. J. C. Tasker, Middleton Hall, Brentwood, Essex. *Louis Thibaut*, self scarlet; *Victor Hugo*, yellow, blotched with red; *Paul Bruant*, crimson; and *Mme. Crozy* were noteworthy. Mr. Anthony Waterer, Knaphill, had a large collection of cut flowers of his beautiful *Knaphill Azaleas*. Mr. T. S. Ware showed *Carnation Pride of Great Britain*, and Mr. Turner, *Pelargonium Rosy Gem*, a beautiful variety, the flowers brilliant rose, shaded with a bluish metallic lustre in the centre, very

distinct and beautiful. Messrs. Paul and Son had *Canna Sophie Buchner*, crimson, a fine bold flower, and *Rose Carmine Pillar*, a brilliant carmine-coloured single Rose, the petals white at the base.

A number of new plants was exhibited by Messrs. Jas. Veitch and Sons. Several *Gloxinias* deserve mention, notably *Orion*, purple, beautifully spotted; *Gaiety*, crimson, broad white margin; *Virginalis*, white; *Monarch*, crimson; *Ariadne*, purple, the margin white; and *Brilliant*, a bigeneric hybrid between *Gloxinia Radiance* and *Gesnera pyramidalis*. The leaves are large, deep green, mottled with a lighter shade, the flowers, on short erect stems, brilliant carmine in colour and with a drooping character. The same firm had a beautiful series of *Streptocarpuses*, a charming strain, and greenhouse *Rhododendrons*—*Primrose*, a large self yellow flower; *Ceres*, yellow, red in the centre, and an exquisite variety of *R. balsaminiflorum Rajah*, which is quite double, the flowers yellow, margined with bright scarlet, being the best. *Phyllocactus Niobe*, crimson, a neat, pretty flower, and *P. Diadem*, also crimson, but smaller, were also shown. There were a few other novelties.

One of the best new plants in the show was *Rhododendron Hélène Schiffer*, from M. T. J. Seidel, Handelsgartner, Steisen-bei-Dresden. It is a very compact plant, the trusses neat, not unduly large, and the flowers are spotless white. It is quite a gem of its class.

A full prize list is given in our advertising columns.

The Temple Flower Show, 1893.—This will, as usual, be held in the Inner Temple Gardens, Thames Embankment, under the auspices of the Royal Horticultural Society, on Thursday and Friday, May 25 and 26, and should the weather be favourable, there is no doubt but that many thousands will visit it. To avoid disappointment, intending exhibitors should give notice to Mr. Barron, Chiswick Gardens, as to the amount of space required. Exhibitors' names, if received in time, will appear in the special catalogue of the show, copies of which will be distributed gratis. On each day of the show the band of Her Majesty's Horse Guards (Blues), under the direction of Mr. Chas. Godfrey, R.A.Mus., will give selections of instrumental music. The council have specially arranged that gardeners (i.e., *bonâ fide* employés in a private garden, nursery, market garden, or seed establishment) may obtain 2s. 6d. tickets for 1s., which will admit them to the exhibition at 10 o'clock on Friday morning, May 26. These tickets can only be obtained previous to May 24 from the society's office, 117, Victoria Street, S.W., and a stamped and directed envelope must be sent with postal order in every case.

Caterpillars destroying Apple tree foliage (*G. A. Curzon*).—I can now give the names of the other caterpillars which I was unable to do in my first reply. The large blackish ones are the caterpillars of the satellite moth (*Scopelosoma satelliti*), a very common insect; besides eating the leaves of various trees, they are at times carnivorous, and devour caterpillars of other species. Unfortunately, they must have eaten the light coloured caterpillar which was with them in the same box, as I could find no trace of it when I looked for it; probably they destroyed the maggots you mentioned which I could not find in the box when it reached me.—G. S. S.

Pyrus Maulei superba (page 387).—I fully agree with all that "T." says of the beauty of this shrub. M. Max Leichtlin kindly sent me cuttings some years ago from which I raised plants, and I consider it one of the very best spring shrubs I have. It has a low spreading habit, with an abundance of brilliant crimson flowers. It fruits freely, and the seeds come up like Mustard and Cress. I shall be happy to send fruit to any reader of THE GARDEN if they form well this year, but of course I cannot guarantee that the seeds will come true.

In all probability the majority would resemble the ordinary *Pyrus Maulei*.—HENRY N. ELLACOMBE, *Bitton Vicarage*.

Heliconia aureo-striata.—Some time since Mr. Gower hinted that this noble stove plant grew more freely where a quantity of leaf soil was used with the potting compost. Acting upon the hint so given, my plants, of which I have several, have improved wonderfully. This is really a handsome fine-foliaged plant, and should certainly be more grown than it is. It is still somewhat rare, but why I do not know, as it certainly increases freely from suckers.—A. YOUNG.

The weather in West Herts.—Rain has, I understand, fallen in some parts of England, but here the drought remains up to the time of writing (Wednesday morning) still unbroken. It has now lasted seventy-four days, the total rainfall for this period amounting to less than half an inch. Monday last proved the hottest day of the year as yet, the temperature in shade rising to 81°, and the following night the warmest night, the thermometer exposed on the lawn never falling below 48°. On the same day the temperature of the ground at 1 foot deep stood at 65°; whereas, on only two days was this point reached during July last year. The brightest day we have yet had was Thursday in last week, when nearly thirteen and a half hours of clear sunshine was recorded. Owing to the dryness of the weather the Lilacs have produced scarcely any flowers, nearly all the buds dying off without opening. A large bush of the wild Dog Rose growing in my garden came first into blossom on the 10th inst., or thirty-one days earlier than its average date of flowering in the previous seven years and twenty-five days earlier than in the most forward of them.—E. M., *Berkhamsted*.

Gladiolus brenchleyensis.—Can any reader of THE GARDEN kindly oblige with the origin and early history of *Gladiolus brenchleyensis*?—T.

Names of plants.—*Anon.*—1 and 2, *Saxifraga hypnoides*; 3, *Valeriana*; specimen too poor to name; 4, *Lonicera xylosteum*.—*Evelyn*.—A variety of the common Beech; it is called *asplenifolia*.—*C. Pearce*.—1, *Hoya carnosus*; 2, looks like variegated Privet (send fresh specimen); 3, *Odontoglossum crispum*; 4, *Odontoglossum Rossi*; 5, send again; 6, *Clematis indivisa*; 7, send again; 8, *Keria japonica fl.-pl.*—*H. Frothero*.—*Cattleya Mossiae*, good form.—*W. D. R. D.*—*Claytonia perfoliata*.—*G. B.*—1, *Cattleya Lawrenceana*; 2, *Miltonia Warscewiczii*; 3, *Odontoglossum gloriosum*.—*Col. H. B.*—1, *Phalenopsis Luddemanniana*; 2, *Odontoglossum Harryanum*; 3, *Odontoglossum crispum*.—*J. C. L.*—*Iris ensata*.—*T. Jackson*.—1, appears to be *Pyrus prunifolia*.—*J. C.*—*Odontosoria tenuifolia*, a widely distributed plant, but it has not been found in America.—*G. Foster*.—Fern not recognised.

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No. 1123. SATURDAY, May 27, 1893. Vol. XLIII.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare.*

FLOWER GARDEN.

SEEDLING DAFFODILS.

It is curious to note how Daffodils vary when raised from seed. Naturally, one would expect this to be the case when two distinct kinds are crossed, but one would hardly expect to raise a white flower from such a highly coloured variety as the Tenby. This fertilised with cernuus gave from the same pod of seed several yellow flowers, varying much in form and depth of colour and considerably in time of blooming, and one in colour almost the counterpart of cernuus. The latter may be too much like some of the white Daffodils now grown to be worthy of naming, but as it is very vigorous, apparently equal in this respect to the Tenby itself, I shall take care of it. It is interesting to note how the parent plants have both so distinctly made their mark on the progeny. As already mentioned, the colour is that of cernuus, but the habit and poise of the flower are those of the other plant, the only difference being that the trumpet is a third longer. It is a bold-looking flower, much more striking than the drooping-flowered white kinds. Although most of the seedlings will resemble and be inferior to their parents, there will always be surprises in store and the chance of getting something good and distinct. A lot of seedling Daffodils is sure to be interesting, as they will nearly all differ in form, colour, and time of blooming. When once the young plants appear, but little trouble is involved in their culture. What raisers should primarily aim at is robustness of constitution. We do not want the lists swelled with varieties that demand certain conditions of soil and climate for their well-being, but such as have the endurance that will fit them for the wild garden and orchard. Such beautiful kinds as Colleen Bawn and Leda are lovely indeed, but they and other white-flowered kinds cannot be termed everybody's Daffodils. With the constitution of Emperor or Sir Watkin, they would be of inestimable value. I have crossed Emperor with some half-dozen kinds, and all the young plants seem of vigorous constitution, but it is long to wait for blooming time. This year a group of seedlings bloomed for the first time, the colours varying from that of obvallaris to that of cernuus; no two of them alike. I think a clump of seedling Daffodils is very pretty, owing to the variation in colour. One of them was just like cernuus in form and colour, but a fortnight later. This I shall take care of as a welcome means of prolonging the blooming period of a great favourite. I think a clump of cernuus, with half a hundred expanded blooms is one of the prettiest floral pictures that the spring months can give. Curiously enough, in this lot of seedlings there came a perfect double flower of a pale sulphur yellow. I can say nothing as regards its parentage, but I know that it came from a single variety. I merely mention this as showing how little able one is to form a correct idea of what may come from crossing two kinds differing in form and colour. The main difficulty is in obtaining seed. With me varieties such as Horsfieldi will not yield a

single seed. Pods in abundance form, but they are bags of air. Emperor I can rely on, also obvallaris. In an ideal time after blooming, seeds come moderately on some few kinds, but very dry weather shrivels, and a cold, wet time turns the pods yellow. Those who have leisure would, I think, find pot culture more reliable, as the supply of moisture can be regulated and the plants sheltered if needful when fertilised and the pods swelling up. All who can, should raise a few seedlings annually, as they will be sure to get some variation in form and colour. After the first five years there will every season be something to look for. I began about eight years ago, and though on a small scale and with no startling success, raising seedlings has given me a considerable amount of gratification. J. C. B.

NOTES ON HARDY PLANTS.

Centaurea stricta.—This is a perfectly hardy species, loving a somewhat rich stiff loam, where it makes thin roots, spreading moderately by means of underground stems. Its chief claim to notice is its fine clear blue flowers, very much resembling those of the favourite *Centaurea cyanea*. It grows but 8 inches or 10 inches high. It is, I think, superior to the better-known *C. montana*, being a dwarfer plant with flowers equally good if not quite so large.

Orobis vernus albus plenus.—I believe that this plant is scarce. In addition to the variety of form, the flowers are exquisite, being arranged in small racemes of pearly whiteness touched with pink. I have grown it many years, and never have seen it higher than 10 inches. With me it is not a fast grower, and as root division is the only mode of propagation possible, it may not become very common for some time.

Cheiranthus Marshalli, C. Dilleni, and C. Allioni.—These form a trio of the most lovely of miniature Wallflowers. Doubtless all have more or less the blood of alpinus in them; but even if they have, for all practical purposes they are distinct plants and decorative in a high degree, having rich colours and enduring properties. Allioni is the first to open, and to those who know Marshalli and alpinus, it will be enough to say that the colour of Allioni is much deeper than in Marshalli, the colour of which is deeper than that of alpinus. The next to open is Marshalli, about a fortnight later. This is fairly well known, and it would be hard to praise it too much. Dilleni is curious as well as beautiful; it opens of but an indifferent greenish yellow colour, then becomes more distinctly yellow, quickly in a day or two passing into shades of rosy purple and mahogany, which, blended with the yellow, form the curious feature alluded to. It has the advantage of carrying more foliage during flowering than the other two, and this adds considerably to the decorative quality of the blossom. Another good property of this plant is that the flowers last for several weeks on a fair-sized plant. Sometimes, I believe, this variety is known by the name of versicolor. To anyone desiring a gay rockery in early summer, these plants would be of the greatest use, and certainly few things would be more effective.

White Thyme.—Why do we see so little of this, so pre-eminently adapted for the rock garden? It is certainly as hardy as other Thymes, no doubt given like them to dying off in the older parts, but still, with a little care in the way of top-dressing, so as to encourage growth of the younger stems, it may be kept going. As to its beauty, it wins admiration everywhere when seen in good patches. It has a beauty all its own, and however charming the coloured Thymes may be, it serves also to enhance their beauty when grown in juxtaposition; indeed, the white Thyme for a good effect should predominate by the side of the crimson and mauve varieties.

Anthyllis montana rubra.—It would be hard to over-praise the typical form of this species,

which has something rather of the crushed strawberry colour, but the present variety is distinctly superior with its fine deep maroon-red clusters of bloom. This colour looks remarkably rich in contrast with the dwarf grey downy foliage resting on the ground. Lovers of distinct and choice alpine flowers should make a note of this. It likes a stony soil and plenty of sunshine.

Primula Reidi.—This is now in flower, and though I have had more plants to make a bigger show than I have had this season, I never saw the individual flowers better or larger. The flowers are big for the size of the plant, of peculiar shape and pose, ivory-white, with calyx and scape thickly beset with a mealy covering; but, beautiful as the drooping flowers are, the delicious perfume is the winning feature. My last year's seed is only just now germinating, though sown last summer. I have found it better to take the seed immediately after the capsule splits. It is then in a green state, but quite hard, and certainly it has retained all its vitality. I used to wait for the seed to ripen, with the result that it was all lost.

Primula cortusoides alba.—The typical red-purple is very beautiful, but much more so when seen side by side with the white form. The white flowers are more lasting, and besides being useful to set off the purple form, they are much more desirable as flowers for picking. I have seen a variety this spring with delicate pale green streaks running from the notches to the eye, or in longitudinal lines on the petals. These flowers have a delicate beauty, and if the feature should prove to be a fixed one, we may consider the variety a decided gain. I find these Primroses do better if given a liberal mulching of rotten peat.

Trolliuses.—Notwithstanding the dry weather these have been really fine, and the late and dark varieties are still in good form. I confess to some confusion respecting *Trollius Fortunei*. I have received this from many sources, and I find it no better and no different to specimens that I have grown under the names of asiaticus and americanus, as they used to be cultivated by the late Mr. Niven, of the Hull Botanic Gardens. I have, moreover, received *Trollius Fortunei* pl., T. *Fortunei* grand form, and T. *Fortunei* improved, but all these are vastly inferior to what I have long known as *Trollius Gibsoni* for form of flower and deep orange colour. The form of *Gibsoni* is peculiarly globular, whereas; I believe *Fortunei* and varieties have rather the Buttercup shape. For a year or two I have been raising *Trollius Gibsoni* from seed, and from the batch now in flower it is quite evident that so produced, plants do vary. All the seedlings are strikingly dark in colour both in stems and flowers, but still there are distinct shades, some almost going to Roman red. It has been my good fortune this spring to see some capital Globe Flowers grown in moist and favoured situations, but they do not compare (in darkness of colour) with *Gibsoni*. I mention this because it has been said by people who ought to know that *Gibsoni* is simply another name applied to *Fortunei*. All I will further say on this point is that if such is the case, it is vastly superior to any form of *Fortunei* it has ever been my lot to see either at home or abroad. At the same time my own experience proves that varieties are to be had by seed *ad libitum*. J. WOOD.

Woodville, Kirkcaldy.

Inula glandulosa.—This showy composite is just now in full beauty, being much earlier than usual. My reason for calling attention to it is that it may be considered quite a dry weather plant, at least in our heavy soil, the growth being altogether stronger than in moister seasons. A plant with between two dozen and three dozen flowers is most effective. It is only after this *Inula* has become well established that its beauty is apparent.—A. YOUNG.

Seedling tufted Pansies.—I have now some very fine flowers from seedlings; in fact, a really bad one it would be impossible to find. I consider my seedlings much ahead of those in another

garden where the majority of the best of the named kinds are grown. All that is needed is to sow the seeds now in a box of light soil, keeping them in a cold frame until they germinate, afterwards pricking the plants off into good soil, eventually planting in their permanent quarters in the open. All through the dry weather our beds have been really splendid.—A. Y.

Papaver bracteatum macranthum.—How ever inimical may have been the dry weather to the well-doing of the majority of herbaceous plants, it is not so to the large showy Poppies. In fact, they revel in the bright sunshine, and their beauty is not so fleeting as it otherwise is when the sunshine is alternated by showers. The above variety is just now magnificent, growing on an exposed border, the large, handsome flowers showing up conspicuously. I have raised large numbers of *P. bracteatum* from seed, but in no single instance did the flowers equal in colour those of *macranthum*.—A. Y.

CARNATION PROSPECTS.

THE present prospects are very cheerful indeed, and I cannot remember to have ever seen the plants look better than they do at the present time. Like other things, it is almost needless to remark that they are quite in advance of their usual state. The most practical proof of this that I have had is the absolute necessity of staking the flower-spikes in the middle of the month of May, and in doing this, not only have I found them nearly 2 feet in length, but in many instances the terminal buds are distinctly visible. A lover of heat and comparative drought rather than of cold, or, at any rate, of damp, the Carnation has perfectly revelled in the present season. Even in recent seasons I have known them very slow to move and backward in growth, and have encouraged them to start by the aid of top-dressings, surface hoeing, &c. But when weather is favourable few things respond more readily than Carnations, and it is in great part because of this natural precocity that there is greater safety in planting during autumn, so that there is an abundance of root-growth. Now and again a note appears expressing an opinion opposite to this, but whether plants are potted up or are left attached to the parent plant as layered till spring and then transplanted, they are not so good as those planted in autumn. I do not say that success may not have been obtained in this way, because we must accept in good faith the statements of those who say they have followed the plan, but I am convinced there is nothing better than autumn planting. When the Carnation starts in spring it is in the direction of flowering, the centre shoot, the ultimate flower-spike, lengthening. If plants are potted up or left standing where layered, and in either case remain a week or so too long, the centre shoot starts away, and I have proved again and again, and once more the fact is demonstrated this season, that spring-planted Carnations do not throw so strong a flower-spike as those put out in autumn. A quantity was potted up last autumn, and now the most casual observer looking over the groups could point out without trouble or error those that were spring-planted. Root growth is not rapid in Carnations, and the demands of the flower-spike of the plant put out in spring seem greater than the supply, so it is dwarf and stunted in consequence. Last autumn will be remembered for its excessive rainfall, and the harvesting of Carnation seed in the open air was attended with considerable risks. I only secured a very moderate quantity, though many flowers were marked and crossed. Happily, the quality of the seed saved was very good, and in some cases it would almost appear as if every one must have germinated. They have now been pricked off into a bed of fine soil, and will soon make rapid progress. From strong seedlings so many more flowers are obtained than by any other way, that I think all who can should raise a batch each year, provided seed can be obtained that makes it worth while. The pro-

duce of the cheap strains of Carnation, even now all too common, is barely worth the time and trouble expended, especially when for the same labour results ten times better may be secured.

A. H.

Dahlia hedges.—Referring to "A. D.'s" and "E. M.'s" notes on above subject, permit me to suggest a simple way of carrying out the idea. Procure some ordinary Pea rods, say about 5 feet in height, and stake the Dahlias after planting, the same as Peas. For some years past I have had hedges formed thus, and they have frequently been much admired, and by no one more so than our old friend the late Mr. Wildsmith when here some five years ago. I plant double, single, and Cactus Dahlias, but always keep the double kinds separate. To my mind they have a far more natural appearance grown in this way than when bundled up round one stake. Amongst the single and Cactus kinds I have several times sown a few seeds of *Tropæolum canariense*, blue and white *Convolvulus* and Sweet Peas, with here and there a seed or two of tall, primrose-coloured Sunflowers to give dignity and grandeur to the picture. Do not cut off the twiggy portions of Pea rods if the *Tropæolum* is to be used, as by leaving them they get clothed with the free growth of this useful annual, the whole going to make up a charming natural-looking mass for some two months or more in the autumn. For hiding any unsightly object during the summer or for shutting out the vegetable quarters in the kitchen garden if thought necessary, hedges thus formed will add to the beauty of almost any garden.—H. J. C., *Grimston, Tadcaster*.

An erratic Lily.—A correspondent from Liverpool writes us that a *Lilium Browni* supplied to him January 20, 1892, potted off and kept under the stage in the greenhouse with but little water made no sign of growth that year. It was plunged in fibre in a cool dry place during the winter, and early in February, having a shoot several inches long, was brought under glass in a sunny position. It flowered in mid-April with a single bloom, pure white, without any outside coloration, anthers chocolate-brown. Moreover, the stem and foliage as sent to me were green without the usual dark tint; its height was about 3 feet. It is not an uncommon thing for Lily bulbs to lie dormant a season, especially if too dry, but we were not aware that the deep coloration of *L. Browni* was so entirely due to the greater amount of heat and light which they enjoy during their natural period of growth. The drought this spring will, we think, cause many bulbs to lie dormant in the ground. They will make root growth, but no breaks; whereas, pot Lilies well supplied with water will this year have superior advantages over their kinsfolk in the open ground.—WALLACE AND CO., *Colchester*.

Erinus alpinus (C. J. W.).—This is an admirable plant for clothing the rockwork, whilst its bright violet-blue flowers are very gay, and last a long time in great beauty. The variety *hispanicus* is a somewhat larger plant than the species, and sends up a spike of bloom some 6 inches in height. It may be sown in front of the rockwork, and in any place where just sufficient earth exists to enable it to germinate.—W. H. G.

Linaria crassifolia.—"C. J. W." sends me this plant for a name. He says it is now flowering beautifully upon his rockery. It is one of the most useful spring and summer blooming rock plants which can be grown; it has trailing bright green shoots and yields a profusion of its purplish or blue flowers, a colour which is always welcome in the garden, more especially early in the season. It thrives well in good ordinary garden soil well drained.—W. H. G.

Primula mollis is an interesting Bhotan species in bloom in the hardy plant house at Kew. It is not strictly hardy, but may be grown in the greenhouse or in such a structure as that at Kew. English winters, fogs, heavy rains, and other unpleasant conditions are not favourable, however, to this species. When well grown, a plant in full

bloom is attractive, a large quantity of flower-stems being produced, the flowers arranged in whorls as in *P. japonica*, whilst they are of a deep crimson colour, the petals narrow. The leaves are downy or hairy, also the stem, and the plant continues in bloom over a long season.

Hardy alpinines.—The Guildford Hardy Plant Company render undoubted service in occasionally presenting at the Drill Hall and elsewhere examples of the many charming alpinines as well as other hardy plants they seem to have in abundance, and still further set up in such a pleasing way. At a recent meeting, in their group exceedingly pretty was *Androsace sarmentosa*, flowers a pleasing rosy pink, borne in small scapes about 5 inches above the ground. The foliage is of a somewhat silvery aspect, not unlike that of *Aubrietia*. All the *Androsaces* like a peaty soil and are best if partially sheltered in winter from excessive moisture. There are a dozen varieties of *Androsace* in cultivation, all more or less lovely. *Dracocephalum grandiflorum* might be regarded as a dwarf miniature *Salvia*. Though regarded as a shy bloomer, the plants shown were flowering freely, the blooms like those of the Nettle, but much larger and of a beautiful blue tint. It likes a little shade, fairly rich loam, and needs special protection from slugs, which are very partial to it. *Iberis jucunda* is better known, though little grown. It is one of the dwarfest and prettiest of all the perennial Candytufts and a charming rock plant. The flowers are reddish pink in colour, borne in roundish trusses. It likes a somewhat sandy soil. Another beautiful dwarf plant is *Haberlea rhodopensis*, not unlike a *Ramondia*, quite dwarf, flowering freely, blooms lilac-purple, with a white throat, something like a small *Streptocarpus*. A very lovely gem is *Aubrietia tauricola*, which forms dense tufts of leafage, whilst the small clusters of flowers are but just elevated above it and of a distinctly bluish tint. This form should be employed for hybridising with violacea or *Leichtlini* for the production of new colours, if possible. *Saponaria* var. *splendens* has small, fine-petalled flowers of a magenta hue. Lastly, I mention the various dwarf creeping *Phloxes* of the setacea section, especially *divaricata*, lavender flowers; *Nelsoni*, white; *Vivid*, rosy pink, and some others, all of which formed pleasing features in the group.—A. D.

PARROT TULIPS.

TO THE EDITOR OF THE GARDEN.

SIR,—We beg to send you some spikes of Parrot Tulips of eight distinct kinds. The varieties sent are *Perfecta*, yellow with red stripes; *Lutea major*, pure yellow, outside greenish and tipped red; *Rubra major*, dark crimson, petals more fringed than in any other variety; *Admiral of Constantinople*, crimson; *Cramoisi*, dark crimson with distinct basal blotch; *Markgraaf*, yellow, flaked and flamed with dark red and green; *Café*, flowers veined and spotted brown; *Couleur de Café*, like the last, but with very clear soft brownish spots.

Parrot Tulips have been cultivated in Holland for about three centuries, but their origin is unknown. It seems probable that they are an accidental monstrosity of some garden Tulip which has become constant and fixed. Therefore, the best name would be *Tulipa Gesneriana* var. *monstrosa*. Formerly it has been confused with *Tulipa acuminata*, Vahl. (*cornuta*, or *stenopetala* of gardens), which has got the same synonym as the Parrot Tulips, viz., *turcica*. *Tulipa acuminata*, however, is quite another thing, as may be well known to the greater part of horticulturists. It is distinguished by very narrow, long reflexed petals of a dark red or yellow shade. It has been suggested that the Parrot Tulips are the result of a cross between *T. acuminata* and some garden Tulip, but we do not consider this

opinion to be more than a hypothesis. Purchasers of Parrot Tulips should take care to get flowering bulbs, as often unbloomed bulbs are sold in the trade, and the latter generally lead to disappointment, producing only one leaf instead of flowers. We add to this some Darwin Tulips of very different shades. You will agree that among the red and dark shades there are most brilliant and effective varieties. The correspondent who "sees no beauty in the dark shades that have a dead aspect, not pleasing in the garden" (p. 342), probably did not see Darwin Tulips at all, or of a very inferior quality. Indeed the dark shades are by far the best of the collection, and everywhere excited the highest interest and admiration.—E. H. KRELAGE & SON.

. The Parrot Tulips are brilliant and picturesque flowers, monstrosities, of course, but they carry admirably and are finely effective in the garden. Nothing we could say would be too much for their beauty.

The Darwin Tulips are what amateur florists call breeders. These Darwin Tulips consist largely no doubt of seedlings which have remained in the "cocoon" state, and may so continue to remain or at any time become rectified, as we have seen seed-beds of these unbloomed seedlings more than twenty years old, but still cultivated, as few years passed without the cultivator enjoying the sight of one or more assuming its brilliant robes. But why the name Darwin should be given to these "cocoon" of florists' Tulips is beyond our comprehension, and Messrs. Krelage of all people should not burden us with needless terms. When a startling name like Darwin is given, one expects something exceptionally distinct in the plant, and not such things as one has been accustomed to see all one's life growing in cottage gardens. Amongst the flowers sent there was one very pretty dark velvety kind, but we confess to a greater partiality to the breeder forms of our "English Tulips," amongst which are some great beauties, especially amongst the roses and byblémens, with great moon-like, pure white centres and the most exquisite forms, and often brilliant and delicately soft colours.—ED.

Hardy flowers at the Crystal Palace show.—These were remarkably fine features at this exhibition, and if any proof were actually needed as to the popularity of hardy flowers in general, it could receive additional evidence in its support by the large amount of interest taken in these productions on this occasion. All horticultural societies should at their exhibitions give all possible encouragement to hardy plants and flowers. In the competing class for a collection of hardy herbaceous, bulbous, and alpine plants there were three very comprehensive exhibits, which taken *en masse* made a fine display, not surpassed in this respect by anything in the show. *Spiræa japonica compacta*, *S. palmata*, *S. astilboides*, and *S. aruncus*, extra fine; *Pyrethrums* in variety, both single and double; *Iris* in species and families, the Spanish *Iris* and the German being well represented, Canary Bird, a form of the Spanish, being of a beautiful shade of colour; varieties of *Erigeron*, of *Trollius*, and of *Saxifragas* were all included in the first prize groups, with several pans of *Violas*. In another part of the building was a fine miscellaneous collection not in competition. Some few of the foregoing had been brought on under glass, but they are none the less hardy, this only showing their dual utility.—H. G.

Oncocyclus Irises.—The Rev. H. Ewbank's note (p. 395) will greatly help those who are trying to grow these difficult and fascinating plants. He lately, when visiting Oakwood, gave me some good

hints as to their cultivation, and I have since seen them growing, and some of them in bloom in his garden in the Isle of Wight. Those in bloom were *I. susiana*, very strong, *I. Korolkowi* and *I. lupina*, all most beautiful. I was a little too soon for *I. Lorteti*, said to be one of the finest of the family. One thing that at once strikes a visitor to Mr. Ewbank's garden is the number of ingenious contrivances, some small, but all useful, some to give shade or shelter, others to protect from slugs, showing that he has a great advantage in experimental gardening—the power of invention. His wall, with alternate bricks left out to give spaces for plants, was covered with hanging plants with a beautiful effect. I have lately been taking up bulbous *Irises*, of which the foliage had already (this earliest of seasons) dried off. The hints I had from M. Hoog, of M. van Tubergen, as to using lighter soil than our usual have led to very good results. *Iris Histrio*, *I. Bakeriana* and *I. Bornmulleri* had increased both in size and number. *Iris reticulata*, out of a lot of fifty, had some of the bulbs very fine and healthy; others had black upon them and smelt of fungus. These last were dipped in a solution of Gishurst compound of the strength of 4 ozs. to the gallon of soft water (any fungicide would, no doubt, answer the purpose), were then rubbed well about and washed in soft water. The smell had gone and the bulbs looked much better, but next year's flowering must decide whether the treatment has been efficacious.—GEORGE F. WILSON.

FLOWER GARDEN NOTES.

A SLIGHT addition to the suggestions made last week respecting the present planting of the flower garden may be a reminder that many herbaceous things are very suitable for the formal garden, and effective combinations may be secured by a judicious selection of these in variety, or with a mixture of perennials and annuals. A slight instance of the latter planting is in a bed close at hand, which consists mainly of clumps of *Pinks* and occasional small groups of scarlet *Lobelia* but as there are vacant spaces between the two established plants, these will be filled in with a purple *Viola* if we have it to spare, and, failing this, with one of the bedding *Lobelias* or dwarf *Ageratum*; either will contrast nicely with the foliage of the *Pinks*. When some of the beds in the formal garden are used for border *Carnations* it is a good plan to make due provision for respective heights, and also if they are to be mixed to blend the colours nicely. *Margarita Carnations* sown in February, and pricked off as soon as we could handle the seedlings into a three-light frame, are now capital stuff, and two large beds have already been planted. The mixture of *Aster Amellus*, *bessarubicus*, or *acis* with the creamy white summer-flowering *Chrysanthemum* is a rather familiar feature from the frequency with which it occurs in large beds in some public gardens, and a very fine bank of colour is thereby secured. The combination, however, is rather stiff and formal, as all three have a table-like look about them. I think some nice clumps of *Galtonia candicans* or *Nicotiana affinis* associate better with the *Starworts*, and both may be fairly classed as hardy perennials if they get a good surface mulching after the foliage is cleared in autumn. Among the larger herbaceous plants there are few better things than *Starworts* for the purpose under consideration. They can be planted in separate colours in mixtures, respectively as carpet and taller dot plants, or with other flowering shrubs. A large bed in our pleasure grounds was planted alternately with hardy *Azaleas* and *Aster formosissimus* Robert Parker and *A. paniculatus* blandus. In spring we get the fine green foliage of the *Starworts* acting as a carpet to the *Azaleas*, whilst in late summer and autumn the position is reversed; indeed, one of the finest combinations last autumn was the fine clumps of the white *Starwort* showing to splendid advantage against the red-leaved *Azaleas*. Fine beds can be made with *Pentstemons* alternately with *Lobelia fulgens*

or one of the erect-flowering *Campanulas*. The list might be much extended, although in all operations where herbaceous plants are introduced into the formal garden the aim should be to secure as long a flowering season as possible, and to avoid those things whose foliage is practically done for immediately after the flower is over. Some of the *Spiræas* and *Pyrethrums*, on the other hand, are examples of beautiful foliage retained right through the season and forming an admirable contrast to a mass of bright colour—*Violas*, for instance. Nearly all herbaceous things are, on dry soils, now feeling the effect of the prolonged drought. Watering on a big scale—and unless done thoroughly it is useless—is very seldom practicable, and the only way to relieve the plants of the daily strain is a good surface mulching of half-rotten manure, although even this will not be of much avail unless accompanied by a change of wind and warmer nights.

Annuals sown on a slight hotbed are quite ready to go out, and must soon be planted, although the operation will necessitate an extra amount of labour if the present weather continues. They must be thoroughly well soaked before lifting and ought to have one good watering to settle them in their places. Sweet Peas, both those planted from pots and that were sown in the open, make very little headway; they can be mulched and watered if time permits, although, as with many herbaceous plants, what they really want is a softer wind and warmer nights. Any ornamental foliaged shrubs or small conifers that may be moved from beds, boxes or vases should be seen to at once, not laid in by the heels and left for some time, but consigned to their summer quarters (a good north border) immediately they are removed from the flower garden; a good watering and surface mulching are necessary if the weather continues dry. A similar position is suitable for dwarf perennials, as *Daisies* and *Aubrietias*, moved and divided from the spring garden, and also for cuttings of herbaceous Candytuft.

We are cutting (May 12) the last of our *Daffodils*—the double poetics, and although these have come along somewhat earlier than usual, we have had a long season. Those who wish to plant in quantity (cheaply) for naturalising, cutting and prolonging the season, cannot do better than note *obvallaris*, *scoticus*, *princeps* and the old double yellow in the trumpets, *Stella* and *John Bull* in the star section, and the single and double poetics.

Claremont.

E. BURRELL.

SHORT NOTES.—FLOWER.

Trollius Fortunei fl.-pl. is one of the finest of the Globe Flowers. It is vigorous, and has deep green leaves, bronzy stems, and rich orange semi-double flowers that make a fine show of colour when the plant is in full bloom. It is a very good type for cutting, although one does not see this so much in gardens as other poorer forms.

Adonis pyrenaica.—This beautiful Pyrenean form, introduced to English gardens in 1817, was flowering freely a few days ago in the Tottenham nursery. There was a mass of it in a moist border where the soil is fairly light. It is finer than the better-known *A. vernalis*, the leaves more feathery and the flowers handsome in shape, the colour deep yellow.

Campanula glomerata dahurica, called in some catalogues *C. speciosa*, is unquestionably one of the finest of the Bellflowers. It is considered by some a distinct species, but is merely a variety of our native *C. glomerata*, having been brought from Siberia. The plant makes a sturdy growth, throwing up vigorous stems crowned with a dense cluster of the deepest blue flowers, which are useful when cut. We have seen this fine *Campanula* in several nurseries, and never pass it without noting its splendid colour. Even in gardens near large towns it thrives well, proving one of the most beautiful things that can be used for such a purpose.

Double crimson and blush Pæonies were in full beauty a few days ago in Mr. Anthony

Waterer's nursery at Knaphill. These splendid flowers remain unbeaten even against the many new varieties that have been seen of recent years. The flowers are superb in colour, the old double crimson in particular, and the double blush is of a soft decided shade. Large breadths of each are grown at Woking, and a fine mass of colour is obtained. *Pæonia anemonæflora*, brilliant crimson, and a kind named *humilis*, which is of dwarf, compact growth, the flower magenta in colour, small, and effective, were also very fine. It would be easy to get finer *Pæonies* than these, and they look well when boldly massed together.

NOTES OF THE WEEK.

Cœlogyne ochracea.—A panful of this in the Kew collection is very charming. The racemes are produced very freely, the flowers pure white, the inner face of the side lobes enriched with yellow. It is exceptionally free and beautiful when in full bloom.

Rose Acacia on its own roots.—*A. hispida* on its own roots was very fine at Knapp Hill recently. This is a good garden tree, comparatively dwarf, very beautiful at this season with its rose-coloured flowers, and vigorous. It thrives well near large towns, but needs shelter, as the branches are brittle.

Earliness of the season.—On the 15th of this month I gathered my first May Duke Cherries from an open south wall; on the 12th I gathered Peas Veitch's Exonian and William the First; the first ripe Strawberry, Garibaldi, was gathered from outside on the 17th.—RICHARD NISBET, *Cliveden Gardens*, May 18.

Gladiolus insignis is very beautiful in the warm, light border against the Orchid house at Kew. It is of free growth, the scapes tall, rising just above the robust leafage, and the individual flowers bold, produced closely together, red, the lower half of the segments coloured with purple. It is a glorious early-blooming species.

Gladiolus segetus was blooming with great freedom lately in the Royal Gardens, Kew. A robust clump of it is planted in the warm, sunny, well-drained border skirting the Victoria Regia house. Here this South European species thrives splendidly, sending up a number of its rich purple flowers, shot with crimson. It was introduced as far back as 1596.

Sun Roses.—Many a bare and dry bank might be beautified with the varieties of Sun Rose (*Helianthemum vulgare*). They are in bloom now, and make an interesting feature on a sunny bank, over which they love to scramble. A good collection will give a variety of colours, from white to the richest yellow. *H. croceum* is pretty with its silvery leaves and yellow flowers.

Phalænopsis tetraspis.—Flowering in the Kew collection is a beautiful type. It reminds one of *P. Luddemanniana*, and the flowers are of the purest white, not quite so large as those of that species, but very chaste and distinct, relieved in colour by a yellow suffusion on the lip; the front lobe is covered with downy hairs on the lower portion. It is a native of the Andaman Isles.

Pyrethrum Jubilee.—We have forwarded by this post a small box of *Pyrethrum Jubilee* flowers cut from the open borders. We have a large bed now one mass of flower of the brightest crimson, and showing the hardy habit of the plant during all the recent dry weather.—W. BALCHIN AND SONS, *Hassock's, Sussex*.

*** We think the richest in colour of any *Pyrethrum* that has ever been sent us.—ED.

The season.—This spring has been in one sense perfect for forcing fruit under glass, at least where fire heat is not employed, but from another point of view it is a comparative failure. One of the chief uses of glass is to protect plants from bad weather, but this season, with the exception of a few frosty nights, we have had no bad weather, so that no sooner have we commenced sending off the forced Strawberries in bulk than the outdoor

fruit comes in to compete with them, the first (Noble) having been gathered from the garden to-day. The outdoor crops are ripening prematurely owing to the drought.—E. H. B., *Hereford*, May 15.

Weigela rosea nana variegata.—At the present time we have some really beautiful examples about the pleasure grounds of this, and the blending of the colours now that the plants are in bloom is really charming. The long slender shoots clothed with white and pale green foliage, and wreathed with delicate rosy flowers are really very beautiful. All the *Weigelas* are quite at home in this district.—A. YOUNG, *Abberley Hall*.

Azalea glauca stricta.—This is a charming little gem sent from America. A small group has been conspicuous among many mixed, but commoner varieties. It is a deciduous kind, with a close erect habit of growth; the leaves are small, of a soft green above, but glaucous below, and the flowers are of a pure waxy whiteness, small like those of the Ghent varieties, and thickly clustered together. It is quite unlike any other hardy *Azalea* and a decided acquisition.

Azalea liliflora.—This is very far from being common in gardens, but it should be, for in it we have an *Azalea* that combines with perfect hardiness the fine form and character of the greenhouse species. As seen flowering in the open bed the ordinary observer might suppose it to be a greenhouse kind temporarily placed in the open air. In leafage it resembles the *Azalea indica* section and is quite evergreen, the leaves being closely set with hairs. The flowers are large and pure white.

Pea William the First.—I gathered off this grand old favourite in the open ground on May 19 two pecks of good Peas and a like quantity on the following day. The seeds were sown on sods of turf in a cool Peach house on February 11, and the plants set out on March 24. I sowed this variety last year on the same date, gave it similar treatment, and gathered the first Peas on June 13—a difference of three weeks and three days compared with this year.—H. TAYLOR, *Gredington, Whitchurch, Salop*.

Irises blooming freely.—It is worthy of note how freely all kinds of Irises are blooming this year. Many of the patches have given more flowers this year than they have in three or four years before. When these are seen in a mass they are lovely, and equal many Orchids in their markings and grandeur. It is to be regretted we do not see more of these in our large private gardens. Few things are more useful for vases. I find they travel well. In Bath Market there is a great demand for the cut blooms.—J. C. F.

Early Strawberries.—We have, I think, most of the early Strawberries growing in the open quarters together, which is the only true test of knowing which is the earliest kind. Among them are Noble, Scarlet Queen, John Ruskin, Earliest of All, Burghley President, and De Thury. I have this day inspected them, and find none approaching ripeness but Scarlet Queen, a very handsome conically-shaped fruit. Even then I only find a ripe fruit here and there; still, enough to give it the place of honour—the first ripe outside Strawberry.—R. GILBERT, *Burghley*, May 20.

The Kentish fruit season.—Owing to the exceptional forwardness of the season the Strawberry crop in all parts of Kent is fully a month earlier than usual. The drought has somewhat affected the older plants, but those of two and three years' growth are showing well, and with a continuance of the mild warm showers we have experienced lately there is every prospect that the later varieties will yield heavily, the crop being fully equal, if not superior, to the average of the last few years. Owing to the hardness of the ground, caused by the long-continued drought, it has been found impossible to plant any new runners; consequently next year's crop will be minus second-year fruit. Red Currants and Gooseberries are a splendid crop, but Black Currants are very

poor. Pears promise well, but unless there is more rain shortly to wash the trees from insect pests the Plum harvest will be a very poor one, vermin having put in an appearance in abundance. There is every prospect of a very heavy yield of Apples, and the Cherry crop is almost unprecedented both for the quality and quantity of the fruit.

Chionanthus virginica.—There are two species of *Chionanthus* in cultivation, one of which, *C. retusa*, is a native of China, the other, *C. virginica*, coming from North America. Of the two, the latter is the better known in this country, being perfectly hardy and flowering with great freedom during the month of May. The flowers, which are fragrant, are borne on large pendent racemes, the corolla being white and cut into narrow segments; it is to this marked division of the petals that the popular name of Fringe Tree is due. This small tree is one which ought more frequently to be planted in gardens. Not only is its beauty striking and distinct, but it carries handsome foliage and is of convenient size. Loudon says that in N. America it attains a height of 30 feet, but, as a rule, one sees it under one-third of that stature in Great Britain. We have this week noticed specimens 5 feet high full of flower. It requires no special conditions, an ordinary loamy soil suiting it well. It was introduced in 1796.

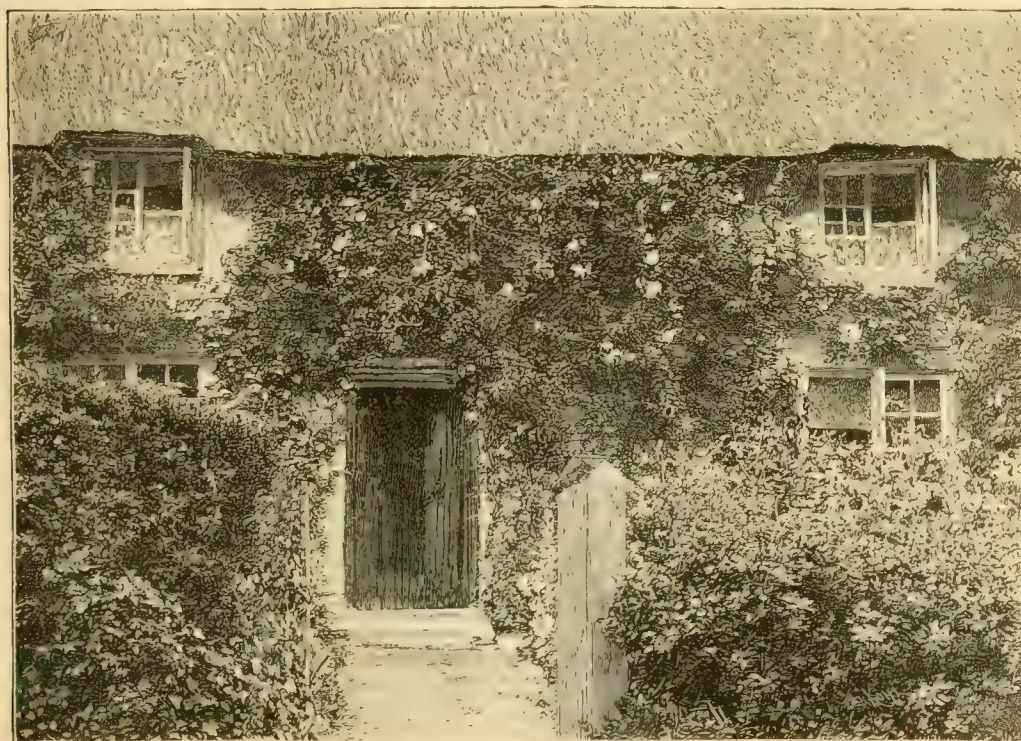
Amelanchier alnifolia.—Although this species is not so well known in gardens as are *A. canadensis* and *A. vulgaris*, it is equally well worthy of cultivation, especially as it does not compete with them in point of time, but flowers somewhat later. *A. alnifolia*, like *A. canadensis*, is a native of North America, but whilst the latter belongs to the eastern side of the continent, the former is a native of the western side, hence the popular name of Western Shad Bush. It appears to have first been discovered on the Upper Missouri River by an exploring party which set out in 1804 to cross the North American continent from east to west. Its introduction to Great Britain was effected by Douglas in 1826. Although for some time regarded as a geographical form of *A. canadensis*, it can be readily distinguished from that species by its more erect branches and by its shorter, broader leaves, the blades of which are toothed on the terminal half only. The flowers are pure white, and closely set on short erect racemes. The species possesses the free-flowering character of its two allies.—B.

Roses in May.—The present state of the Roses indicates that if the season continues fine and hot, June, which so often belies its character, will this year be indeed the month of Roses. Probably, never before were so many seen in May, and I venture to think that the list here given of dwarf Teas in flower during the last week of the month of May will be a record, and not soon beaten unless we have a repetition of similar seasons. It could be extended if all those that merely showed coloured buds were included, but those I here name have all produced perfect flowers. They are Marie van Houtte, Anna Olivier, Hon. Edith Gifford, Comtesse Caserta, Goubault, Perle de Lyon, Mme. Lambard, Jules Finger, Madame Charles, Narcisse, Jean Pernet, Marie Lambert, Miss May Paul, Princesse de Sagan, G. Nabonnand, Clement Nabonnand, Lazarine Poizeau, Mme. Hoste, Mme. Welch, Comtesse Panisse, Comtesse de Labarthe, Pauline Labonte, Mme. Henri Vilmorin, Souvenir de Thérèse Levet, and Mme. Alfred Carrière. Lamarque upon the wall has been delightful with a profusion of blooms. If it only had a good constitution and could be generally relied upon, there would be no better wall Rose in existence. For freedom, fine form and freedom of colour it is not surpassed. Dijon Teas on walls and fences with similar vigorous kinds, such as Rêve d'Or and W. A. Richardson, are full of flower, providing plenty for cutting.—A. H., *Sussex*.

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A WAYSIDE COTTAGE IN CORNWALL. WALL.

THE annexed engraving represents a pretty old thatched cottage on this estate, in which the garden foreman resides. The front of the cottage is almost entirely covered with *Solanum jasminoides* intertwined with Gloire de Dijon, Rêve d'Or, the old crimson China, and other Roses. The *Solanum* is just now (May 17) beginning to flower, and if not cut down by frost will continue to bloom profusely till Christmas. It is wonderful the length of time it continues to blossom and the enormous quantities of flowers it produces, the individual trusses being very large and almost pure white. The house stands near to the side of a public road, and is



A wayside cottage in Cornwall with *Solanum jasminoides* and Roses growing over the front. Engraved for THE GARDEN from a photograph by Mr. Wm. Lidgey, Deroran.

greatly admired by passing tourists. During the summer this *Solanum* makes an enormous growth, which is allowed to remain for protection to the main stems through the winter and is pruned close to the wall early in March; in this way it has frequently stood 15° of frost. I have seen so-called *Solanum jasminoides* grown indoors and out in many places, but never found a better variety either for purity of colour or size of truss.

Trelissick, Truro.

W. SANGWIN.

Three useful old climbing plants.—My cottage is partly covered with three useful and not-often-seen climbing plants. I allude to *Clematis montana*, *Lonicera fragrans*, and the old scarlet trumpet Honeysuckle. By what I can learn, they have been planted fully fifty years. The *Lonicera* often opens its first flowers in January if the winter is a mild one. Though not by any means a showy flower, it has much real beauty when closely examined. As its name implies, it

is very sweet-smelling. For the first time, so far as I have noticed, it has this year ripened some seed-vessels. Doubtless this is owing to the extra sunshine and warmth ever since early in March. *Clematis montana* has been in flower the past three weeks, being fully a fortnight earlier than usual. Its long garlands of small white flowers have a charming effect, especially if on a darkish-coloured wall. The trumpet Honeysuckle is just coming into flower. While not decrying any of the newer and very necessary climbing plants, I think it is also wise not to overlook the older, though not unfrequently as useful and interesting kinds; hence this note.—H. D. C., Grimston, Tadcaster.

Aldbrough Anemone.—I do not object to the name Aldborough Anemone—I think it is generally recognised and catalogued under that name—but to your correspondent writing it "Aldboro'" Anemone. That would identify it with Aldeburgh, in Suffolk, a name by which the latter place is generally known. I would have it for all

red spider and over-run by mildew, it is not at all surprising that the majority of growers prefer to keep them out of their fruit houses. It does not follow, however, that they cannot be well grown in fruit houses without detriment to the other crops, and I will go even further and assert that the combination can be made a very profitable one. Tea and Noisette Roses are naturally much the most suitable for the purpose, and none more so than Maréchal Niel and the good old Gloire de Dijon. Lamarque treated in every way similarly to Maréchal Niel is admirably adapted for culture in mixed houses, and so also are Climbing Niphetos, Catherine Mermet, The Bride, Mme. Lambard, Anna Ollivier, Mme. Thérèse Levet, Comtesse de Nadaillac, and Mme. Falcot. For cutting in a bud state, l'Idéal, W. A. Richardson, and Safrano can be recommended. All things considered, however, the first four named are the best for growing in fruit houses, these, according to my experience, being the least addicted to mildew, besides possessing several good qualities. In order to give any of them fair play, they ought to be planted at much the same time as the fruit trees and Vines are. Anyway, it is quite useless to attempt establishing them in a house where the best part of the roof is already covered with either Vines or trees; nor will they long remain in a healthy, profitable state if they do not get a fair share of sunshine and light.

If, therefore, Roses must be grown in fruit houses, the arrangement of the Vines or fruit trees must be somewhat different to the ordinary methods. Supposing they are to be associated with Vines, the houses best adapted for the purpose are those known as three-quarter span-roofed, the Roses occupying the back wall and short hip-roof, the Vines having the long front roof, and planted not less than 4 feet apart. During the first two or three years the Vines will not unduly shade the Roses, and in later years the latter usually hold their own. Tea Roses also succeed well against the back walls of lean-to vineries for the first four years after these and the Vines are planted, but the time comes that the latter smother the Roses. They would not do so, however, if they were trained 5 feet apart and the laterals stopped at the second joint beyond the bunches, this letting in a fair amount of sunshine and light to the back walls. Where there is an end wall to a lean-to or span-roofed vinery, Roses could be planted against this and eventually be trained over or across the first 4 feet of roof. In a rectory garden that I sometimes visit a lean-to house is divided between Vines and Roses, and it would be a hard matter to decide which half of the roof gives the most pleasure. Just now Maréchal Niel and Gloire de Dijon Roses are being cut by the basketful, while later on a serviceable lot of Grapes will be forthcoming. Personally, I should prefer to grow Roses with Peach and Nectarine trees rather than Grape Vines, being under the impression that there are fewer risks to be run in the association. In this case, again, the back wall and short hip-roof of a three-quarter span may be devoted to Roses, the Peaches and Nectarines being trained over a semi-circular front trellis. If more fruit and fewer Roses are desired, then it is advisable to partly cover the back wall with Peaches and

time associated with Mr. Nelson's Aldborough, as being one of the many good plants distributed from his garden. Although undoubtedly a very fine form of *A. fulgens*, the latter is completely dwarfed in size of flower and height of flower-stalk compared with it. In fact, with me the Aldborough Anemone has almost superseded the old variety, a few roots of the latter being left more by accident than design.—WM. ALLAN, Gunton Park.

ROSE GARDEN.

ROSES IN FRUIT HOUSES.

THERE is no disputing the fact that Roses succeed best, as a rule, when kept entirely by themselves, that is to say, when a house or houses are wholly devoted to them, and it is equally certain that very many growers consider them a nuisance among Peaches, Nectarines, Grape Vines, and such like. Roses being so liable to be infested by green-fly and

Nectarines, keeping the Roses together at one end. Such free-growing Roses as *Maréchal Niel*, *Gloire de Dijon*, *Lamarque*, and *Climbing Niphetos* may also be planted at the ends and trained along three wires strained immediately under the ridge of a hip-roofed house, and they might be grown midway between the trees over the trellises and up the back walls till they are crowded out. At Canford Manor, Wimborne, another and better arrangement than I have yet alluded to is attended with remarkable success. The house in which Roses and Peaches are grown together is a rather lofty lean-to structure, the height at the back being not less than 12 feet, and the front lights about 5 feet high. This height admits of cross trellises being employed with advantage, similar arrangements not answering well when there is less head room. In order to be well understood, I must point out that these trellises are taken across the house at right angles with the front and reach from the ground up to the roof, and being located about 9 feet apart, plenty of sunshine and light reaches the trees trained against them, and also those growing against the back wall. Although this plan is not adopted at Canford Manor, there is nothing to prevent the Peach and Nectarines being planted back to back against these cross trellises, each having separate network or wires for fastening them to. In this manner more trees can be grown, or more fruiting surface allowed for than by any other method of training, and it has been further well proven at Canford that *Maréchal Niel* Roses may also be grown over the roof between the cross trellises. Many basketfuls of very fine blooms have recently been cut from the Roses, and the growths not being thickly trained, good crops of fruit have set on the Peach and Nectarine trees. The proper way to treat the *Maréchal Niel* is to cut the trees hard back directly after flowering, and they then form fresh extra long and strong growths, which will flower throughout their entire length the following season. This severe pruning has already been done this season at Canford, but the crops on the fruit trees will be well coloured and probably ripened before the Rose shoots shade them to any appreciable extent.

In each and every case the Roses succeed much the best when planted out. They are most liable to fail under starvation treatment, but if planted in a fairly strong compost they grow vigorously, flowering abundantly accordingly. What suits Vines or Peach trees is equally acceptable to the Roses. Being also similarly well attended to in the way of manuring and watering, their good health will be well sustained. As before stated, the lovely pure white *Lamarque* as well as *Maréchal Niel* ought to be freely cut back after flowering, while the *Teas* should be pruned moderately hard before they commence flowering, the finest blooms being most freely produced by the strong sucker-like growths caused by rather hard pruning and liberal treatment at the roots. Green-fly ought not to be allowed to get strongly established on Roses any more than on the Peach trees, and moderately strong fumigations with tobacco paper, given when the Peach trees are not in flower, will usually keep them free of this pest. If cold easterly winds can play directly on the young Rose shoots, mildew will inevitably gain a foothold. By way of prevention and for the good of the occupants of the house generally, shut out cold currents of air as much as possible, and in particular avoid opening the front lights much before the fruit crops are ripening. A free use of flowers of sulphur—

the affected parts being well coated with it—will destroy mildew in hot weather, and syringing with soapy water is also fairly effective. Mildew specifics can be bought or made, but these are apt to stain the wood-work of the house badly. Where so many err in planting varieties most liable to become badly mildewed, and that, coupled with starvation treatment, is the principal cause why Roses and Peaches are not more often seen together in the same house.

I. M. H.

Turner's Crimson Rambler Rose, which has been shown recently at several exhibitions, is a splendid acquisition to the *Polyantha* class. We saw it last year, when first shown, and this year it has displayed the same fine character. It is interesting to know that this Rose is of Japanese origin. It was brought to England by an engineer on a steamship trading to that country. A first-class certificate was given to it by the Royal Horticultural Society when exhibited at their meeting on July 8, 1890. At the Rose show held at the International Horticultural Exhibition at Earl's Court last year it was awarded a gold medal, and the variety fully justified this award. *Crimson Rambler* Rose has many good qualities. It is robust in growth, making vigorous shoots in comparatively little time, and the flowers are produced in bold pyramidal clusters, the colour intense crimson. Individually they are of rosette-like form, whilst a succession is maintained through the season. Its freedom is remarkable and the colour delightful, a rich, glowing crimson shade without a trace of any other tone. The light green distinctly shaped leaves bring out this superb crimson colour. For rambling about in the garden and for spots where its flowers can be displayed to full advantage no Rose is more suitable.

— It was a very happy thought which led Mr. C. Turner to name his brilliant hued climbing *Polyantha* Rose *Crimson Rambler*. With all the very profuse blooming habit of the *Polyantha* forms, the variety has the stout running or rambling growth of the *Noisette Lamarque*. So far hardly any other climbing Rose has given to us the rich crimson colour of this. It reminds me very much of a very ancient sort I have seen at Dropmore, but the name I have forgotten—a rich-coloured variety that well needs resuscitating. Those who prefer clusters of bloom to single flowers and deep hues to the common whites and sulphurs or creams will be delighted with *Crimson Rambler*. If climbing Roses could be grown where they were less formally trained, such as over the thatched roofs of sheds or cottages, over old fences or hedges, up amongst the branches of trees—anywhere indeed in a wild state, how glorious would this crimson climbing variety look, especially if intermixed with some of the old climbers, such as *Noisette Multiflora*, *Jaune Desprez* or *Gloire de Dijon* and the later *Cheshunt Hybrid*. Very rough treatment is often meted out to these free and easy climbers when they are closely nailed to walls, or tied up stiffly to poles, or, with equal precision, to rustic or wire arches. They get far too much pruning. Who that has seen some old *Noisette* that has been let alone and has mounted from the cottage porch to the roof, where it literally laughs at pruners, or else has caught hold of the Laurel hedge and from thence climbed up amongst the branches of the overhanging trees, but has then realised far more of the innate or natural capacity of climbing Roses to produce beauty than even a hundred primly pruned and tied plants have anywhere afforded. The *Crimson Rambler* should help to popularise semi-wild Rose planting.—A. D.

— This is a splendid addition to our hardy Roses. It was shown in beautiful condition at the meeting of the R.H.S. last week, at the Crystal Palace, and Earl's Court. For grouping or massing it will be splendid, its brilliant colour being just what is wanted in the kept grounds, whilst for a wall or building it will be a grand acquisition. Not only on account of its rich crimson colour will

it be welcome, but for its freedom of growth and its free and continuous blooming qualities. In pots it is charming and equally free flowering. The cut blooms of the *Polyantha* Rose, resembling a well-grown *Pelargonium*, have a charming effect and will no doubt be largely used for table decoration. It is stated to be very hardy and should make a grand edging plant in the Rose garden, and for pillar or trellis-work it will be much appreciated.

—G. WYTHES.

Hanging labels on Roses, &c.—Zinc labels hung on small twigs or branches by copper or lead wires often seem to have the effect of killing the part of the plants on which they hang. This is particularly noticeable on the more delicate shoots of *Tea* Roses. No doubt galvanic action is set up in misty or wet weather between the zinc label and the lead or copper wire on which it hangs. In fact, lead wires are very often found to be corroded through in a mysterious way. Whether galvanic action would affect plants or not is an open question. The chafing of the wires may wear through delicate bark and thus expose the pith, &c., to the action of frosts, and this may be the cause of the perishing of the twigs or branches, but of the fact there can be no doubt. If so, ground labels seem preferable.—J. I. R.

ROSES AT THE DRILL HALL.

THERE were a few very good Roses at the meeting on May 9, some coming from Mr. F. Cant, of Colchester, Mr. G. Mount, of Canterbury, and from Messrs. W. Paul and Son, of Waltham Cross. The first of these was awarded a silver Banksian medal and staged a grand lot of blooms, the best of which were *Mme. de Watteville*, *Ethel Brownlow*, *Rubens*, *Marie van Houtte*, *Mme. Lambard*, *Innocente Pirola*, *Edith Gifford*, *Ernest Metz*, *Cleopatra*, *The Bride*, *Catherine Mermet*, *Francisca Kruger* and *Mme. Cusin*. All of these were really excellent examples of their varieties, and drew much attraction. Good as these Roses were, Mr. H. Cannell, of Swanley, showed me a bloom of a double white *Begonia* that far surpassed them in purity of colour, while it was equally as large and of perfect form. Mr. Mount has some grand examples of *Teas* and Hybrid Perpetuals, foremost among them being *General Jacqueminot*, *Maréchal Niel*, *Mrs. J. Laing*, *Jean Ducher*, *Catherine Mermet*, *La France*, *Baroness Rothschild*, *The Bride*, *Ethel Brownlow*, *Innocente Pirola* and *Duke of Edinburgh*. But the most interesting lot of Roses came from Waltham Cross. This consisted of a group of new Roses and some cut specimens. One can form a much more reliable opinion of a new Rose when seen on the plant than as a cut flower only. The plants consisted of *H.P. Crimson Queen*, a very bright-coloured Rose of the *Senateur Vaisse* class, larger and not quite so well formed; still, it is a very taking Rose and quite distinct. *H.P. Spenser* was also shown in good form, and confirms what I wrote of it last summer, when I said that neither at the Crystal Palace nor Chester was it shown in its best form. Here it was even better than at the Temple show of last spring. It is really a sterling novelty and should be in every collection, especially for pot culture. *Moss Zenobia* was also good, but it is too double and globular in form to fit my ideal in a *Moss* Rose. *H.T. Danmark* and *H.T. Duchess of Albany* are two more of the *La France* type, which Mr. Paul has already added to. *Clio*, described as a Hybrid Perpetual, seemed to me to be much more of a Hybrid *Tea* Rose. It is a grand variety, and I do not think in commerce yet. It reminds me of a combination of *La France*, *Viscountess Folkestone*, and *Duchesse de Vallombrosa*. There was one exceptionally good flower, most of the others being somewhat thin, but all were large and had evidently possessed the grand shape of the fine bloom already noticed. I consider *Clio* one of the finest new Roses we have seen for some time.

Amongst the cut blooms the following were shown: *Medea*, a beautiful pale lemon-coloured Rose; *Corinna* (recently figured in *THE GARDEN*), very pretty, and if a good grower will make a

favourite garden Rose; Gustave Piganeau, Salamander and Ulrich Brunner. The last was a splendid example, very large and bright. A silver-gilt medal was awarded this group. I was disappointed in not seeing Princess May, shown so well by Mr. Paul at the Temple last year. It is a sweet salmon and flesh colour, quite distinct, and one of the handsomest-foliaged Roses I have seen.

R.

WALL ROSES.

THESE are looking better than I have ever seen them, and we are now almost certain of an excellent season as far as they go. L'Idéal, one of the sweetest of all Roses, is particularly showy and full of flower. This grand Noisette is unique and thoroughly distinct, and if bound down to one Rose for a wall, I think I should give it the preference. Climbing Niphetos is also looking much better than last year. Like the normal variety, this grand white Rose is rather delicate, and suffers much from late spring frosts. The young buds drop easily, and the tips of soft growth are apt to turn black upon the least check. Owing to the long spell of dry weather, Roses on walls will need attention in the way of copious root waterings. Half measures in this respect are quite useless—are, in fact, injurious. A dash of some stimulant in the water after the first portion has been applied will be of great benefit. Where the soil is so dry, as it is in most districts at present, it is not well to give liquid manure at once, it being much safer to first moisten the soil. It is also an excellent plan to give Roses on walls a good syringing with soft water during such dry weather; it not only brings on the bloom rapidly, but it keeps the growth free from insect pests of all kinds. These are much more prevalent than usual at this time of year, and will demand immediate attention. Soft water, used freely and with a little more vigour than is usually put behind the syringe, will be found almost as effectual as the majority of insecticides. The moisture relieves the foliage and the pores of the leaves are kept open, and it acts in the same beneficial manner as damping down the walls and walks of a Rose house, a process which I have frequently recommended in these pages. The prospects of a good Tea Rose show at the Drill Hall in June next are now very promising, and it would seem that a rare treat is in store for lovers of this charming section. No flowers are more chaste in colour or more delicate in the blending of one soft shade into another than are the majority of the Teas and Noisettes, and few have been so much improved of late years. The strong-growing shoots of climbing Teas and Noisettes will need securing. Do not tack these to the wall too firmly. A slight support, allowing them to gently sway in the air, will tend to a much better development of their growth, and upon this the next year's crop entirely depends.

R.

Tea Rose Mme. Bravy or alba rosea.—If this is an old kind, we cannot afford to despise it, and I am reminded of its beauty in a pleasing way through the receipt of a fine flower sent for naming by a gardener who picked up a shoot in a neighbouring garden, struck it, and he has had a good plant in a pot for several years. The petals are rather thin, and in a wet time it does not make much display out of doors; but otherwise it is a grand Rose, and I should say excellent for pots. The flowers, which droop, are large and full, well formed, almost white, but with a flesh-pink centre.

—A. H.

Rose Harrison's Yellow.—Among the early blooming Roses, this, as might be expected, makes a rich glow of colour, the rich hued buds and paler blooms clustering all along the shoots. There are so many of these lovely early Roses which need no special care and culture, that the marvel is that they are not more often seen. Harrison's Yellow and the Scotch Yellow are perfectly charming on sunny banks, where the better or rather choicer Roses would have no chance at all. They should

be regarded as ordinary flowering shrubs, for once planted they are best left alone beyond such little attention as the thinning out of old weak wood. Anything like severe annual pruning should be avoided, as it means the destruction of parts of their great display of bloom.

Rose Emilie Dupuy.—Gloire de Dijon is so old and deservedly popular, that the rule is to regard it as a Rose far above its fellows; but if the truth be told, there are several of the Dijon race more free blooming than the original parent, and not in any degree inferior to it, whilst some would declare them superior. One of these is Emilie Dupuy. A coloured plate of it appeared in THE GARDEN of May 10, 1890. Its flowers are large and full, and when half expanded have a delightful rich glow of buff colour internally. Many flowers have been open during the first fortnight, and with the fine weather they have lasted much longer than Roses usually do. It is an old kind, raised by Levet in 1870, but not only is it uncommon in gardens, but the name does not appear in the lists of some of the largest trade growers, who generally have and offer all they think worthy.—A. H.

Rose Gustave Piganeau.—Owing to this variety having won such high honours two years running at the National Rose Society's exhibitions, both metropolitan and provincial, it is certain to be much sought after. I would warn my readers that, good as the blooms undoubtedly are, this variety, like Horace Vernet and a few more, is far from a good grower. I could never recommend it to one who does not require an exhibition bloom. It certainly transplants badly, is of only moderate growth and decidedly tender in constitution. In planting Gustave Piganeau, I would advise that a young grafted plant of this season's working be turned out of a pot. Such a plant will grow away at once and become established during the coming summer. I tried a few in this way last season and they are much better now than those transplanted in the ordinary way.—R.

PREPARING FOR EXHIBITION.

WHILE fully aware that some of our most enthusiastic rosarians are quite against growing for exhibition, a few notes on the preparation for the coming campaign may not be out of place. Boxes need overhauling and repairing. Few, except those who travel the country with Roses for exhibition, are aware how much the boxes get injured, or how quickly they look shabby. A clean box, fresh verdant Moss, clearly written name cards, and a general neatness and finish throughout will often turn the tables when competition is close. Indeed, I believe a few points are supposed by the N.R. Society to be allowed for these. Now, as this is one of the ends we can all obtain, whether we are good growers of Roses or not, I would advise that no time be lost in looking over and preparing. Personally, I am much more fond of a loose and badly shaped Rose of the sweet Socrates class than of the formal and perfect shape aimed at by the exhibitor. Grand as such blooms are, they do not fit in so well for vases or any other decorations. But if one is going in for show blooms, a few necessary details must be attended to at once. Many of our finest show Roses are of little service for such an end unless grown especially with that object. Mme. Cusin, Mme. de Watteville, Ethel Brownlow, Anna Ollivier, Rubens, and others which produce flower-buds very freely all need more or less thinning if grand blooms are to be the result. The earlier you can pick out the side buds and the fewer blooms you have on the plant, the better the remaining flowers will come.

You will very seldom obtain a really good exhibition bloom of the free-flowering varieties unless you thin out the side buds, and confine your plant to a few flowers. This is one of the chief complaints of many Rose lovers against growing blooms for exhibition, and I am quite at one with them on the point. We often destroy a variety of its chief characteristics in its natural state simply to obtain a few extra fine flowers. For the more

ordinary purposes of cut flowers and garden decoration, naturally grown trusses are much more useful and showy. Roses for show need much higher cultivation and far more attention than the average amateur can afford them. Liquid manure, as well as heavy and unpleasant surface-dressings of manure are necessary. A friend of mine likens a neighbour's Rose garden to a cow yard, and declares he has no pleasure whatever in looking over the same. There is certainly much to be said against growing for exhibition, but, on the other hand, a few extra good blooms are more pleasing and satisfactory to some growers.

R.

Among the Roses.—A season such as the present one has effects altogether in opposition to those of average years. Everything is early, and it is amusing to read from the pen of "D. T. F." that whilst Roses in hot borders and on walls have responded to the extra heat, in the open beds and borders they have followed the calendar rather than the season. It seemed so to me at first, but the reason was not far to seek. The experience of a number of years has enabled us to fix a date when the all-important detail of pruning may be performed with safety, and no doubt many dwarf Roses, especially Teas, have been pruned little more than a month. After the young shoots had burst, however, it was impossible not to observe the rapid growth of wood and development of bud, and to contrast these with those of other years with their sundry and manifold checks. Have we not often looked with special favour upon those Roses that have hastened, as it were, to avert a roseless June, and found the majority of them too often among the single or semi-double kinds? This year Rosa acicularis has given an abundant bloom in April; the Japan Rose, many other species, and the Sweet Brier are all in flower before the middle of May, and on May 15, I cut from plants in the open beds buds of Safrano, Pauline Labonte, W. A. Richardson, Mme. Berard, and Gloire de Dijon. Many other kinds are far advanced, and as the season proceeds we shall find everything at variance with our calendars, for no check short of something absolutely disastrous will now materially stop their rapid advance towards blooming. Never before have we had such a feast of Lamarque in the month of May, and it is worthy of note as regards the influence of hot dry weather upon the endurance of the blooms. I do not remember to have ever seen them hang so long upon the plants. Some flowers that were opening in the last days of April remained upon the plants full blown, but fresh, in the middle of May. But the Roses, like everything else, would be better for a shower if only to clean them. In our moisture-holding soil they have not suffered at the root, but that pest of fine dry weather when shoots are young and juicy—the green-fly—is very much in evidence.—A. H.

SHORT NOTES.—ROSES.

Rose Duchesse d'Auerstadt, belonging to the Gloire de Dijon class, is a free-growing variety. The flowers are of a paler yellow than in the case of Henriette de Beauveau, the bud having a slight tint of mauve.

Rose Bardou Job (Nabennand, 1887) is one of the new semi-double Roses that have come into great favour of late. It is a Hybrid Tea, very distinct and hardy, a good grower and of a bright and almost glowing crimson shade, very sweetly scented.

Rose Henriette de Beauveau is now very good on a wall with me. It is a very vigorous grower of the Gloire de Dijon class, free-flowering, generally produced singly and of a bright yellow colour. It was the last Rose introduced by M. Lacharme.—R.

Rose Lady Henry Grosvenor (Bennett, 1892) is by far the best of the newer Hybrid Teas. It is of the same style of growth as Augustine Guinoisseau, exceptionally free-flowering, imbricated form; colour bluish-white, with a delicate peach shading. Altogether a grand Rose and a fine addition to this class.

HARDY FLOWERING PLANTS AND SHRUBS IN SMALL GARDENS.

The former are at times, I think, frequently overlooked. Just now the prevailing thought with many is that of filling the beds and borders for the summer months, and that, too, with tender plants that will only last in beauty for a short period. The occupation of flower beds and borders in small gardens with several plants of any individual kind seems to me to be a waste of the room. For instance, a blaze of scarlet or pink *Geranium* will make a considerable show, but this glare, methinks, cannot be really called beautiful. I would in a small garden infinitely prefer variety to a mass of any one kind merely to obtain a gay display. I consider that the planting of tender plants in our gardens has been carried much too far, and that to the exclusion frequently of well-proven hardy flowers. What I would aim at more is a succession of flowers from the appearance of the Snowdrop and Crocus till the last of the *Chrysanthemums* has been cut off by the autumn frosts. For instance, what a variety, and that most beautiful, too, there is now to be found amongst the Daffodils with a season of no mean length. Then there are the various kinds of Iris, which, too, have a most prolonged season, being plants of comparatively easy culture. Another flower, of modest pretensions, it is true, is the Pansy, which is in flower some time before the spring frosts have ceased to cause us any trouble. For flowering later on there are the herbaceous Phloxes, the herbaceous Sun-

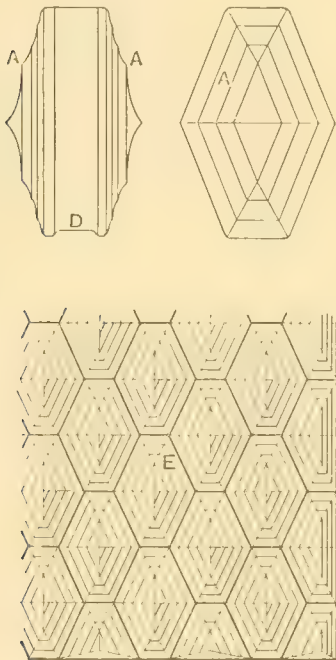


Fig. No. 2.

Lozenge-shaped glass bricks with straight channels.

flowers, with their nearly allied neighbours, the Rudbeckias and *Harpalum rigidum*; whilst for the late autumn there are the Michaelmas Daisies, the late kinds of *Pyrethrum* and the *Chrysanthemums*. The season of the latter popular flower is now considerably prolonged, the earliest with me showing for flower in June. Sufficient attention is not often given to the large family of hardy annuals; these also afford a wide range of succession at flowering; Sweet Peas, for instance, *Nemophila insignis*,

the Scabious, the Poppies (both annual and perennial), the *Coreopsis* and the old-fashioned plants of cottage gardens, the Stock, the *Mignonette*, and *Love-lies-bleeding*, with climbing annuals, as *Tropaeolum canariense* and others. Carnations and Pinks claim our notice. The former has during the past winter been severely punished in places most exposed. I am inclined to think that it is not advisable to risk the stock of these handsome flowers altogether out of doors. I would at least have some young plants in cold frames as a safeguard against any loss to a serious extent. Pinks are hardier and do not give so much trouble, save that the plants themselves oftentimes afford a refuge to slugs and snails. Of hardy flowering evergreen shrubs the *Rhododendron* is one of the finest, but in suburban gardens it does not always thrive well. I find one of the most reliable to be *R. Everestianum*, a form of *R. catawbiense*, which is hardy, grows well, and flowers profusely when afforded a fair amount of attention. The *Kalmia*, i.e., *K. latifolia*, and *Andromeda floribunda* are both failures within the fog radius; they may live in the most favoured positions, but rarely flower well. Of the deciduous flowering shrubs there is a good choice of the Azaleas; the old *pontica* is still one of the best; the varieties of *A. mollis* flower rather too soon in the open; hence oftentimes they are cut off by spring frosts.

Berberis Aquifolium (*Mahonia*) is an excellent evergreen, flowering freely, with numerous clusters of blue-black berries afterwards; it also provides very useful foliage of a bronzy shade or dark green with age for arranging with cut flowers. The *Magnolias* are fine flowering shrubs, but in small gardens I would prefer to grow them against a wall. The Exmouth variety of *M. grandiflora* and the Yulan, or *M. conspicua*, are two of the best, the former an evergreen, the latter being deciduous. The *Veronicas* are too tender to be relied upon in average gardens. Of other flowering plants of a deciduous character note should be taken of *Weigela rosea*, *Cercis siliquastrum* (the Judas Tree), *Chimonanthus fragrans*, which although a shrub should be grown against a wall, so as to protect its flowers from the frost. *Pyrus japonica* (an old plant) should be more grown; the several varieties of *Pyrus malus* (the Dartmouth Crab), *P. prunifolia* (the Siberian Crab), and *P. sinensis* (the Chinese Crab) all make fine flowering trees of moderate size. The shrubby *Spiraeas* supply us with several beautiful objects when in flower; *S. Lindleyana* and *S. arifolia* are two of the best. Of flowering climbing plants the Clematises are too well known to require any recommendation; one does not, however, see so much of *Jasminum nudiflorum* (the winter-flowering Jasmine). The climbing vars. of Honeysuckle are also worthy of more consideration. Upon a wall with a north or east aspect *Crataegus Pyracantha* should have a place. For a west wall *Escallonia macrantha* will thrive and flower well; being an evergreen with glossy green leaves, it looks well when not in bloom. *Garrya elliptica* with its catkin-like inflorescences in the early spring is an attractive feature. Of climbing plants grown for the sake of their foliage, note should be made of *Ampelopsis Veitchi*, and of the smaller-leaved *Ivies* in preference to our old friend the Irish Ivy,

which if allowed scope will soon occupy too much space in a small garden to the exclusion of better things, save when it is needed for a screen. *Azara microphylla* makes a beautiful wall plant with its minute Coton-easter-like foliage. Another plant, *Euonymus radicans variegatus*, which when trailing upon the ground, as it is usually seen growing, will if trained to a wall develop into quite a different character with leaves three or four times the size. Of evergreen plants besides those named, I would draw attention to *Cerasus rotundifolia* as one of the best types of the common Laurel, whilst the Myrtle-leaved form of the Portugal Laurel is worthy of extended culture. *Aucuba japonica* does not require any recommendation, but I would add that it can be easily increased from layers where the shoots can be pegged down upon the soil. Hollies,

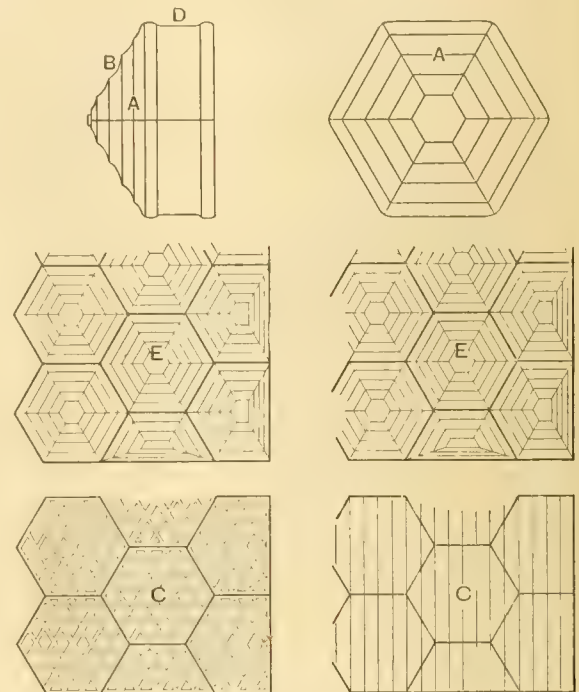
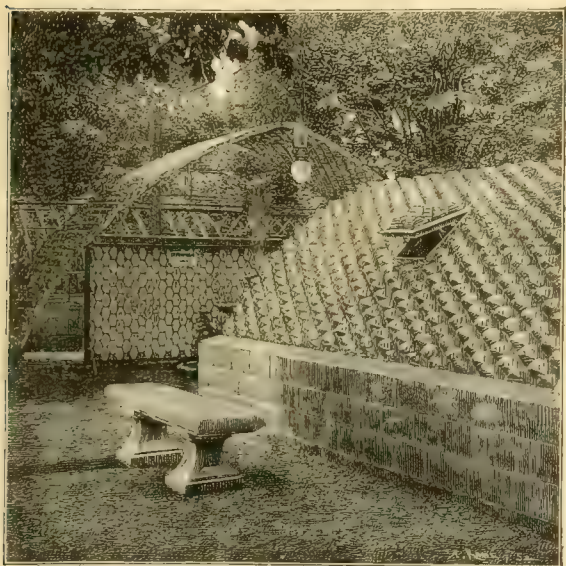


Fig. No. 1.

Hexagonal glass bricks.

too, are grown in large numbers, but if the variegated varieties such as *Golden Queen*, and *Silver Queen* were planted more, we should have something to enliven the more sombre and prevailing dark green of many evergreens. The *Golden Yew* is another valuable shrub which I would plant much more extensively than the common green kind. *Ligustrum japonicum* (the Japanese Privet) is much superior to the common sort. As a dwarf plant of Holly-like character, *Osmanthus ilicifolius* in its various forms requires recommendation, being a reliable shrub. As a plant to occupy any out-of-the-way corner, the Butcher's Broom (*Ruscus aculeatus*) should be grown. Amongst the deciduous shrubs there are several with foliage of an ornamental character that would associate well with the variegated Maple. For instance, the copper Filbert is rarely seen, but its dark metallic-looking foliage is most effective. *Prunus Pissardi* is being more grown, proving itself to be an excellent shrub, bearing cutting well. The golden variegated Dogwood (*Cornus mas*) is a good contrast to the foregoing. The common Snowberry is a weed, so to speak, in many gardens, but *Symphoricarpos vulgaris variegatus* is a most effective

tive plant in the autumn as it assumes its deeper tints. Of conifers, it is necessary to give advice so as to limit the kinds for small suburban gardens to those which are known to succeed at least fairly well. But few of the Fir tree family are really reliable within the range of fog and smoke, as we experience it to our own personal discomfort so often during the winter season. Three of the best are the following, viz., the Austrian Pine (*Pinus austriaca*), with its dense dark green foliage and sturdy growth; the Himalayan Pine (*P. excelsa*), of a much lighter shade of green, with long drooping foliage; and *P. Cembra*, another European species of erect growth, developing into a specimen slowly. These may all be considered as reliable, not suffering so much as the Deodar (*Cedrus Deodara*). Fortunately, *Araucaria imbricata* (the Chili Pine) still holds out and does well where the soil is good (being drained if very wet). The great variability of this fine plant is what detracts most from its



Part of a house glazed with glass bricks, and exhibited at Geneva last year. Engraved for THE GARDEN from a photograph sent by Mons. J. Posth.

popularity. Frequently a plant if purchased whilst still small will develop into an inferior form with a tall growth, but destitute of side branches in sufficient numbers to make it handsome. Of the Cupressus family, no variety surpasses *C. Lawsoniana* in its numerous and diverse forms; it is also a good suburban plant. So are the common, the Virginian and the Chinese Junipers (*J. communis*, *J. virginica*, and *J. chinensis*). For a few years also the popular Japanese conifers, as represented by the *Retinospora*, will thrive well. The essential advantage of these beautiful plants lies in their very compact growth, whilst those with golden tints, as *R. filifera aurea* and *R. obtusa aurea*, are extremely rich in their colouring until the dense fogs mar their brightness in many gardens.

ROSES.

To do this (the queen of flowers) justice, a fuller paper would be none too much. I would, however, enumerate a few which I have found to do well in these localities, viz., La France, the best Rose in its way, profuse in flowering and very hardy; Gloire de Dijon, of course; but Belle Lyonnaise, a paler, and Mme. Berard, a darker form, may also be included; Souvenir

de la Malmaison, one of the oldest, yet still one of the best light Roses for the garden. Of the dark Hybrid Perpetuals I have found Maurice Bernardin one of the best, being of good constitution; of yellows, Celine Forestier is a free-flowering sort, also a good grower. The dwarf-growing Tea-scented kinds are somewhat tender; Marie van Houtte and Catherine Mermet are two of the best. Of the Roses which only flower in the early summer months, Charles Lawson, Coupe d'Hébé and Paul Perras are all to be recommended; these make splendid pillar Roses or for training over arches, where their vigorous growth can have good scope. The climbing Roses, as the varieties of Boursault, the Ayrshire and the Evergreen, are all fine subjects of a free-growing character. Of the miniature kinds, particular note should be taken of Perle d'Or, White Pet, Mignonette and Paquerette, all varieties of the Polyantha Rose; these take but little room, yet flower profusely.

ORNAMENTAL GRASSES AND BAMBOOS.

These are splendid additions to a garden. The following are hardy kinds, viz.: *Bambusa Metake*, a fine plant; *Elymus glaucifolius*, of a distinct glaucous colour; *Eulalia japonica variegata*, a Grass often grown in pots, but quite hardy; *E. japonica zebrina*, another form, but quite distinct. These plants give a tropical appearance, are easily kept within bounds, save the first-named, which is rather disposed to grow strongly in good soil. Two other kinds ought to be included, viz., *Arundo conspicua*, after the style of the Pampas Grass, but flowering earlier, and *Stipa pennata* (the Feather Grass).

FERNS AND ROCKWORK.

A great amount of pleasure as well as beauty is derived from a well-arranged rockery. It may include not only Ferns, which of the harder kinds thrive well and last for several years in good condition, but many flowering plants also may be included, as several of the Saxifrages, the hardy Primulas, and numerous sorts of bulbous

plants. Other good things are the Aubrietias, which make a dense green carpeting, being very profuse in flowering at this season of the year; *Lithospermum prostratum*, a dwarf shrubby plant with brilliant blue flowers, is very hardy; the alpine Phloxes, chiefly varieties of *P. setacea*, are of compact growth and quite a mass of colour when in bloom; the Hepaticas are all worthy of note.

FRUIT TREES IN SMALL GARDENS.

I only allude to these for the sake of the beauty they display whilst in flower. I see no reason whatever why Apples, Pears and Plums should not be planted in our shrubberies. If they yield but a sparse crop even, we have the pleasure of their flowers. In the case of Apples, for instance, there is quite a study in the various shades of colour in different kinds, whilst of Pears the Jargonelle has a truly handsome flower. Standard Morello Cherries are a fine sight when in bloom, with the possibility of a crop of fruit in due course. When growing fruit trees among shrubs, I would not advise any formal style of training at all, planting standards of each kind in preference to any other form of tree as usually sold.

SUBURBAN.

FALCONNIER'S GLASS BRICKS.

THESE bricks, or rather blocks, have been in use for several years in the Canton de Vaud, where M. Falconnier (the patentee) lives, as well as in the neighbouring cantons. They are made of glass, blown, like bottles, hollow, but without either neck or spout, and hermetically closed. Several shapes are in use; the two most approved of are the hexagonal (fig. 1) and the lozenge-shaped ones. Of these latter two kinds are made, the one fig. 2A with straight channels or furrows, and fig. 3A with channels in the shape of rings or circles. Their principal features are their extreme lightness, their transparency, or rather their translucency, for though they let the light pass very freely, the objects which are placed behind can be seen only as shapeless dim shadows. The air they contain not only acts as a very good isolator against humidity, but also as an excellent preventive against frost as well as heat, and, besides, makes these bricks impervious to sound. With these qualities, it is quite evident that they may be used in various ways—for greenhouses, hot-houses, conservatories, verandahs, kiosks, staircases, passages, and for covering courts; in fact, for closing and covering places where light is necessary or desirable, and where an even and regular temperature is an object.

On a visit to the inventor, M. Falconnier, architect at Nyon (Canton de Vaud, Switzerland), I had the opportunity of seeing different

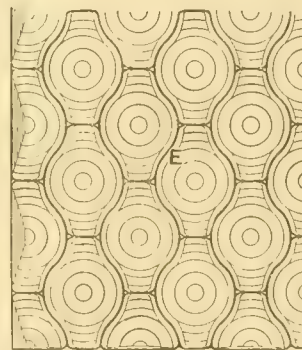
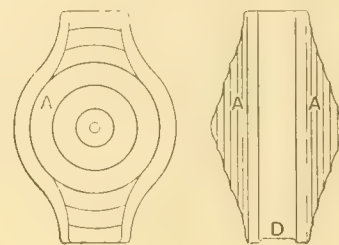


Fig. No. 3.

Lozenge-shaped glass bricks with channels in the shape of rings or circles.

applications of these bricks, some of which I will briefly mention.

1. A propagating house in a florist's garden. The roof forms a vault entirely built with bricks No. 1 without any iron frame at all; the vault is strong, three men can easily stand on the top of it, and shelves to receive plants are fixed inside to an iron ridge-pole. The light is excellent. The upper side of these bricks is convex (fig. 1B) with channels or furrows (fig. 1A), which give to the whole a peculiar aspect and prevent the rays of the sun passing straight

through and hurting the plants. The lower or bottom side of these bricks has also several channels or furrows (fig. 1c) alongside which the condensed vapour of the house (*buie* in French) runs down instead of falling down in drops. A trial made at the Parc de la tête d'or, the public garden at Lyons, has shown the superiority of these bricks to the ordinary glass roofing. A propagating house was divided into two parts, the one roofed with Falconnier's bricks, the other covered with ordinary glass; the same boiler heated both parts. The ordinary glass was protected with straw mats, but the bricks had no protection. During the night the heat fell much more in the former than in the latter; and, on the contrary, when the sun was shining the thermometer was raised much more in the former than in the latter. Thus the result can be summed up as follows: More regularity in the temperature, consequently economy of fuel.

2. A conservatory built at a gentleman's house, and communicating with the parlour and drawing-room; the three walls with Falconnier's bricks (fig. 2), with several windows with ordinary glass panes to have a view of the lake. The plants have thriven very well, and the lady of the house assured me that it was the most agreeable place in the house, and that it had been used the whole winter as a parlour and drawing-room. Several other conservatories, the walls and the roof of which are made of these bricks, have also proved a success.

3. In another villa on the shore of the lake at Bellevue (the back part stands directly on the high road, with just opposite very disorderly-looking farm buildings), a long passage and hall leading on the first floor to the family apartments are entirely closed with Falconnier's bricks, giving full light inside, but hiding the farmyard. The bricks employed are all of the shape of those in fig. 3, but of different colours, which, judiciously combined, give to the whole the appearance as if made of stained window glass.

4. In a stationer's shop the back room is separated into two parts with a No. 2 brick wall, and the paper being piled up alongside this wall, the upper part and the intervening not obstructed wall faces give a very good light projected by the windows in the partition or division which is behind. On my first entering the place I did not notice that I was in a partition without any window at all.

At Lyons, in France, in the factory of Messrs. Dognin and Co. these glass bricks are used to fill out the windows in a very large drying room (50 mètres long and 16 mètres deep) in which the temperature is always maintained between 96° and 100° Fahr., and these gentlemen say:—

We never could find out a loss of heat, and even with a temperature as low as 14° outside we have not noticed that the condensed vapour (*buie* in French) set on these brick windows. The light remains excellent in a room which has a depth of 16 mètres (52½ feet). These glass bricks are much superior to double windows in several respects; conservation of the heat and cheapness; they are and also easily cleaned and kept in repair.

The walls are built and the roofs vaulted by joining one brick to another with cement, or, better, with "chaux lourde." They keep very well together, as they have on each side a deep furrow (figs. 1d, 2d, 3d), thus being inserted and encased in a net-work of cement or "chaux lourde" (figs. 1e, 2e, 3e).

* Chaux lourde, the same as "chaux hydraulique." I cannot find the exact translation. It is not the common quicklime, but the quality which is used generally for making the mortar which is used for building walls, &c., liable to be flooded with water, as this lime becomes harder when under water.

The glass forming these bricks or blocks is rather thick, very strong, and resists a heavy pressure; besides, neither dust nor water can enter; they can be as easily cleaned as any other window glass. Those generally employed for greenhouses (figure 1) are of common glass, not absolutely white, but M. Falconnier manufactures them also in pure white glass. Those for other purposes are made not only in common glass, but also in pure white, green, blue, red, or brown—in fact any colour which may be required. With these, very handsome designs may be made, so as to imitate very nicely stained glass windows.

As mentioned above, these blocks are very solid; however, being of glass we must expect that one may sometimes be broken; in this case the fragments may be taken out and a new block inserted with little trouble. The blocks of common glass are sold at the factory at £1 16s. per 100. The fancy blocks are, of course, a little more expensive. The engraving represents part of a house exhibited last year at the horticultural show in Geneva.

J. POSTH.

ORCHARD AND FRUIT GARDEN.

RED SPIDER ON FRUIT TREES.

It is scarcely possible to exaggerate the ill effects of a bad attack of red spider. During some seasons it is most difficult to contend with under glass, Grape Vines, Peach and Nectarine trees, Melons, Cucumbers and Strawberries being the principal sufferers from its ravages. Strange to relate, there does not appear to be so much red spider as usual as far as the houses are concerned, and that, too, in spite of an exceptionally hot and, in some respects, very trying spring; but the case is very different in the open. Never before do I remember to have seen so many trees overrun by this pest, and in very many instances, unless steps are at once taken to check its ravages, the harm done will not be recovered from this season. Nothing would appear to be perfectly free of red spider, but it is Plums and Gooseberries that are the greatest sufferers hereabouts, Pears on walls with an easterly aspect also being much infested by it. Where the Gooseberry bushes have been neglected, that is to say, present a badly starved appearance, consequent upon being heavily cropped nearly every season and seldom, if ever, manured, an attack of red spider has been quickly followed by the fall of the leaves, and already I have seen numerous instances of the loss of the whole of the leaves, the fruit dropping also as a matter of course. Next season, if these bushes survive till then, the growth will be very feeble and the crop most probably a failure, the injurious effects of a bad attack of red spider being even more marked than in the case of caterpillar devastations. Plums hold out considerably longer, but even the leaves of these fall off wholesale before they have performed their proper functions, and few experienced gardeners need be told how Peach trees behave when overrun by red spider.

Having stated enough to alarm those of my readers who have not fully realised the risks they run in letting matters take their course as far as red spider attacks are concerned, it behoves me to discuss what are the best remedies that can be applied, either by way of a preventive or cure. The favourite remedy with most advisers is a free use of the syringe or garden engine, while if attack takes place under glass, more atmospheric moisture is also considered imperative. Liberal treatment at the roots to accompany these other so-called remedies are so far good, as it is very certain everything which favours a strong top and root growth serves to sustain the affected Vines, trees, or plants in good health in spite of the red spider, must be right. But did anyone yet cure a bad attack of

this tenacious little mite by the aid of clear water alone? I say, no. On the contrary, once well established it is next to impossible to thoroughly get rid of it again that season, at any rate by the aid of clear water alone. It may be washed off the under side of the leaves, only to take refuge and establish itself on the upper side, and if driven from the old leaves it can scarcely be dislodged from the young ones without reducing these to tatters. The first time I tried the plan of growing Cucumbers on the express system, that is to say, without ever opening the ventilators, no matter how hot the weather might be, red spider absolutely revelled in the moist atmosphere constantly maintained and the over-head syringings frequently applied. It increased rapidly, and in size resembled the species to be seen on Ivies in the open air. Clear water as a preventive is right enough, but as a cure it is simply nowhere. Insecticides for mixing with syringing, sponging, or dipping water there are which are fairly effective, but to be certain of these destroying red spider, they must be used strong enough for risks to be run of either the disfigurement or, it may be, lasting injury to the fruit hanging on the trees or plants operated upon. After having tried various insecticides and the clear water cure repeatedly against red spider, I have been obliged to conclude that none of them are either so safe or effective as flowers of sulphur. Nothing is simpler, more easily applied, or much cheaper, and I should strongly advise "D. T. F." (page 356) to give it a good trial in the eastern counties. Not till this season has there been any necessity to apply the sulphur remedy to Gooseberry bushes, and for some unaccountable reason only those under a permanent wire-covered structure were attacked. Rather less than 2 lbs. of sulphur proved ample for completely clearing thirty-six large bushes of red spider, one application only being needed. By the time the Gooseberries are wanted for use there will be quite free of sulphur, but if wanted for use in a green state or before rains fell, they would be rinsed in clear water. Three of the bushes were also infested by caterpillars, and these, in common with the red spider, disappeared in the course of a week, though I do not positively assert that they were not preyed upon by either small birds or some of the lower order of wasps. These latter are really good friends to fruit growers, as I have seen them this season carrying away caterpillars from Pear trees, while it is, or ought to be, a well-known fact that the larger species of wasps, or those that are only too plentiful when the fruit is ripe, are great enemies to red spider. There is nothing to prevent the application of flowers of sulphur to any fruit trees infested by red spider other than the hairy fruited Peaches and Apricots, and even these may with advantage have their leaves well coated with it after the crops are cleared off, thereby saving any further labour in the shape of syringing.

I need hardly add that flower of sulphur does not mix readily with water or liquid preparations of any kind, but for the purpose of destroying red spider all that is necessary is to well squeeze a good handful through a coarse muslin or scrim canvas bag into a three-gallon can of water. It is then ready for distributing with an ordinary syringe, the operator striving to wet both sides of all the leaves and branches so as to leave a thin coat of sulphur on them. If it does not stick on well or a heavy rain washes it off before there has been time for it to kill or drive away the spider, repeat the dose. Some authorities who recognise the value of sulphur as an insecticide seem to think it ought to be used in combination with a weak solution of soft soap, but I fail to see any necessity for this extra trouble.

W. I.

Red Currant Raby Castle.—This, although perhaps not quite so heavy a cropper as some kinds, is very suitable for planting in quantity in the orchard, the bush being very hardy, standing up well, requiring little or no pruning, and where given room, growing to a large size. This Currant can be

relied on for a crop every year on land where the Black Currant frequently fails through drought. As a rule, Red Currants cannot be considered so profitable as Black, the price being lower and birds more destructive to the ripe fruit.—E. W. B.

BURNING OF VINE FOLIAGE.

SPEAKING in its proper sense, the burning, or rather scalding, of the foliage of Vines is the outcome of mismanagement, although in some instances this statement may be modified, as the structural arrangement of the vineries is answerable for much of the injury which accrues. The careful cultivator, however, when such injury can be traced to this cause, takes good care that anything which may be done to prevent it is attended to. When many of the main leaves are injured by burning, the fruit is deprived of much of its support; hence the Grapes do not colour properly, or, in gardeners' parlance, are "badly finished." Although the present season is very clear and sunny so far, yet this must not be looked upon as a reason that the foliage should be disfigured more so than in other seasons when the days are less cloudy, as this should certainly obviate the evil instead of adding to it. There is only one exception, and that is when the roof is glazed with common glass. In this case, let the structure be ventilated ever so carefully, it will not stop burning. I refer particularly to those instances where the glass is full more or less of air bubbles. In these cases the surest cure, except, of course, reglazing the structure with better quality glass, is to colour over each bubble with some white lead thinned down with a little turpentine. The presence of air bubbles is soon perceived. If they are situated so that the sun's rays, if powerful enough at that time, strike the foliage obliquely, a "streak of burning" is seen for 2 feet or 3 feet. If one is situated so that it strikes directly on to a lateral, that portion will collapse, and it is the same with a solitary leaf if in a line with the bubble.

Other causes of burning are caused through the ventilation not being attended to properly. With this as the reason, it generally occurs after the berries are thinned and during the exhausting process of stoning. All this time there is a great strain upon the Vines, especially upon the fruit-bearing laterals, as if any burning does occur it is generally the fruit-bearing laterals which receive the injury, and which can ill afford to lose one leaf, let alone the majority. A variety that appears to suffer from this cause is the Muscat of Alexandria, that is, if the ventilation is not carefully attended to or if the glass is common. In this variety also a thin moisture settles upon the foliage at night-time, and if this should not be dissipated early on bright and sunny mornings by ventilation carefully applied, or before the sun raises the temperature, scalding or burning will ensue. All the vineries in these gardens are lean-to with a full southerly exposure, and I find with the Muscat house that a slight shade applied during the hottest months of the year is highly beneficial. Not a thick shade, but merely a little whitening syringed over the roof. In all vineries early and careful ventilation is what is needed, and this put on by degrees. Allowing the temperature to rise suddenly without any or little ventilation being on and then putting on a great amount will surely result in burnt foliage through the rapid evaporation of moisture. Y. A. H.

Late Apples.—I was pleased to see "A. D.'s" note (p. 381) on late-kept Apples, as it is a subject requiring some attention. As pointed out by "A. D.," it is useless to give a special award, or, indeed, an award of any kind to fruit so deficient in flavour, no matter how late in the season. Concerning the fruit staged at the Temple show, I have had an opportunity on several occasions of testing the flavour of this and have been surprised at its good flavour. I think the large grower must have better means of storage than the private grower, as the latter often fails to keep fruit late. I am

aware the large grower has a much larger number to select from, but I do not think it is mere numbers so much as thorough ripening and cold storage. —S. H.

ALEXANDER AND EARLY BEATRICE PEACHES.

BOTH these early Peaches, more particularly the former, on account of its early bud-dropping propensities, have lately been subject to rather severe criticism at the hands of several growers. My object in this note is to point out the early ripening of the latter in comparison with the former. Alexander, I know, is looked upon by many gardeners as one of the earliest of Peaches, and which it undoubtedly is, but the Early Beatrice, at least in my case, is quite as early, and in point of size and colour almost or quite equal. In the earliest fruits flavour has not the same significance as in many of the midseason and late Peaches, and the same rule holds good in the case of most fruits. I have gathered the crop from two trees of the sorts under notice, which in point of character might pass very well as one variety, and a younger tree of Waterloo growing on the front trellis ripened its fruit at the same time. Mr. Wythes condemns the Early Beatrice on the score of quality and indifferent constitution, neither of which can be found fault with here. It certainly is not small compared with Waterloo, Alexander, and Early Rivers. Alexander, so prone to bud-dropping with the majority of growers, gives but very little trouble in that respect here, and my predecessor evidently had a favourable opinion of it, or he certainly would not have given up so much space to it in the early as well as the second early houses. In the latter case severe thinning had to be carried out, the fruits being so thickly set. As the fruits are gathered, pruning of the older or fruiting wood is carried out, laying in the current growths so as to get this well developed and fully matured, at the same time keeping the house fully ventilated for the remainder of the season. Water, too, will be given with the same frequency as when the crop was advancing, both points of cultural detail of the utmost importance in gaining a good set another year.

I am not prepared to say that neglect of this routine contributes to the common failure of the Alexander Peach to retain its buds in early winter or spring, but there is a possibility of its being true in some instances. Our Peach houses are large, lofty, and very light, and having a southern aspect, the wood of the trees has every chance to become thoroughly ripened. The contention of some writers, however, is that bud-dropping of the Alexander Peach may be traced to an over-ripened state of its wood and buds. Free and continuous ventilation and an unstinted supply of root moisture are two points which, if fully carried out, will reduce this failing materially, but a freedom from red spider must be ensured also by oft-repeated syringings, or the remedy will neither be certain nor constant. W. STRUGNELL.

Road Ashton Gardens.

VINE LEAVES SCALDED.

COULD you kindly tell me what is wrong with the enclosed Vine leaf? This year the Vines have grown well and there is a good crop of Grapes, but several of the Vine leaves have gone like the one sent.—F. G.

* * * To all appearance this is a bad case of scalding. The leaves received are somewhat thin, and the smaller one seems to have been pressing rather hard against the glass at some time. Far too many Vines are grown much closer up to the glass than is good for them. There ought always to be a clear space between the leaves and the glass, and instead of the wires being strained from 6 inches to 12 inches from the latter (10 inches being perhaps a fair average of what is to be met with) they ought to be not less than 15 inches, and where there is sufficient head room in the

house, 18 inches from the glass should be the distance. When the leaves are close up to the glass, or press against it, which is far worse, a few minutes' neglect in ventilating may, and often does, mean the ruin of many of them. Especially is this the case when the temperature during the night has been low, and not sufficient fire-heat employed to prevent stagnation of the atmosphere. Leaves in a dry state do not scald so quickly as those that are wet, whether the moisture be due to syringing, exudation, or condensation. The sudden rise of heat from, say, about 60° to nearer 100°—and this may take place close up to the roof without those in charge being aware how hot the house has become where the leaves are—sometimes results in scalding, or if the leaves press against the glass, they are literally parboiled. Some houses, owing to their construction, more especially as regards the quality of glass used and the close fit of same, require to be ventilated earlier and more carefully than others, and the position of the vinery has also to be taken into consideration. One famous vinery in this district has to be opened directly the sun shines on it in the morning, this meaning 5 o'clock sometimes, and others ought also to be opened earlier than they often are, the aim being to prevent an injuriously sudden rise in the temperature and the loss of several or many leaves by burning consequent upon excessive evaporation. I should advise F. Gower, if he has not previously done so, to keep a little heat in the hot-water pipes during the night, and if a chink of top air be put on the last thing at night, the requisite buoyancy of atmosphere will be maintained and moisture be prevented from collecting on the leaves. On bright mornings more air should be given before the heat rises to 75° and be gradually increased. When air is given thus early, sudden rushes of cold air are guarded against, and at no time need the ventilators be opened so widely as would be necessary when late morning ventilation is resorted to. This treatment would probably be followed by a thickening of the leaves and a general improvement in the health of the Vines.—W. I.

Three good Strawberries.—A gentleman the other day asked me to name for him the best three varieties of Strawberries. I said I have not yet seen the fruit of the three Gunton Park varieties, so that I cannot say anything about them. But my three favourite kinds are British Queen, Frogmore Prolific, and President. For flavour they are a long distance in advance of all the modern varieties; as croppers, they are not so prolific. Only President, British Queen and Frogmore appear to me to throw up just as many flowers as they can support, and all the fruits ripen, large and small. If I wanted another I should name Keens' Seedling. I do not grow President or Keens' Seedling for the simple reason they are never asked for.—R. GILBERT, *Burghley.*

Protecting Gooseberry buds.—Like "E. W. B.," I relied upon spraying my trees with liquid lime. I also tried a solution of quassia and sprayed a few trees with soft soap and clay mixed, but all failed. The quassia answered best. Lime and other mixtures seem useless, for as soon as the buds are on the move the buds burst open, the centre portion or part containing the bloom is plucked out, and the shell which was dressed is left. I find the birds fight shy of quassia extract, and if used with care there is no injury to fruit or foliage. For Cherries it is a safe remedy, but with large or spreading Gooseberry trees it is difficult to reach all parts of the trees, and, as is well known, some of the choicest fruits grow on the most ungainly trees. Quassia is of little use in damp, wet weather. In future I shall use nets and cover the trees. I am aware it costs more, but it is useless to grow this fruit and allow it to be devoured so early in the year. Old netting that has done good service elsewhere may often be used. If a permanent protection can be given in the shape of small-mesh wire netting nailed on wooden supports, it would in time repay for the cost and is thoroughly efficient.—S. H.

The Gooseberry caterpillar.—It is but few growers, perhaps, who are not troubled with this very destructive pest, and this season would seem more favourable than usual to its attacks from the long-standing drought which we have experienced, and which at the time of writing seems likely to continue. A remedy is easily enough found in hellebore powder applied in a dry or diluted state, but where the berries are gathered in a green state some caution is advisable in making sure they are free from such a poisonous substance before they are used. It involves a considerable amount of labour in the case of large growers, and adds considerably, too, to the expenses of the garden when it has to be practised on a large scale. In former years the trees in these gardens have been badly stripped of their leaves, and at one time it certainly appeared a like catastrophe would happen unless remedial measures were adopted. Fortunately, in our case the great friend of the Gooseberry grower—the cuckoo—came to the rescue, and trees that only a short time since were becoming badly infested, now to all appearance are quite free. The visits from these birds have been frequent, particularly in the evening, and much anxiety and labour have been spared us in consequence. The cuckoo has the reputation for feeding on this pest in gardens, but this is the first experience I have had of such a complete clearance by this bird. A pound of the hellebore powder mixed in a 3-gallon can filled with water as hot as can be used comfortably will be found a very good strength as a dressing without the aid of soap or any other substance in mixture. A jet syringe or a garden engine, the former being perhaps the most convenient, because more easily conveyed among the infested bushes, is the best. It must be kept well stirred to maintain a thorough suspension of the moistened powder, or it will sink to the bottom. If every alternate syringe is forcibly injected into the vessel, the other sprayed over and under the branches, the disappearance of the caterpillars may be relied upon in a short time. What is the experience of other readers respecting the visits from the cuckoo for caterpillars?—W. STRUGNELL.

— I have seen it stated that birds will not touch the hairy Gooseberry caterpillar. As a rule, we cannot reckon on the birds keeping them down either in the garden or orchard. Bushes once attacked, especially in a dry, hot time, give us a lot of trouble, the only sure cure being a dusting with hellebore powder, and that, when the berries are ready for picking, and in the absence of showers to wash off the poisonous powder, is scarcely to be recommended. This season, however, owing, I presume, to scarcity of slugs and worms, the birds have done us great service. Scores of bushes may be noticed where the caterpillars have been cleared off before doing any material damage. We were quite expecting a serious attack of this pest, which is so apt to strip the bushes when suffering from drought, and when the leaves are particularly necessary for shade and to the swelling of the berries, and it is a great relief to be assisted in this unusual manner by our feathered friends. Red spider, another effect of the drought, has been very prevalent this spring, and bushes left alone will in some instances be killed outright. Two or three dressings of paraffin, two tablespoonfuls to a gallon of water, applied with the syringe, will destroy the spider, and a good watering would also be of advantage. It is in a season like the present that mulching is of value. Amongst some of the bushes, instead of the hoe, the spade was used, and the soil turned lightly over and earthed up round the stem. These bushes are as yet unaffected by the drought, which is telling on some of the heavily-laden bushes not mulched in any way, the berries not getting sufficient moisture to swell up to regulation size.—E. W. BEAVEN, *Holmer*.

Auricula "Dusty Miller."—I think that I can tell "West Highlands" something about the Auricula which he writes of in a recent number. I have just taken a new place in Cross Avenue,

Blackrock, Co. Dublin. The time I first saw it, the beginning of last April, there was a perfect blaze of yellow bloom in some of the borders, caused by the flowering of about 1000 plants. They grow in large tufts of about fifteen to twenty flowering crowns to each tuft, and sunshine or shade seems to make no difference to them. The flower is a vivid yellow of good size, and the perfume, which is very strong, is like that of Cowslips. I can only compare the effect of the bloom in a mass to that of the same quantity of free-flowering Violas, with the additional advantage of the foliage, which is covered with white dust. I enclose a piece to show habit of leaf, but fear the dust will disappear in transit. If "West Highlands" thinks this is what he wants, I can let him have any quantity at a moderate rate.—IRISH-MAN.

GARDEN FLORA.

PLATE 911.

THUNBERGIAS.

(WITH A COLOURED PLATE OF *T. GRANDIFLORA*.)

OF the thirty species of *Thunbergia* known, that represented in the plate this week is certainly the most useful in the garden. It grows freely and vigorously, blooms all through the summer, and its large attractive flowers are ornamental and fragrant. The best of the *Thunbergias* are natives of India, albeit some of the African species are not wanting in usefulness. Included in the genus now are *Hexacentris* and *Meyenia*, each of which comprises two or three species, viz., *H. mysorensis*, a vigorous climber with long pendent loose racemes of large yellow and red flowers; *H. coccinea*, equally large and attractive, with red flowers, which, however, are rarely developed under cultivation. *M. erecta* is the handsome little deciduous stove shrub with tubular purple-blue and yellow flowers, known to every cultivator of stove plants; the variety *alba* has white flowers with a yellow throat; *M. affinis* is like *M. erecta*, but has long scandent shoots, larger leaves, and flowers twice as large; *M. Vogeliana* is a stiffer, erect growing shrub, with large ovate leaves and blue flowers. Then there is the herbaceous-stemmed *T. natalensis*, which has a tuberous rootstock, and produces annually stems a yard or so high with oblong green leaves and axillary blue flowers. All these are more or less known in English gardens, and they are worth a place in all good collections of stove plants.

T. GRANDIFLORA was introduced into English gardens in 1820. It is a native of various parts of India, and is also found in China. It is a favourite garden plant in the tropics, being commonly used for covering verandahs, fences, clothing tree trunks, &c., purposes for which its free Ivy-like habit admirably fits it. I have seen pictures of it festooning trees in tropical botanic gardens, and I have seen it festooning the roof and pillars of the large Palm house at Kew, where it flowers freely. It is also grown on the roof of the tall house in which the Victoria Regia is cultivated. An autumn-struck cutting will, if treated well, grow to a large size if planted out in a bed of rich soil in a warm house in April in a position where it will get plenty of sunshine. The flowers, each 3 inches across, blue, paler in the throat, are developed in somewhat dense short-stalked racemes. There is a pure white-flowered variety of this species in cultivation at Kew. This was introduced from Calcutta two years ago, and is quite as large flowered and as free as the blue one.

T. LAURIFOLIA, figured in THE GARDEN, Vol. XXX. (p. 292), is sometimes mistaken for *T.*

* Drawn for THE GARDEN by Champion Jones in the Royal Gardens, Kew. Lithographed and printed by Guillaume Severeys.

grandiflora. There is not much difference between them, the main one being in the foliage, which is narrower in *T. laurifolia* and less distinctly lobed than in *T. grandiflora*. There is a figure of the former in the *Botanical Magazine*, t. 4985, and in the same publication it is figured a second time at t. 4998 as *T. Harrisii*. For garden purposes these two species are of equal value.

T. FRAGRANS, another common species in India, is undoubtedly a good garden plant. It is a slender climber with obtuse toothed leaves 3 inches long and axillary short-stalked flowers which are $\frac{1}{2}$ inches long, tubular, pure white, and fragrant. This plant was described by the Indian botanist Anderson, from the pure white of its fragrant flowers, as "the most charming of Bengal plants." It must not be confounded with *T. alata*, the pretty little stove annual which is common in cultivation and has orange-yellow flowers with a vinous purple or brown eye. This species is supposed to be a native of India, but according to botanists it is certainly African and has been introduced into India. It may not be generally known that this is a most useful little plant for hanging baskets for the conservatory; if the seeds are sown in baskets of light soil in spring and the shoots allowed to hang all round the basket, they grow to the length of a yard or so and flower most freely.

W. W.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

AUTUMN CAULIFLOWERS.—After the long period of drought rain is now falling copiously, and it is to be hoped that it is general throughout the country. During a period of drought work seems to be lacking, but directly rain falls it seems to come upon us in abundance. Autumn Cauliflowers, directly they are large enough, must be planted out. If an open plot of ground can be spared, the rows should be located at the least 30 inches apart, the plants being allowed the same distance in the rows on strong land, allowing 6 inches less on lighter soils. Cut out rather deep drills for setting the plants in as a means of readily applying water when necessary. Very likely this may only be needed for settling the soil about the roots at planting, but all the same it is always safest to be forearmed in case of necessity. Where thorough force of circumstances the Cauliflowers have to be set out between rows of Potatoes, they should be placed in every alternate row, unless these should be far enough apart to enable their being planted without being smothered up by the Potato tops. The above note has reference to Cauliflowers raised under glass, or rather with the protection of a frame for the time being. In my case these have now been fully exposed for some time. The later batch sown in the open is, of course, not now just ready, but the same remarks are applicable in each case.

ASPARAGUS.—Cutting having commenced abnormally early, this should now stop, as there is a limit even to the enduring powers of Asparagus whatever may be the season. If cutting is kept up any longer, the crowns are sure to be weakened for another season. Other vegetables being scarce should not be any excuse for cutting the Asparagus late. Allow all the stems to come away at once, and do not cut to single stems, or very likely these may grow ahead and prevent others from coming on. To further encourage growth, do not neglect giving the beds in all cases a dressing of some good artificial fertiliser, fortnightly dressings being given in preference to single and heavy dressings. After cutting I apply two dressings, or at the most three, these being given according to the fertility of the beds.

SUCCESSIONAL PEAS.—In all cases these must have a thorough preparation. The site for their reception must also receive consideration, and where there is choice of positions, select that which is the most exposed and on rising ground, as here the Peas are not so apt to suffer from mil-



THEMISTOCIA GRANTII DC.

dew as when in a more confined space. Where the position is low-lying, the rows should be isolated as much as possible, this both economising space and also benefiting the future crop. When the rows are growing close together direct sunshine cannot reach the bottom of the haulm and the rain is kept off the roots. On heavy land and when the ground is in good heart and also well worked, the Peas will succeed well if drills are drawn on the level, but on light soil prepared trenches should be the rule. The depth and width of the trenches after the soil is removed should be 15 inches, the bottom also being well forked over. Into this space spread some good solid manure and burnt refuse, this latter being what Peas have an especial liking for. In sowing on the level, take particular care that the drills are drawn with a flat bottom, as when drawn V-shaped the seeds trickle down and so cause a crowded growth. As regards selection of varieties, there is now ample material to select from, but *Ne Plus Ultra* is still liked by many people, though its great height is against it.

TOMATOES UNDER GLASS.—So far this has been a capital season for Tomatoes under glass, large well-set trusses of fruit being very plentiful. Rapping the stems sharply at midday whilst the pollen is dry is generally sufficient to ensure the flowers setting freely, that is if the surroundings also are favourable. Take particular care that all side shoots from the main-stems are kept rubbed out, as it is these when they are allowed to extend which cause an excess of vigour. Crops well set and which may be growing in pots or restricted borders will now take a little feeding, but this must not be overdone. A little approved fertiliser sprinkled upon the surface at weekly or fortnightly intervals, this being according to the rooting space, whether restricted or otherwise, will be beneficial. Keep the atmosphere buoyant and free, with a little warmth in the pipes at night-time and on dull days.

A. YOUNG.

HARDY FRUITS.

APPLES.—The flowers were strong and well formed as well as extra numerous, and those which opened late have been followed by clusters of fruit, or far more than at one time thought possible. At present these clusters seem disposed to remain intact, though most probably there will eventually be a natural process of thinning. This, however, should be anticipated in all cases where the trees are not large and fully grown fruit is desired. By this time it will be seen which are the soundest, best-formed fruit, and with plenty of these, not more than one should be left in each bunch. Many fruit will most likely be found damaged by caterpillars, and these ought certainly to be removed even if smaller ones have to be left instead. If extra fine fruit are desired—and these are of much the greatest value, selling readily when smaller fruit can scarcely be got rid of at any price—such fine varieties as *Peasgood's Nonsuch*, *Emperor Alexander*, *Warner's King*, *Blenheim Orange*, *Mère de Ménage*, *Pott's Seedling*, and *Lord Derby* may well be thinned to at least 9 inches apart all over the trees, and other show sorts should be nearly or quite as severely thinned. In the case of *Manks Codlin*, *Keswick Codlin*, *Lord Suffield* and *Hawthornden* the first thinning may be light, the clusters only being reduced and cleared of rubbish, the final thinning being deferred till the fruits are large enough for use. Wall trees of any kind, cordons, horizontally-trained bushes and pyramids in the open may well have the young growths on them thinned out somewhat, stopping all reserved, other than the leaders, at the fifth joint. If the trees are as large as desired, the leading or outside growths may also be stopped; but if closely-pruned bushes and pyramids fail to bear satisfactorily, leave all the leading shoots to their full length both now and at the winter pruning; newly-planted trees should be allowed to bear fruit, and any going into their second season must also be lightly cropped, or the chances are they will become badly stunted. All should have a good

mulch of strawy manure and a soaking of water occasionally in dry weather.

CATERPILLARS ON APPLE TREES.—These are far too plentiful in places, while in others birds have done much to rid the trees of them. As far as garden trees are concerned, it is scarcely advisable to resort to spraying with poisonous mixtures, the safer, if more tedious, plan of shaking and picking them off, followed by crushing, being the best way of getting rid of them. Syringing the trees forcibly with soapy water would dislodge a good many, but either caterpillars, or these after they have changed into the pupa state, that cannot be thus got off, owing to being snugly enclosed in the leaves, should be picked off by hand and crushed, the future, as well as the present, being thus thought of. If the trees are large and have to be sprayed over with Paris green—the arsenical insecticide most favoured by market growers—mix this at the rate of 1 oz. to twenty gallons of water. The powder should be first made into paste and it will then readily mix with the water. It should be used in the form of the finest spray possible, the *Eclair* or *Knapsack* pump and other contrivances for the purpose being preferable to the ordinary syringe or garden engine. One application will not be sufficient, but about three at intervals of four or five days ought to quite rid the trees of caterpillars without detriment to the crops. Stunted and very heavily cropped orchard trees stand but a poor chance against attacks of caterpillars, and there are large numbers in some districts quite stripped of foliage.

PEARS.—As far as trees in the open are concerned the crops are very light, but some of the wall trees are heavily laden with clean, well-formed fruit. The latter ought long ere this to have been partially lightened, all the smaller, malformed and damaged fruit being pinched off, and caterpillars also destroyed. The next proceeding should be to complete the thinning out as well as the destruction of what caterpillars escaped the first hunt for them. If the crops are heavy, thin severely, not leaving more than one fruit on each cluster, the small to medium-sized varieties being left 6 inches or rather more apart, while such fine sorts as *Pitmaston Duchess*, *Doyenné du Comice*, *Conseiller de la Cour*, *Van Mons Leon Leclerc*, *Beurré Clairgeau*, *Beurré Bachelier*, *Doyenné Boussoch*, and *General Toddleben* should be left nearer 12 inches apart, the first-named having an extra 3 inches if prize fruits are wanted.

GRAPE VINES.—These, in common with all other hardy fruits, have started early and strongly, bunches also being plentiful. If, therefore, we are favoured with a good average amount of sunshine during the next four months, this ought to be an unusually good year for Grapes, the crops ripening something like they used to do thirty years ago, paying well for the space and attention accorded the Vines. There ought to be no neglect of the few cultural details incidental to open-air Grapes, everything being done to forward the crops as much as possible. If not already done, thin out the laterals at once to about 1 foot apart, reserving those furnished with bunches and best placed for laying in on each side of rods trained uprightly, and on the upper side as well as along the rods where these are horizontally trained. Stop those reserved at the second joint beyond the bunch, that is if there is room for so much foliage. More often than not the rods are too close together to admit of two leaves being reserved beyond the bunch, and it is better to stop at the first leaf beyond or even at the joint producing the bunch rather than to unduly crowd the leaves later on. At or about the flowering period the laterals may safely be tied or nailed back to the walls and rods, and should have the sub-laterals or secondary breaks kept closely pinched out. If there is wall space yet to furnish, lay in leading growths not less than 18 inches apart, and stop these when about 4 feet long. The side shoots on these should be pinched back to the first joint, and the young cane will then swell to a good size and most probably ripen well.

FIGS.—The fruit on these is now swelling fast, and in some cases will require a little attention.

If very plentiful lightly thin out, removing those that are badly placed for swelling properly. Keep the young wood freely thinned out, a few extra stout short-jointed well-ripened shoots producing far more fruit than twice the number grown somewhat close together. The thinly grown wood, whether trained or allowed to grow away from the walls, is also the hardiest. Do not stop any of the reserved shoots.

W. IGGULDEN.

PLANT HOUSES.

CONSERVATORIES.—This department should now be as gay as possible with plenty of material to draw upon to keep it supplied. Increased attention will at the same time be found necessary in many ways. With warm weather and frequently a brisk wind blowing, the plants will dry up quickly. Those that give the most trouble in this respect may very well be covered with Moss upon the surface of the soil, or pans (as Strawberry pans) could be placed under those that are taking the largest supplies of water. Once a day is not now sufficient to look through the plants for this work; nor is twice too often. Abstain as far as possible from using any manures that will impart a disagreeable odour in the house. If any be used at all, an artificial inodorous manure will be preferable. Overcrowding is an evil to be guarded against. There is a temptation frequently to use more plants than would otherwise be the case simply because they happen to be in flower. This often occurs through want of management in regulating the supply, which is easily done by a little tact. Take *Pelargoniums* as an instance of overcrowding. These, when stood closely together, will soon have a number of leaves turning yellow, whilst at the same time it fosters an attack of aphids, the two combined tending to shorten the flowering period. Rather than allow overcrowding, it is decidedly better to grow fewer plants and thereby have them at the same time more presentable. Constant attention in the way of picking off both decaying leaves and flowers is almost as essential as watering itself.

Where there are any signs of aphids they should be stopped or held in check by all possible means; spraying with a weak insecticide will often do this, using the small sprayers now in the market for this purpose. Fumigation is effectual, as we all know, but its adoption is never advisable in a house of flowering plants at this time of the year, *Pelargoniums*, *Calceolarias*, and the like all being sensitive to its application. Do not let the climbers escape notice; if any be getting too crowded in growth some thinning out will certainly be advisable, and at the same time preferable also to tying in closely. This latter plan is senseless to a degree; it gives a trimmed and prim appearance, it is true, which some may think the right thing to adopt, but it is neither conducive to flowering nor to the health of the plants. Where climbers are turned out do not let them escape notice in watering; most of these will now take a liberal supply. Large plants of *Palms* and other fine-foliaged plants will want looking after for any signs of thrips and other insects; these will now increase apace if allowed their own way. Sponging will be found the best remedy unless the syringe can in any case be freely used. Advantage can also be taken to fumigate at least twice when a general clean out is in process, not otherwise.

CAMELLIAS.—These will in most cases have now completed their growth, although the hardening process through which the foliage has to pass may not be finished. The syringe should be freely used, and where possible a moist atmosphere still maintained, both tending, in conjunction with plenty of moisture in the soil, to renewed root-action, which hardly keeps pace with the rapid development of the leaf growth when once it starts. Slight shading in any case is certainly advisable, although not imperative, the most risk of injury being feared where the glass is of defective quality, as alas! it often is, more particularly where cheap houses have been run up. As soon as the foliage is hardened (this in the case of early

flowered plants will soon be the case), then the repotting or retubbing of any in need of this should have attention. I consider this to be the best time to do it, having frequently noted how very active the roots are during the summer. For this purpose, as regards soil, some prefer peat, others loam; in my own case I give a mixture of the two in about equal parts; this prevents the souring of the former and the adhesiveness of the latter. Lime rubble is a good addition when crushed down fairly fine, or some bone-meal may be safely used. Plants that are moved out of doors for the summer season should until the growth be hardened still have a slight protection. Where planted out in borders, a good mulching of such as the manure from a spent Mushroom bed or a top-dressing of good soil to remain permanently will probably be found a great assistance in most cases.

SUCCESSIONAL PLANTS.—Up to this time it will have been found an advantage to continue stopping the stock of Fuchsias. Now those intended for the earliest bloom should be allowed to grow away for flower; this batch will then come in usefully early in July, just when in many cases there is a lack of bloom. Others should be allowed three weeks longer before another stopping, and younger plants another one still. This is far better than permitting them to rush into flower all at once. The later stock will be all the better for another shift if they have not had the second since the spring shaking out and repotting. This will not be possible in the case of basket plants or those probably that are trained up the rafters; these, therefore, should receive a liberal treatment instead. Any other plants seen to be coming on more speedily than is desirable should also be stopped, or at least have the flowers picked off in an early stage, so as not to weaken them for later use.

JAMES HUDSON.

ORCHIDS.

At this season the Orchid houses are exceedingly interesting because of the wealth of beautiful flowers, fresh and charming, each with their own delicate tints, enhanced sometimes by exquisite perfumes. The plants are grown specially to produce their flowers, and yet the real Orchid fancier is not merely satisfied with the display of bloom, for if he takes an interest in his plants he is anxiously watching for what is to follow, and is interested about the prospects for next year. Some Orchids bloom in their resting period, others pass into the resting period when the flowers have passed away; others again are ready to grow, and have even started into growth while the old growths are yet laden with blossoms. In the latter category we may place the Dendrobiums. Many of such plants will have made growths from the base even while the flowers were yet in the bud state, but they start to grow before there is any very active root action. It is a good time to repot or rebasket such plants when the flowering period is over. Most of them have been repotted, but some have been kept back for one purpose or another, sometimes for the May and June exhibitions, and in this case a number of plants are sometimes turned out of pots, pans, or teak baskets, and placed all together in a large flower-pot. Indeed, I remember attending an exhibition where something like two score plants of one species had been planted together in large new tubs painted green with black hoops, the whole well varnished. When exhibitors are driven to this method of staging their plants a good deal of labour is required to get them well packed together before the show, and a great deal more to get them repotted and rebasketed again when the plants are taken home. Some persons have an idea that Orchids treated in this way must be very seriously injured by what they suppose to be the rough treatment to which they have been subjected, but as some evidence that this is not so, I know for a fact that certain plants have passed through this course of treatment year after year, and are not thereby injured in the least. They must, of course, in each case be carefully

handled; much care has to be taken that the young growths starting from the base of the plants are not injured; even if they are not broken off, they carry the marks of bruises upon the leaves for a very long time. All Dendrobiums not repotted should be seen to without delay; see also that they are placed in the warmest house. I hope to finish ours this week; the earlier plants are about half through their growth. We give them plenty of heat until growth is complete, after which they are gradually inured to a cooler atmosphere, not too cool at first, for the growth is not everything; it depends much upon the way the plants are brought on to the resting stage whether or not they will flower well next year. I ought to add that Dendrobiums when growing require plenty of water; never let them get quite dry. Two evils result from their getting over-dry when in growth. The first is that the plants receive a check which may stop the growth too soon and cause the production of another set of growths afterwards, which come too late to ripen well the same season. Another evil is the production of adventitious growths upon the old flowering stems and the quantities of roots at their base. These may be all very well if the only object of growing the Orchids is the propagation of a large stock of plants. The amateur wants a handsome specimen well flowered, and is content to leave the increase of stock to the dealer, unless in the case of rare and beautiful varieties, when increase of stock is highly desirable. Some of the later flowering Dendrobiums require repotting in good time, as in some instances they form fresh roots very early after flowering, and even before. *D. Bensonia*, for instance, might retain its vigour much longer than it usually does if the plants were repotted at the right time, and placed near the glass roof in a tropical atmosphere when making their growth. Plant in teak baskets or shallow pans. I have been very successful with *Dendrobium formosum* by repotting it in June and treating it much the same as *D. Bensonia*—in fact, those two have been grown together very successfully in the warmest house. *D. infundibulum*, of course, requires much cooler treatment, and succeeds best in a cool house. The Dendrobiums of the *D. Dalhousianum* section, which include *D. Calceolaria* and *D. moschatum*, are not always well grown, but there is no reason why they should not grow vigorously and produce flowers abundantly. As soon as the flower-spikes show, water freely, and continue to do so until growth is complete late in the autumn. Plenty of heat and moisture when growing and ample pot room are what they really need to produce shoots 6 feet long and as thick as a walking cane. They make quantities of fibrous roots.

Some of the *Aerides*, such as *A. Fieldingii*, *A. Larpentae*, *A. virens*, &c., may be repotted now if they need it. Every Orchid grower is anxious to produce plants that will flower of *Cattleyas* of the *C. gigas* and *C. Dowiana* type, as well as hybrids of them. They are now in growth and should be up near the glass roof in the warmest position in the intermediate house. The growths must not in any way be checked, for this might cause them to start again, which they are very liable to do, and when this happens they will not flower. It is quite as necessary to give as much attention to the plants which do not produce flowering sheaths as to those which do so, as the plants not blooming are more likely to start again, and this in any case is an evil which must be strictly guarded against. We have repotted all our plants of *Cattleya Lawrenceana* that required it, and as *C. Mossie* and *C. Mendeli* pass out of bloom, they also are repotted. *Brassavola Digbyana* should have a rather warm position when pushing up its flower-spikes. It has become rather more interesting than it used to be, because of the pretty and interesting hybrids produced from it by crossing it with the *Cattleyas*, which it much resembles in growth. One need not urge the all-importance of keeping the plants quite free from insect pests, which do more mischief now than at other seasons, because they cripple the growths in course of formation. The cool house will scarcely need artificial heat, and it is easy to keep up the temperatures in the other

houses with very little trouble. The *Odontoglossum* house is 55° at night; *Cattleya* house 60° to 65°; East India house, 70°. J. DOUGLAS.

KITCHEN GARDEN.

SECURING THE STEMS OF ASPARAGUS.

THIS, one of those simple operations connected with the culture of Asparagus, is not practised so often as it should be, and yet it should be looked upon as one of the most important details connected therewith. One might go into numbers of gardens during the summer months and find the Asparagus quarters somewhat neglected, the tops bending over. Even if not partially broken through, they are in such a condition that they cannot perform their proper functions, viz., storing the roots with nutriment for another season's crop. Considering that Asparagus is one of the most important of vegetables, it is surprising that it should so often be left, as it were, to take care of itself, and yet when the season comes round, the crop is eagerly looked for; in fact, when other vegetables are scarce, it has to prove a veritable sheet anchor. This season, for instance, it has been of excellent service. Being truly herbaceous, it is all the more desirable that the growth be well cared for, especially after the trying ordeal it has undergone of having the tops shorn off during the previous five or six weeks. Instead of a bed only being expected to last a limited number of years, it will last an ordinary life-time with care.

No doubt there are instances of good Asparagus being produced annually where no securing of the stems is practised, but these are more the exception than the rule, and position must be greatly in their favour, being in this respect well sheltered from wind-storms. I have known seasons when the tops would have been quite free from injury until the summer was far advanced, or, indeed, well into autumn before any violent storms have occurred, but we can never tell what may happen, and it is always best to be well prepared. In this garden, which, by being at a high elevation, is very subject to the effects of wind-storms, the stems if not secured would form quite a cavity at the base through the violent twistings.

The process of staking is not at all difficult, and the time it takes is hardly worth mentioning. Where the crowns are very strong and planted some distance apart, these should have a stake placed to them individually, taking care that the stakes are not thrust into the centres of the crowns. In other cases stout stakes may be placed at each end of the lines, and a few others intermediate down the rows, or according to the distance, these being for the support of long and slender rods, and to which the stems must be tied. Another advantage, besides the injury from wind-waving, is that by being tied upright, direct sunshine and light reach the bottom of the stems, no small advantage. By allowing the tops to sprawl all over the beds the surface is not so apt to dry quickly, but where the beds are properly mulched this is not likely to happen.

I have referred to the evils likely to accrue through neglecting supporting the stems, and also the advantages from doing so, knowing that by adopting the practice the grower will be well rewarded for his trouble. Not only established beds, but seedlings should be seen to, that is if they are not capable of hold-

ing themselves erect. In these cases only small sticks would be needed, a few hundred plants being quickly done. A. Y. A.

MULCHING PEAS.

THE Pea crop will be poor unless means are taken to apply moisture to the roots. Early Peas are often sown on sloping borders, and in such positions it is next to impossible to give sufficient moisture, as after one or two waterings the ground becomes hardened and the water or liquid runs away. In such seasons as the one we are passing through the value of a deep drill when sowing is seen; indeed, I advise it for more reasons than one, as in cold or windy weather the deep drill is a great protection to the tops, and in times of drought it is much easier to apply moisture. The value of good cultivation will now be also evident. Much may be done to prevent mildew in Peas if good trenches are dug out in the way advised in a note sent a short time ago, for the late lots will cause less trouble and the crop will be more certain. Watering either early or late Peas is a poor business, unless thoroughly done, as to give it in dribbles does more harm than good. Even this thorough watering cannot in all places be accomplished, as there is often a deficiency of water and labour. In such cases mulching will be of great assistance and often save the crop. Mulching may be done in various ways, according to the means at hand and the nature of the soil. I use spent Mushroom manure, and it answers admirably, as it lies close together, retains the moisture, and is not unsightly, besides supporting the roots. In the case of early dwarf Peas planted close together it is a good plan to cover all the soil between the rows and to water between instead of on the top of the haulm.

Those who have cow manure may use it to great advantage for mulching, especially on light soils, as such manure contains much moisture and is cool. It should not be applied in a green state, as it cakes. If used partially decayed, or mixed with soil or short litter, it is much better. Horse manure in a fresh condition is not so suitable, as it is too drying; this is best used in a decayed state, or after it has been heated. Litter or straw is useful if there is no better mulch available, but it does not add to neatness in the garden, and when used in a fresh state leaves a crop of weeds behind. I have used leaf-mould for mulching with advantage. For flowers such as Carnations it is very good, and may be used where manures could not be employed. Cocoa fibre refuse is good to retain moisture, but, like the last-named, more suitable for flowers than vegetables. I have seen other materials used, such as Grass, but this soon withers up, and long Grass is heating and unsightly. Some varieties of Peas have a more succulent growth than others; for instance, some of the small white Peas, also blue round Peas, are great sufferers from drought and soon succumb. On the other hand, a variety that may be termed a continuous cropper often does best in such seasons, and will give excellent crops if assisted in the way of mulching. Some of our largest, newest Peas collapse very quickly. It is best to grow a variety with plenty of stamina, and any kind which is not considered suitable, by being too tall, may be made so by pinching the tops. Those varieties which produce their pods in pairs and give a succession are reliable. G. WYTHES.

The Onion fly.—Many gardeners, and particularly allotment cultivators, who cannot give that amount of attention to their gardens so much needed at the time the crops are making a rapid growth, often complain of the ravages of the Onion fly. The Onion fly lays its eggs on the exterior of the Onion close to the earth, and when they are hatched the larvæ emerge, and, in the form of maggots, eat their way into the bulbs, causing them to rot, to the great loss of the crop. So much do the allotment holders in the Ealing district suffer from the Onion fly, that I once asked the late Mr. Henry Deverill, of Banbury, to give me a

remedy. In reply he stated a good one was to put a quart of the juice of quassia chips into a gallon of water, with half a wineglass of Bentley's or some other insecticide, mix it well together, and syringe the Onions twice, morning and evening, and this, as Mr. Deverill remarked, "is a safe remedy." I have recommended it to our local allotment holders, who have used it with great advantage. Quassia chips can be purchased at any druggist's, and from 2 ozs. to 3 ozs., which costs very little, will be enough to give a quart of juice. A small quantity of Bentley's insecticide can be obtained readily enough.—R. D.

Growing Mushrooms.—The account given in THE GARDEN of an experiment with Mushrooms at the Horticultural College, Swanley, by Professor Cheshire, is not at all a "new" method, unless it is in placing the manure and earth in alternate layers instead of mixing it together in the process of turning. It is a very old practice, which I have adopted frequently. As stated at the end of the paragraph in question, the temperature is regulated so that spawning may take place earlier than with manure only. The practice has already been detailed in the pages of THE GARDEN.—A. Y.

Early gathering of Peas.—It would be both valuable and interesting if readers who feel so disposed would give the variety, date of sowing, and also the time of gathering the first dish of Peas in this abnormal season of drought and sunshine. My first dish of William Hurst was gathered on the 16th. These were sown in 5-inch pots on February 4, allowed to come on in a cold frame and afterwards planted out on a south border on March 13. These Peas have done well, considering that the staple soil of this garden is heavy and the site exposed, although well up to the sun. My impression is that the dwarf earlies, such as William Hurst, Chelsea Gem, &c., have come through the ordeal the best, at least much better than the early rounds. I note a dish or two has been gathered earlier, but I suspect position and soil, also district, make the difference. In other years I considered the end of the first week in June early to gather Peas.—A. YOUNG, *Abberley Hall, Stourport.*

Tomato Challenger.—Even thus early in the season Tomato Challenger is proving itself to be the best of the Perfection type of Tomato. Growing alongside Ham Green, it is the better of the two, being quite distinct. The fruit sets most freely and this in large bunches of eight and ten. Of course, with this number of fruits to a truss, and these following in quick succession, it is not expected that the fruits can be large individually.—A. YOUNG.

ORCHIDS.

BRASSIAS.

THIS is an old genus, established by Robert Brown, who dedicated it to a celebrated collector of his day. Brassias are nearly allied to *Oncidium*, and also to *Miltonia*, from both of which, however, they appear to be distinct. I have received a fine flower of a plant under the name of *B. brachiata* from Mr. Snee, of The Grange, Carshalton. These plants some thirty or forty years ago used to be grown somewhat extensively. They grew well and freely and bloomed profusely, and their delicately fragrant flowers might be seen in almost every collection. The condition of the Orchid house in those days suited them well, for the majority of the kinds enjoy heat and moisture in the growing season. They do not like too severe drying through the winter, and from their being evergreen, just sufficient water should be given them to preserve their foliage. Under these conditions they grew and bloomed amazingly, always attracting attention from the shape of their flowers. On the cool Orchid rage setting in, Brassias were neglected or for-

gotten. Brassias are particularly suitable for growing in the stove house with other plants from warm climates. I have always grown the majority of the kinds best in the East Indian house, keeping up a good heat and moisture, and resting them with the Cattleyas, but during this time giving sufficient water to keep the rich green of their leaves from fading. The soil for these plants should be good brown peat fibre and Sphagnum Moss. Drain the pots well, and set the plants up a little above the surface. Do not give any artificial manures, for I have seen a collection of them which had been acquired at considerable cost and trouble ruined by the application of fish manure. This does make Brassias and many other Orchids grow at first, but the constant application appears to cause a weakening of the system, and the plants degenerate and eventually die, their pseudo-bulbs becoming quite brown and black. The only method of applying stimulants to Orchids in a successful manner is by disseminating ammonia in the atmosphere, from whence it may be absorbed by the aerial roots without injury. The following are some of the best kinds:—

B. ANTHEROTES is a strong growing kind and a free bloomer. It grows some 18 inches in height, and produces a distichous raceme of bloom, the flowers being rich yellow spotted with blackish purple. It flowers during the spring and early summer, and the blooms last some three weeks in full beauty if not wetted. This plant comes from the mountains of Colombia, and therefore succeeds best under somewhat cool treatment.

B. BRACHIATA.—This flowered first with the Messrs. Rolleston, of Tooting, just fifty years ago. The flowers are very large, the lower sepals some 6 inches and upwards in length; the dorsal sepal and the petals are somewhat shorter, all of a light yellowish green spotted with brownish purple towards the base, lip large, light yellow. This comes from Guatemala.

B. GIREOUDIANA.—A plant that has always been rare in our gardens. It comes from Costa Rica. The flowers, large and thrown well above the leaves, are light yellow, spotted with reddish brown. It is an old species, flowering in the early summer.

B. LAWRENCEANA.—Named in honour of Mrs. Lawrence, who used to have fine specimens in her gardens at Ealing Park. The sepals, as long again as the petals, are light yellow, spotted brown or brownish purple. It blooms through the summer months and comes from tropical America.

B. LAWRENCEANA LONGISSIMA.—This, the largest flowered kind yet found, comes from Costa Rica. The ground colour of the flowers is deep orange-yellow, with large spots and blotches of reddish purple, the large lip being pale yellow spotted in a similar manner. There would appear to be a good deal of doubt as to the right position of this plant.

B. VERRUCOSA.—This is another very desirable plant, having a many-flowered scape with yellowish green flowers marked with some spots of green at the base; the lip white, marked with some wart-like spots. This blooms in the month of May, and lasts a long time in full beauty.

Besides the above there are many others, as *B. maculata*, *B. caudata*, *B. Keiliana*, *B. macrostachya*, &c., which deserve notice, and the flowers of which yield a slight perfume.

WILLIAM HUGH GOWER.

Cattleya Mossiæ.—Of this species I have received a lot of flowers, many of them being good ordinary forms and not worthy of any special notice. A few flowers deserve special notice, and the finest is one from Mr. Broome, of Llandudno. It is a flower 8 inches across, with rich rose-coloured sepals and petals, the latter being very broad and undulated; lip large, broad, beautifully frilled round the edge, the entire front lobe being

rich rosy magenta, having at the mouth of the throat some slight orange-yellow streaks and stains. It is one of the most beautiful forms of *Mossia* which has ever come under my notice. Another very fine variety comes from Mr. J. Barclay, Manchester. It is of about the same size, the sepals and petals being of the same colour, the lip large, heavily frilled and undulated, stained in the throat and sides with rich orange-yellow, and flaked with rosy magenta in the middle, with paler margins. The next in point of beauty comes from Mr. Kerslake, gardener to the Rev. E. Handley, of Bath. The sepals and petals are of a pale flesh colour, the lip having a white frilled margin, streaked and stained in the centre with rosy purple, faintly tinged at the sides of the throat with light orange-yellow. This is a very pleasing and bright variety.—W. H. G.

SHORT NOTES.—ORCHIDS.

Cattleya Schroederæ.—A flower of the very finest variety I have ever seen comes from Mr. Seeger, of Dulwich. The sepals and petals are of a uniform rich rose colour, and the throat is rich tawny orange, the margin being of a bright rosy flesh colour. It is a magnificent flower, of good shape and substance, and gratefully scented. —G.

Sobralia macrantha.—What had been an excellent coloured variety of this plant is to hand from Mr. Broome, of Llandudno, but it was withered beyond recognition when opened out. It is a grand plant, and should be more universally grown. The plant is decidedly ornamental even when not in flower, but when in bloom, this, combined with *S. leucoxantha* and *S. xantholeuca*, form a grand trio, which last many weeks in beauty.—G.

Cattleya Mendeli Alfred Smee.—A beautiful flower of this variety comes from Mr. Cummins, gardener at The Grange, Wallington. He tells me the plant has received an award of merit from the R.H.S. and a certificate at the R.B.S. It is a beautifully shaped flower, with deep rosy sepals and petals, the lip pure white quite down to the rich velvety crimson-purple of the front lobe, the throat pale yellow, prettily toothed on the margin.—G.

Cypripedium caudatum roseum.—I suspect this must be considered a much later bloomer than the type. At least, whilst *caudatum* has been out of flower with me for three weeks, the variety *roseum* is only coming into bloom, a plant with eight flowers being very handsome. This species certainly succeeds better with a fair proportion of loam in the potting compost and also potted low down. It also requires plenty of water, at least whilst in full growth.—A. YOUNG.

Dendrobium moschatum cupreum (*J. Faulkner*).—This is the correct name of the plant which you send marked D. Calceolus. The plant grows to about 4 feet in height, and usually flowers upon the leafless stem. The flowers, borne in drooping racemes, are wholly of a rich apricot colour, saving two blotches of dark coppery orange in the lip. This from its being considered an old kind has now-a-days been discarded, but if kept in good condition it will produce an abundance of bloom.—W. H. G.

Dendrobium primulinum (*J. Faulkner*).—The flower you send me marked 1 is this species, and an excellent variety of it; and the flower marked 2 is *D. Pierardi*. You say they were both bought for *D. Pierardi*, but the growth is so different that I should at once detect it. There is another much finer variety of *D. primulinum* called *giganteum*, which well deserves its name. It and the species generally flower before the end of May. The early season has not affected your *Dendrobiums*.—W. H. G.

Lælia purpurata Lindeni.—A splendid flower under this name comes to me from M. Linden, of Brussels. The sepals are of a soft rosy blush, the broader petals rich rosy purple, the lip very deep maroon-purple with a lighter tip, and the throat rich yellow, streaked with purple. I

really cannot distinguish this flower from the variety figured in the "Orchid Album," t. 346, under the name of *L. purpurata blenheimensis*, save that the apical part of the front lobe is slightly darker. It is a remarkable and good variety.—H. G.

Odontoglossum cirrhosum.—J. Anderson sends me some flowers of a very finely spotted variety of this plant. Although not so scarce as it was a year or two ago, this is not, as a rule, done well, one of the chief errors in its culture being that it is kept too warm. The plant should be grown with the very coolest kinds of *Odontoglossums*. From the appearance of the bloom it would be the variety known as *Klabochorum*, the flowers being somewhat larger than those of the ordinary form and with larger and more numerous spots and blotches of deep blackish crimson.—W. H. G.

Odontoglossum crispum.—A very fine form of this plant comes to me from M. Linden, of Brussels, not so fine as the superb flower noted a short time ago, but still remarkable in colour, reminding me of some flowers that used to be sent by a Mr. O'Reilly to the late Mr. B. S. Williams when I was with him nearly thirty years ago. In the flower now before me the sepals are broad, of a beautiful rosy lilac, spotted with dark chestnut, the petals broad, with wavy edges, making a nice round full flower, white tinged with rosy lilac and faintly spotted. The lip is beautifully spotted with chestnut and quite typical in form.—G.

Cattleya Schilleriana.—A very fine form of this plant comes from the Rev. E. Handley's collection. This plant resembles *C. Aclandiae* in its growth, but the shape of the flower is very different. The flower is about $4\frac{1}{2}$ inches across, sepals and petals nearly equal, waved at the margins; ground colour rich bronze, freely spotted with brownish purple; lip large, white, flaked with rosy crimson on the outside and regularly streaked within with the same colour. The middle lobe is large, rich crimson-magenta, flaked or streaked with white, toothed at the edge, where is a narrow border of white. This flowering so early should make another growth and bloom again this season.—W.

TREES AND SHRUBS.

HARDY AZALEAS AT KNAP HILL.

THE hardy Azalea is possibly not so well known as one might suppose, and woodlands that would gain by the brilliant flowers are overrun with weedy *Rhododendrons*, or left in their pristine condition. No class of hardy shrub gives the same variety of colour as the hardy Azalea, and no one has done more to bring the race to its present perfection than Mr. Waterer, whose nursery at Knap Hill is fragrant with the spicy odour of the masses of flowers. Each year the flowers are finer, and some of the more recent seedlings are of superb colour and form, showing that in the near future the hardy Azalea must dethrone the *Rhododendron* from its present position. We have no wish to decry the *Rhododendron*. The walk of noble plants at Knap Hill is a rebuke to those who think lightly of them, but there is no reason why the Azalea should not also receive some attention, as it is more striking through the great range of colours, from purest white to vivid carmine. The race originated by intercrossing the North American species, as *A. calendulacea* and *A. nudiflora*, with *A. pontica*, and since Mr. Waterer first interested himself in the shrubs great progress has been made, as may be seen by the large collection in his nursery. One may get some idea of their beauty from quite small plants, but there are many noble specimens, spreading bushes smothered in

bloom and just displaying the tender green leafage for contrast. The branches are arranged in tiers, so to speak, and it is this spreading character that has such a charm in the woodland. When we were at Knap Hill a few days ago the nursery seemed redolent with the spicy fragrance of the flowers.

One may ask, what is the special charm of the newer acquisitions? It is difficult to answer the question, except by recommending personal observation, comparing the later varieties with those of even not many years ago. All hardy Azaleas are beautiful, capable of imparting delightful colour to the garden, but all are not of the same high quality as regards the individual flowers. A visit to Knap Hill in Azalea time is well repaid, as such shrubs do not appear to full advantage in pots at the exhibition. The newer varieties are distinguished by flowers of great breadth, the upper segments well thrown back, thus displaying the colour, and they compose large, finely-formed trusses, quite different to the Honeysuckle-like effect of the older kinds. Each year we see distinct and splendid advances, and the variety *Mrs. Anthony Waterer*, certificated at the Temple show of the Royal Horticultural Society last year, possesses the good qualities of the finest types. We noticed it in bloom this season, and it is a lovely flower, broad, robust in expression, of the purest white, except for a suffusion of yellow on the upper petals, and held well up, whilst the truss is bold. When in full beauty the shrub is a mass of white, exhaling a sweet fragrance. The newer seedlings are of the same light character, and the resplendent tints that tell well in the landscape each year get more diversified.

These results are attained by hybridising the best kinds, but it is slow work, and about four years elapse before the seedlings flower, then, perhaps, to be destroyed, as falling short of the high ideal in the mind's eye of the raiser. The best varieties are marked and in time layered for the production of stock. The colour most largely represented is yellow, and Nancy Waterer is a superb flower, broad, and richly coloured; but one may enumerate many shades of orange, primrose and yellow, that create a gay show of colour. In a special place there are many choice seedlings, and it is these that augur well for the future of the hardy Azalea. They are a veritable surprise, the flowers distinct in colour, well shaped, and the truss of bold size. Those varieties that bear flowers with blotches on the upper part are very striking, standing well out from the other less decided types. The Knap Hill collection is getting rich in scarlets, and some of the more recent acquisitions are superb flowers—glowing crimson of quite a self shade, orange-red, and many allied tints. We picked out several that, if in the woodland, would appear as a flame of fire against the tender green leafage—a brilliant mass of colour. Although a name is given to some especially choice acquisition, as *Mrs. Anthony Waterer*, a wholesale system of giving names is wisely not followed. The reason is obvious, as it would mean a mere string of titles, every variety almost being worth some distinctive mark. The Azaleas are classed simply as "Knap Hill," a sufficient guarantee of their beauty.

The visitor to Knap Hill in the late days of May or early June will note the great strides that are being made with the double Azaleas, not semi-double, but true double flowers. There are many shades of colour, but the double rose and pink are delightful. The flowers are borne in a handsome head, and individually of exquisite shape, perfectly double,

and tender in colour. Such flowers should be in demand for cutting, and nothing in its way is more enjoyable than the more delicately tinted varieties, white, pink, and so forth, which last well in water, whilst they have a sweet, yet not too powerful fragrance. Mr. Waterer is also raising a race of later flowering hybrids, and we may in time get Azaleas over a much longer season than early summer. The shrubs want to be known well, and we think that as Mr. Waterer continues to improve the race they will be planted freely in all good gardens. Many woodland and wild spots would be made more beautiful by a judicious selection of varieties that provide a splendid series of colours from carmine to the purest white, orange-scarlet in particular, as brilliant as anything one can get amongst hardy shrubs. Where the Rhododendron is at home there also is the Azalea, and the bold group of plants in the wilderness at Kew shows that they are not only perfectly hardy, but the flowers remain untouched by late frosts when they receive reasonable shelter. Protection from keen winds and some amount of shade are desirable, whilst if the soil is not peat, that composed of fibry loam mixed with leaf-mould, or loam alone, will prove sufficient. Shelter and a cool spot are the chief requisites.

It is satisfactory to see that the Knap Hill Azaleas are present in many fine gardens, and the spreading shrubs are a perfect blaze of colour at this season of the year. There is also a feast of colour in the autumn season, when the foliage turns to many shades of colour—bright red, brown, chocolate, and allied shades, sometimes mixed and sometimes self, but always a pleasure to see. The dying leaves are as beautiful as the flowers, lighting up the garden with colour in the late days of September and early October. We noticed when at Knap Hill that *A. mollis* was well represented, but there is need of greater variety of colour in this section. There is too much sameness, and the flowers are more liable to get touched by frosts than those of the later-blooming section. But where the position is sheltered, a break of *A. mollis* possesses great charm in early May, and its value for growing in pots cannot be over-estimated.

It seems that in time we shall get amongst the hardy Azaleas flowers that will rival the finer Rhododendrons judging by the seedlings at Knap Hill. Some of the best kinds have already surpassed many Rhododendrons, and where the flowers are bold and the segments well displayed they tell with greater force in the garden. This year the drought has affected the Azaleas somewhat, but they are so hardy and vigorous, that climatic conditions have little influence upon them. We think the bushes are more pleasing when less crowded with flowers, as the contrast of light green leafage and tender or brilliant colour, as the case may be, intensifies their beauty.

Cytisus Ardoini.—I have grown this more or less for some sixteen years, and I have certainly seen in regard to the flowers considerable variation. The one that strikes me most favourably is that with canary-yellow flowers, borne erect and singly, with a pretty pink stain springing from the calyx along the tube or spur.—W.

Pieris formosa.—This Himalayan species of Pieris forms a bold evergreen bush, clothed with broadly lanceolate leaves of a deep green tint, while the blossoms are a good deal like those of an Arbutus. In the more favoured districts of England it forms a really handsome shrub, but in many parts it suffers a good deal during the winter, and consequently the greater portion of its beauty is lost. The note regarding this Pieris was sug-

gested by the attractive appearance it presents at the present time, owing to the young leaves being of a bright crimson tint. These leaves retain their brilliant colouring for some time before they change to the deep tint of the mature foliage. A second species, the better-known and more generally cultivated *P. japonica*, known as well under the generic name of *Andromeda*, is also remarkable for the rich tints of its young leaves. In both this character is more pronounced when the plants are fully exposed to the sun.—H. P.

The Orange Ball Tree (*Buddleia globosa*) was flowering freely recently in the Knaphill nursery, the present dry season suiting this attractive Chilean shrub. When in full health and smothered with its bright orange-yellow balls, it is very showy and of graceful aspect. The growth is rapid, and this is fortunate, as English winters are rather trying to the *Buddleia*; but if injured, the plant grows again quickly. It requires a light soil, shelter from keen winds, and a fairly sunny position. In the warm soil at Woking it thrives remarkably well, and if not a shrub for all gardens, it is interesting and sufficiently beautiful for all places where shrubs are cared for.

The Spanish Furze (*Genista hispanica*).—There are several of the low-growing *Genistas* now in flower whose blossoms are of a golden hue, but none are showier than this, and, taken altogether, it is a very desirable shrub, and in some places a fairly common one. On the sunny ledge of a rockwork or crowning a sloping bank it is just at home, and so situated it forms a dense, yet spreading mass, which is at the present time simply laden with its golden blossoms. Besides this, it is bright and cheerful at all seasons and quite hardy. The Spanish Broom, like several of its immediate allies, will succeed in dry sandy soils better than many other shrubs. It is also a fairly good town plant, for it will thrive in smoky districts if planted on a sunny bank or some such a spot.—T.

Spiræa cana.—The specific name of this *Spiræa* is a very appropriate one, as the little ovate leaves are of so hoary a nature, that the entire bush wears a greyish aspect. It is one of the smaller-growing forms, for the entire plant is rarely more than a couple of feet high, and it flowers profusely when much smaller than that. The tiny white blossoms are arranged in clusters along the slender arching shoots, and when in this stage it is certainly a pretty little shrub. This *Spiræa* is a native of Croatia, where it is often found on rocks, and from whence it was introduced into this country in 1825. It is a very desirable rockwork shrub, and where the different *Spiræas* are grouped together, it, in common with a few other small-growing forms, is well suited for the outskirts of the clump.—T.

Double-flowered Horse Chestnut.—The excessively hot weather experienced this spring about the time the Horse Chestnuts were in bloom showed the double-flowered variety in a very favourable light, for while the single forms retained their beauty for but a very short time, the double blossoms of this were not affected to anything like the same extent, and, consequently, the beauty of this was extended over a much longer period than that of any of the others. Taken altogether, the double-blossomed Horse Chestnut is a most desirable flowering tree, and, given room for its proper development, it forms a very ornamental specimen, while the pyramidal-shaped spikes of massive double flowers are very freely borne. It is now fairly common, and can be obtained at a moderately cheap rate from most nurseries.—T.

Rubus nutkanus.—The genus *Rubus* is a rather extensive one, and the various members of it differ widely from each other; indeed, they may conveniently be divided into three groups—firstly, the ramblers, such as the common Bramble and its allies; secondly, those which push up erect stems from the base after the manner of the Raspberry; and thirdly, represented by but a single species—the Rocky Mountain (*Rubus delicicus*), which

forms an unarmed, much-branched shrub, which without flowers bears a good deal of resemblance to a Currant. *R. nutkanus* belongs to the Raspberry-like group, and its stout erect stems, which reach a height of a yard or more, are clothed with large Vine-like leaves. The flowers, which are not particularly numerous, are large and pure white, so that a specimen in full bloom is certainly very attractive. It is just now beautifully in flower. This *Rubus* is a very uncommon plant, yet it was introduced from the north-western coast of North America as long ago as 1826. A second and nearly allied species, *R. odoratus*, is older still. This is a native of Canada, and according to Loudon was sent here in 1700. *R. odoratus* is more vigorous than the preceding, while the flowers instead of being white are purplish red. This is, as a rule, rather later in commencing to flower than *R. nutkanus*, but as a set off it continues to bloom much later in the season, often till autumn is well advanced. In a quiet nook in the wild garden such subjects as this are more in harmony with the surroundings than when associated with a more formal class of plants.—T.

Cytisus purpureus.—If only for the fact that the blossoms are so widely removed in colour from nearly all its allies, this Broom would merit notice, but in addition to this it is a really pretty little shrub and one that, in common with most of the Brooms, flowers very profusely. It is of a low, spreading habit of growth, and the long slender shoots are clothed with neat pinnate foliage and studded for a considerable distance with purple Pea shaped blossoms. It is just at home on a sunny ledge of the rockwork, or it may also be planted in the foreground of larger forms. The purple-flowered Broom is frequently grafted standard high, and in this way the long arching shoots are seen to advantage; but even then it would be by most people preferred when allowed to assume its natural character as a low spreading shrub. Not only does this Broom flower in the spring, but a few scattered blossoms are often produced throughout the summer. There is also a charming white-flowered variety.—H. P.

Cytisus Andreanus.—I have flowered several seedlings from this *Cytisus*, but in every case the flowers were of the normal yellow tint, without any trace of the reddish velvety hue that forms so prominent a feature in the variety *Andreas*. Still, I am inclined to think that seedlings have been raised, for certainly in some individuals the flowers seem more richly coloured than in others, which is such as might be expected if some were obtained from seeds. It is usually grafted, for cuttings do not strike root very readily; still, it can to a certain extent be increased in this way. I tried a variety of cuttings, and was most successful with those formed of the young growing shoots taken from plants that had flowered under glass and covered with a bell-glass till rooted; in fact, just given about the same treatment as the allied and universally grown *Cytisus racemosus* requires.—H. P.

Juniperus nana.—I have grown one plant of this for a long time. I feared it might develop into something too big for rockwork, but a five-year-old plant has not done so, and at present is no more than 3 inches high. At this season it is a most characteristic little shrub, the older foliage being dense on the short twigs and of a deep olive-green colour. The new shoots issuing from the tips are a pale blue or cassia-green—a delightful contrast. One can see a hundred uses for a plant of this character in the alpine garden, and fortunately it is not a difficult subject to accommodate, needing only a little sandy loam mixed with peat and to be planted firmly.—W.

Spiræa arguta.—A shrub of this established for five or six years in a warm heap of stony soil has been indescribably beautiful this dry spring. It may sound odd to speak of a *Spiræa* flourishing in dry stuff and dry weather, but this is one of the dwarf shrubby species or varieties. The little snow-white flowers are arranged in knots on the slender arching thread-like stems so as to form one-sided racemes or sprays, each from 4 inches to

9 inches long. The full stature of the shrub is 2 feet 6 inches. I do not know that flagellifera is other than the same plant; if it is, I have never yet been able to see any distinction, and both come near to the shrubby *S. Thunbergi*, though I imagine this plant to be much more slender and graceful.—J. W.

Viburnum Opulus.—In a small forecourt garden close by where I live there is a large bush of this common Guelder Rose with its large cymes of flowers; on the circumference is a circle of white blossoms resembling those of our cultivated Guelder Rose, and inside forming the centre small and somewhat inconspicuous flowers, which in autumn form clusters of crimson berries, the more striking ones on the edge of the cymes being sterile. Sterility is also the characteristic of that form of the Guelder Rose known as the Snowball Tree; its large balls of blossoms are never followed by the fruit the common form produces. At the last meeting of the Royal Horticultural Society Messrs. Veitch and Sons exhibited sprays of *Viburnum plicatum* in which the cymes partook of the same character as those of the common Guelder Rose, and probably berries will be produced in autumn. I think the common form much more deserving of culture in gardens than is generally supposed.—R. D.

Rhododendron Helene Schiffner.—This is a very beautiful variety and will probably become largely grown. It was exhibited at the summer show of the Royal Botanic Society by M. J. T. Seidel, Handelsgartner, Steisen-bei-Dresden, and we made note of it as a thoroughly useful kind. The plant is very compact in growth, and those shown were in 6-inch pots, the leaves deep green in colour, each shoot terminated by a head of pure white flowers, somewhat campanulate in form and moderately close together, but yet not formal. Each specimen was crowded with the spotless flowers. When of larger size, so as to get a greater quantity of flowers, this will be a good variety for cutting, whilst in small pots nothing could be more suitable for the greenhouse or conservatory or groups at this season of the year.

A red-flowered Horse Chestnut.—A very fine variety of *Æsculus* is *Æ. Brioti*, which we noticed recently in the Knap Hill nursery. The flowers are of much deeper and stronger colour than those of the ordinary form—a glowing crimson, which is very effective against the leafage. A number of young trees were in bloom recently, and in the distance the crimson flowers were conspicuous for their intense depth of colour. It is apparently free, strong in growth, and much more telling in the landscape than the common kind.

Viburnum plicatum (type).—This is included among the list of things awarded a certificate by the R.H.S. at their meeting on May 9, and in describing it your reporter speaks of it as likely to prove a valuable plant for walls. This would seem to imply tenderness, which I am of opinion hardly exists if the shrub is the same as that we have been growing for several years. Just as the Snowball Tree of our gardens is but the sterile form of the common *Viburnum*, which by the way at the present time in the Sussex woods is the prettiest thing to be found in flower either in or out of gardens, so I imagine that the shrub we have known for a considerable time as *V. plicatum* is but the sterile variety of a type resembling our native one. I remember a bush of *V. plicatum* that used to be on the Chiswick rockery and the way in which it flowered. Now the shrub we have as *V. plicatum* has a similar habit, is dense in growth, produces wreaths of bloom, but only the outer edge of blooms is sterile and the cyme is flat. If it is such a shrub as this that was certificated, then it will when better known be found one of the best flowering shrubs for many gardens. It is early, too, and this year, responding to the heat, was caught by a frost one morning, and the flowers were rather browned. This, however, is an accidental and mere occasional mishap, which in no way minimises its real worth. In Nicholson's dictionary something corresponding to this is described as *V. plicatum tomentosum*,

and the outer flowers alone are said to be sterile, thus rather making it appear to be more the type of what is described as *V. plicatum* than a variety of it. These shrubs are so beautiful, that it is important we should know them, and not be confused between types and varieties. Many gardens might add a group of *Viburnums*, and our native species is as suitable as any. It should certainly be planted by those who have not got it growing wild and freely in woods, copses, and hedgerows near by.—A. H.

The Pyracantha in flower.—So attractive are the berries of the *Pyracantha*, that, as a rule, but little attention is paid to the beauty of its blossoms, though at the present time it is in many cases profusely laden with its charming little flowers. They are borne in neat clusters, and before they open the small pearl-like buds are wonderfully pretty, especially by artificial light, if they are used in a cut state. In this way they are really charming, and last in water a considerable time. The *Pyracantha* in its different forms is one of the last of the Thorns to open its blossoms, other late kinds being *Cratægus tanacetifolia*, of which a coloured plate was given in THE GARDEN of December 19, 1885. *C. punctata*, *C. flava*, *C. cordata*, and the little *C. parvifolia*, which forms a rounded bush, clothed with deep green leaves and studded over with comparatively large solitary pure white blossoms. It is by no means invariably met with in a flourishing state, but a thriving specimen a yard or so high is very pretty when in full flower.—H. P.

CHRYSANTHEMUMS.

CHRYSANTHEMUMS.

I ASKED Mr. H. J. Jones, the well-known Chrysanthemum grower of Lewisham, the other day what was in his opinion likely to be the general effect of the long-continued spell of heat and drought upon the plants, and he said he anticipated that it would lead to early maturation of wood and bud-production. That may be, and his further expectation that the October show of the N.C.S. would largely benefit might also be realised. Of course, much again may depend upon what form the weather assumes for the next two months, for no doubt by the end of July the general blooming character of the plants will be determined. It seems absolutely certain that such unusual heat and dryness of the atmosphere must help to harden stems and cause bud-development unduly early; indeed, some may have rather gained whose plants have been partially shaded during the day, although it must have been difficult, whatever the position, to find the atmosphere other than arid. What is the present state of the plants will, no doubt, soon be remarked upon, but it is the good or bad fortune of Chrysanthemums to be more affected perhaps by atmospheric conditions than many other plants grown in pots out of doors. One thing certain, however, in relation to precocious blooming is that, whatever may be the passing effect of the weather, there is growing up fast a race of early bloomers which will soon equal in dimensions and utility the best of the November kinds. This is, of course, chiefly the case in connection with the Japanese, because these are not only so productive of seed, and in that way so easily raised, but also because growers see that a better market just now is open for these fine early bloomers than is the case with later ones. Mr. Jones showed me a thousand or so of plants from cuttings of good seedlings of last year all to be further tried, and yet another thousand seedlings of

the present year, from all of which many, even September bloomers, are expected. The same thing is being done in many other directions; indeed, hundreds of private growers now raise seedlings and look for something good from them. Many moderately good forms that would not be regarded as useful if only November bloomers will be saved, because they bloom early, and it is impossible to doubt but that presently the high average of the one month will characterise the other. It is not possible to look over a large batch of seedlings now without being struck with the number of sturdy dwarf ones that are found amongst them. That is great gain, and there can be no doubt but that, let the flowering time be what it may, many an otherwise good old sort will go by the board because such a tall ungainly grower. There can be no doubt but that in many localities the possibility of holding Chrysanthemum shows in October would largely help to popularise them, because November is so late, often so cold and gloomy, sometimes inclement, and still further, as so far all the leading shows are held in November, small places or shows are handicapped or shut out entirely. It may be that we do not want Chrysanthemums in bloom too early, but at least they are very welcome in October.

A. D.

CULTURAL NOTES.

No time should be lost in giving the plants their final shift into the flowering pots. The hot weather of the last month has brought on the plants so fast, that in nearly all cases the pots are full of roots, and to allow them to remain in that condition for any length of time means a check to free growth, which is not only undesirable, but calculated to do positive harm in the future. I alluded to the soil best suited for the final potting on p. 318. As there pointed out, the best of compost may be quite nullified by mistakes in after culture. In preparing the compost, I lay especial stress upon the plan of removing the bulk of the fine soil where the loam is of a heavy character. Soil of this nature is more difficult to maintain in a porous state. It is absolutely necessary that the rooting medium be maintained thus, because when not so, the plants cannot be kept in that perfect state of health necessary to ensure the best results. Soils differ in their constituent parts so much in various localities, that it is difficult to lay down absolute rules for all. I have had turf that to the eye was apparently all that could be desired in the matter of being fibrous, but when it came to be in use for a few months, the fibre so quickly decayed as to leave the whole an inert mass. Where this is known to be the case, an extra quantity of porous material should be employed in the shape of charcoal, old lime rubble, and wood ashes. A slight difference ought to be made in the case of weak or delicate growing sorts, such as Mrs. Alpheus Hardy, for instance. An addition of one part fibrous peat without manure of any kind will be found more suitable than the orthodox mixture.

Amongst cultivators of but little experience there is too great a tendency to employ pots too large. Not only is this a mistake, but it is one calculated to be more expensive in every way. Where so much rooting medium is provided, the plants cannot be fed so freely as might be wished, especially during continued showery weather, for the simple reason the soil does not become dry so quickly. In the case of plants cultivated for the production of large blooms, limited to but three, or at the most four on a plant, pots 9 inches in diameter are of sufficient size for any variety. It very often happens that a stock of larger pots is on hand and which must be employed. In that case I advise where they are, say, 10 inches or 11 inches in diameter, placing two plants in each. Two plants of Princess of Wales will give equally as good results when growing in pots of this size

as one plant occupying a pot 9 inches in diameter. I mention this variety especially for the reason that it is one of the most important in the incurved section, but not always presented in first-rate condition. For years it has been the practice here to cultivate this sort on the dual system. Late struck plants of new or rare sorts will succeed better in 8-inch pots. I fear too little attention is paid to this phase of Chrysanthemum culture by those with a limited experience. I attach the utmost importance to maturity of growth in the plants; without it the incurved kinds cannot develop in a satisfactory manner.

To the inexperienced, potting Chrysanthemums may appear of no greater importance than potting any ordinary soft-wooded plant, but high-class blooms cannot be had from plants with soft sappy stems. When Chrysanthemums are potted loosely they grow strongly and produce large leaves, which are often pleasing to those who are ignorant of the results of such plants, but the blooms are generally devoid of that solidity which is essential to success. The crocks used for drainage should be quite free from grit, anything tending to interfere with the free passage of water being injurious to the plants. Over the drainage I use pieces of thin newly-cut turf to prevent the fine soil running down amongst the drainage and thus preventing the free egress of water. If the loam which composes the main part of the compost is poor in quality, some quarter-inch bones over the turf on the drainage will be an advantage. The soil ought to be rammed into the pot firmly. I use a blunt stick for the purpose. In soil of a light character it is hardly possible to pot too firmly, but in the case of heavy soil some discretion must be used. When the plants are potted firmly the growth is not so rapid early in the season, but it is made solid and firm as growth proceeds, and is more likely to mature in a wet autumn. Do not bury the plant too deep in the pot, just covering any roots that may have been washed bare by watering before. Leave at least a depth of $1\frac{1}{2}$ inches to allow space for water and top-dressing at a future opportunity.

It is better not to make the new soil wet until the roots have commenced to work in it. The plants in the meantime should be syringed at least twice daily. After two or three days a good soaking should be given—sufficient to wet every part of the soil. It is surprising what a small quantity of water the plants require at the roots the first three or four weeks after potting. Much harm may be and is done by keeping the soil too wet. As a rule, after the plants are potted, they are stood in some convenient place where they can receive protection for a week or two from the drying east winds until the roots commence to run in the new soil.

To obtain success, the plants must stand where they will receive full benefit from exposure to sun and light and be clear of overhanging trees, but at the same time sheltered from south-westerly winds, which often do much damage to the tender buds and leaves at the end of August and the early part of September. It is a very common practice now to arrange the plants in a single row on one side of the kitchen garden path running east and west. There the plants will have full sunlight and be thoroughly exposed to light and air, so essential to success. Here also the plants can be easily attended to. Provision must be made for securing the plants from winds. No other way that I know answers so well as erecting some kind of a trellis-work. If this is arranged in three heights, say 4 feet, 6 feet and 8 feet, all kinds can be accommodated. The first will be suitable for such sorts as Mlle. Marie Hoste and Avalanche. The second will suit the Queen family and the tallest, such sorts as Prince Alfred, Etoile de Lyon and A. H. Neve. The easiest and neatest form of trellis is that of driving into the ground at each end a stout post; from these wires should be strained and supported between the ends with light posts about 20 feet apart. This is not only a neat arrangement, but is firm and does not, as in the case of tar string, become slack in the middle. If the pots are stood 1 foot 6 inches apart, ample space is

allowed for training the branches separately, so that each one is matured as progress is made. This is an important point to study, and which cannot be efficiently carried out where the plants are budded together. The branches produced at the first break should be spread out so that the leaves of one do not interfere with those on the other shoot. My method of training them is simply this: A stout stake of the height required for each variety is pushed into the soil at the side of the pot. Bamboo canes are now largely used for this purpose; they are not only light, but durable and are neat. The stake is made fast to the cross wires, one shoot being secured to this stake, the one on each side is made fast to a temporary small stake fastened to the wires, but not into the pot. It is not required lower than where the first break was made. By this means more space is allowed for all the shoots, which not only grow robust, but the wood and leaves are matured as growth progresses. Plants trained in this way are not only secure from winds and free from accident, but they are easily examined for insect pests. Mildew, for instance, is not nearly so liable to attack the leaves as when they are so close together that air cannot pass amongst them freely.

So far I have dealt only with plants grown to produce large blooms. Those intended to give a quantity of flowers rather than a few for their individual quality will require various sized pots, according to the manner in which the plants are to be grown. For the largest specimens 10-inch pots are not too large. Serviceable plants may likewise be produced in 8-inch pots. Indeed, for pompons and single-flowered varieties I never use larger. These latter sections are restricted to a few upright shoots from near the base, which multiply near the apex, the object being to obtain spikes fully 2 feet long clothed with flowers almost the whole of their length. No trellis arrangement is required for this class of plant. Three stakes for the small, and an extra one for the largest, plants are thrust into the pots in a slanting direction outward. A piece of raffia is wound around the outside of the plant. In this way the branches are made secure, and are easily tied into shape later on just before they come into flower. Abundance of space between each and free exposure to sun and air are absolutely necessary to obtain the best results. Plants growing against walls are growing fast where they are supplied with sufficient moisture at the roots, these being kept cool by a light mulching of manure. The shoots were some time since thinned out to the required distance. All that is now needed is to keep them fastened to the wall, so that the shoots are not rendered crooked by neglect in this. During the present hot, dry weather, if the foliage is thoroughly drenched once a day the plants will grow all the faster. E. M.

The Alyssums.—In your account of the Madworts (p. 421) the very best one is omitted, *Alyssum utriculatum*, the bladder-podded Alyssum. It is figured in vol. iv. of the *Botanical Magazine*, t. 130, and is perhaps the oldest introduction of all to England, having been cultivated by Miller in 1739. It has flowers quite as large as the *Cheiranthus montanus*, and is not unlike it, but has a richer yellow colour. As a rockery plant in the early spring it is most valuable, and it is also a very effective border plant.—W. BROCKBANK, *Brockhurst, Didsbury*.

Four useful Rhododendrons.—In a corner at Kew we noticed a few days ago four Rhododendrons in bloom that should be made use of in all good gardens. They are dwarf, spreading, and form perfect mounds of foliage, almost covered with flowers at this season of the year. A group of these fine kinds would make a feature of unusual interest, and one does not see too many of such Rhododendrons in gardens, although they offer no difficulties in culture. The most useful was *R. lanceifolium*, of which there are two bushes. It is a dwarf kind, the growth spreading, the leaves rich green, narrow, pointed, and silvery on the under surface, whilst the flowers are produced in

large heads, the colour rich purple, shaded with white in the lower half of the segments. Each bush was crowded with bloom, not more than $2\frac{1}{2}$ feet in height, but a mass of foliage and flowers. A bed of this kind alone might be planted with the best results. *R. punctatum* is of a different character, though quite as pleasing and useful in its way. It grows into a dense bush, the growth very thick, and the leaves small, plentiful and deep green. Above this mass of foliage are the neat, compact little flower-heads, the flowers individually small, white touched with lilac, a few yellowish shoots appearing on the upper petals. It is a gem amongst Rhododendrons, and deserves to be in every good garden. *R. odoratum* was also in full bloom, and is a bright lilac-flowered kind, free and pleasing. Near this trio was *Rhododendron ferrugineum*, the flowers rich rose in colour, and in bold contrast to the leaves. This species is not so useful in the garden as the three other Rhododendrons mentioned, but it is a good dwarf shrub for the rockwork, liking a moist, peaty soil. *Kalmia angustifolia* and its variety *rosea* and *K. latifolia* were in full bloom near this colony of interesting Rhododendrons.

STOVE AND GREENHOUSE.

EUCHARIS AMAZONICA AS A SPECIMEN PLANT.

SOME of the many readers of THE GARDEN will no doubt remember the magnificent specimen plants which were exhibited by Mr. Howard from Bedford Hill House, Balham, at the international exhibition of 1886. These fine examples have rarely been surpassed since that time. Without doubt these plants were the forerunners of a far more extended culture of this beautiful stove bulbous plant on all sides and for all available purposes. Some of the first stock of any importance was held by Mr. Parsons, a Brighton nurseryman of repute thirty years ago. This was called *E. amazonica*, the newer name of *E. grandiflora* not then being in vogue. Until the appearance of the *Eucharis* mite a few years ago, nothing had arisen as a deterrent to successful culture. This insidious pest does not now seem (and that most fortunately) to be nearly so much in the ascendancy. More was made of it, without doubt, than ever need to have been done, although in some instances it was bad enough. I am disposed to think that it was introduced in the first place with imported bulbs of this or more recently introduced species, none of which can compare with *E. amazonica* in beauty. All the rest, save this well tried species, are of but little value save in botanical collections.

To revert, however, to the subject of the accompanying illustration more particularly (a very fine example of a well-grown plant), a few cultural remarks may be of interest. In order to secure a good specimen plant some care is needed. It is not every pot of bulbs that will be found to accomplish this. A plant, for instance, that has been potted on and on from perhaps one bulb is more likely in the long run to become weakened from the excessive overcrowding that must inevitably ensue than would be some seven or eight strong bulbs which had been placed together after having been shaken out of the soil. These latter would have more room for expansion, which is quite needful. In more than one instance I have seen bulbs more than two-thirds the way down the pots. These, when so placed through force of circumstances, cannot possess a fair chance as compared with others nearer the surface. I have had plants (a kind of surplus stock) that eventually broke

the pots by the pressure of the bulbs from within. To pot on such as these for large specimens is not a good mode of procedure by any means. If wished to grow to specimen size, I would start by selecting the strongest bulbs possible, these being obtained by shaking out a few potfuls and sorting the bulbs. It will not take such as these, provided they be healthy, a long time to re-establish themselves, bottom-heat and atmospheric moisture being the best accessories. From seven to nine large bulbs could be thus potted into about 9-inch pots or one size larger, keeping them covered about an inch or so with soil. Support for a time by means of stakes would be essential, whilst if the bulbs retain much foliage, or if that be large, I would reduce the size by cutting away a portion of

retains the water too freely, as in the case of a sponge, whilst its properties are at the same time speedily exhausted. Until the plants are rooting quite freely, being inclined to be pot-bound, I do not consider it necessary to resort to stimulating agencies. A good manure for *Eucharis* is that made from soot and cow manure, using sufficient of the former for it to be traced. A moderate use of a well-tried artificial manure is quite safe so long as it has not a burning tendency. I do not believe in drying at the roots so as to suffer, and then watering to excess, a steady course of treatment being much the safer. A brisk stove temperature is the best suited to *Eucharis* with plenty of moisture. Thus treated, the foliage should be of a dark green colour and of a

from named varieties, and the price of a single plant was as much, or even double as much, as a packet of seed, which will produce upwards of 200 plants, or even more.—A. YOUNG, *Abberley Hall*.

Tricolor Pelargoniums.—It appears that this type of fine-leaved *Pelargoniums* is becoming popular again for beds, and the large quantities grown at Mr. May's Millfield Nursery, Upper Edmonton, justify this remark. We made note of a few of the best kinds, and one of the finest is Master Harry Cox, a very beautifully coloured variety, the leaves large, bright crimson, set off with rich yellow. As a pot plant it deserves cultivation for the attractive shades of colour in the leafage. Lass o' Gowrie is bright red, the margin of the leaf of a silvery tone, and another excellent kind is Masterpiece, the leaf enriched with a broad crimson zone and a rich yellow margin.



A specimen Eucharis amazonica.

each leaf, this being better than allowing the entire leaves to exhaust the bulbs. It is not often possible to secure many of the roots, but this, I have more than once noticed, is not material as long as a few are preserved. The following season another shift may be given, and afterwards as required.

The *Eucharises* are not altogether particular as to the kind of soil used for their culture. For my own part I prefer sound fibrous peat and turfy loam, the latter slightly predominating; to this soil may be added some fresh horse droppings worked through a sieve. I prefer this to leaf soil, with the attendant risk of insects, as wireworms, &c. Silver sand or road scrapings, with some pieces of charcoal, may also be added. Firm potting is, I consider, very important, but ramming the soil absolutely hard, as in Cape Heaths, is not needful. If potted too loosely, the soil

leathery texture. When grown in what is best described as a cool stove, the foliage is usually paler in colour and not so robust. A house like the latter would answer in the summer, but in the winter, or at least during eight months out of the twelve, I much prefer the additional warmth.

SOUTHRON.

Seedling Gloxinias.—The coloured plate of seedling *Gloxinias* which recently appeared in THE GARDEN is a true representation of what may be expected from a packet of seed if obtained from a reliable source. I have just now a whole houseful in full flower, and being intermixed with small Palms and Ferns, they have a most charming effect. The colours are most diversified, and being seedlings, the grower is continually on the tiptoe of expectation of what will come next. It is only a very few years ago, when flowers not nearly equal to those figured could only be obtained

Dolly Varden is a silver tricolor, the zone red, a bright contrast of colour, and worthy also of note are the golden tricolors Miss Goring and William Sandy. When judiciously associated with other things in a bed, a good contrast is obtained.

Sollya linearis.—Blue-flowered greenhouse plants are so limited in numbers, that any of that tint are sure to attract attention, and consequently the *Sollyas* will be admired by many, for their blossoms are of a very pleasing shade of blue. *Sollya linearis* is a slender wiry-growing twiner that can with the aid of a few sticks be grown into a specimen, while it may be trained up the end of a greenhouse or in some such a position. It will also flower freely in quite a young state. The leaves of this are small and narrow, while the drooping blossoms are of a beautiful clear blue, and when the plant is in good condition a succession is kept up for some time. Being a native of Australia, this *Sollya* requires ordinary greenhouse treatment, and a very suitable soil for it consists

of loam and peat, or leaf-mould, with a liberal amount of sand. In potting, good drainage should be ensured, as all the members of the genus require a liberal amount of water during the summer months. Seeds are sometimes produced from which young plants can be raised, but in any case no difficulty attends the propagation of any member of the genus, as cuttings of the young shoots dibbled into pots of sandy soil root freely if put in at any time during the summer months. The different members of this genus have been long grown in this country, but in common with the many other beautiful subjects from the same region, they are at the present day under a cloud, and are kept in stock by very few dealers in plants. —T.

SOCIETIES AND EXHIBITIONS.

GARDENING AND FORESTRY EXHIBITION.

MAY 18 AND 19.

THIS, the second show of the series, was amply sufficient in extent to fill the commodious marquee specially constructed for the purpose throughout the season. Had the competition been greater, more room would have been available without doubt in the main building; as it was, however, if there had been another group of any extent, room would only have been found by crowding the others, or by adopting the course indicated. This was essentially a group show, eight classes alone being provided for groups of various kinds, from Orchids to Malmaison Carnations, including fine-foliaged plants as well. The effect of these groups arranged around the tent on either side was most pleasing; it was out of the ordinary run of exhibits altogether, and offers suggestive improvements in exhibitions that many an executive committee would do well to imitate as far as in their power. There is a far wider field for groups than many imagine, or ever attempt to introduce into shows.

Two classes for groups of Orchids were provided, and it was certainly somewhat surprising that only one exhibit was forthcoming in each class, considering that there are so many growers of Orchids within easy reach of the metropolis. The best group was that shown by Mr. Wythes, of Syon Gardens, in the amateurs' class. He might easily have won the first prize in the open class had he entered therein instead. As it was, he was placed first, and well deserved that award for a very bright and attractive group, consisting mainly of medium-sized plants of Orchids with a good selection of fine-foliaged plants associated therewith. Of the former, note should be made of *Vanda teres* in remarkably good condition, freely flowered, and of excellent colour. *Cattleya Mossiæ* was also in fine form, so was *Lælia purpurata*. Other good things comprised *Odontoglossum Alexandræ* and *O. vexillarium*, both well done. Of *Dendrobiums* there were *D. thyrsiflorum* and *D. Jamesianum*; *Cattleya Mendeli* and *Cypripedium barbatum* were also well represented. In the open class a larger group was required, viz., 150 square feet as compared with 96 square feet in the other case. Mr. James, Castle Nursery, Norwood, was awarded the second prize for a pretty group taken as a whole, but somewhat deficient in Orchids as to quantity and variety, the best being *Vanda suavis* and *Cymbidium Lowianum*, both in good form, the fine-foliaged plants being the leading feature instead of the accessory. For a group of *Crotons* arranged for effect, Mr. Offer, Handcross Park, Crawley, was placed first with healthy, well-grown and well coloured plants, comprising several of the newer kinds; the best plants were those of *Chelsoni*, *undulatus*, *Nestor*, and *Van Oerstedii*. Mr. Howe, Park Hill, Streatham, was a close second with a more attractive group, but not so well coloured on the whole, whilst duplicates of the older kinds predominated to some extent; the culture, however, was good. For a group of *Dracænas*, Mr. Howe turned the tables upon his

opponent and won easily with finely grown plants in good variety, the larger kinds being prominent. *D. Baptisti*, *D. Youngi*, *D. Lindeni*, *D. Goldieana*, and *D. australis* were the most noteworthy sorts. Mr. Offer was second with smaller plants, well coloured and in the best condition.

Passing on to flowering plants again, the first class is that for a group of Azaleas, in which Mr. C. Turner, Royal Nurseries, Slough, was invincible, staging several finely-grown specimens, interspersed with smaller ones. The finest of these were *Roi d'Hollande*, one of the very best dark scarlet kinds; *Etendard de Flandre*, a Carnation striped variety, very showy; *Mlle. van Houtte*, rosy salmon and white, a fine kind; and *Madeleine*, a fine, large, pure, semi-double white of great substance. Mr. Offer was second with a similargroup. Mr. C. Turner also showed a splendid group of show and fancy *Pelargoniums* of the best kinds, the plants being all round specimens in profuse bloom. The finest of these were *Ellen Beck*, *Lady Carrington*, and *Delicatum*, three of the best fancies; and *Statesman*, *Duke of Norfolk*, *The Czar*, and *Gold Mine* among the shows. Standing on the ground, these plants looked much better than when stood upon raised stages. In the groups of *Roses* Mr. Charles Turner also won, and that quite easily, from Messrs. Paul and Son. In this class Mr. Turner staged his fine new *Polyantha Rose Crimson Rambler*, the finest introduction amongst garden *Roses* for many years. There were several plants of this kind all in the most profuse bloom, the large dense clusters of flowers of an intense crimson shade being freely produced upon plants in comparatively small pots; evidently it is both valuable as a pot plant as well as for the open air. Other good kinds in this effective group were *Mme. de Montraveau*, *Ulrich Brunner*, the fine old *Rose Juno*, one of the best of all for perfume, and standards of *Mrs. John Laing* and *Merveille de Lyon*. Messrs. Paul and Son were second in this class, showing good plants of *Celine Forestier*, *Her Majesty*, *Alfred Colomb* and several dwarf plants of the *Polyantha* section, which they grow so well, *Camille Rochatelle*, a pure white variety, being one of the best of these. The remaining group class was that for Malmaison or other Carnations, in which Mr. Turner was again first, showing *S. de Malmaison* only in two colours, the pale flesh-coloured and the bright rosy pink varieties; the plants were finely grown, carrying several large flowers upon each, these being in a fresh condition. In the cut-flower classes, the best things were the Orchids in bunches of twelve varieties, in which Mr. Prewett, Swiss Nursery, Hammersmith, was placed first with a very bright and showy exhibit, comprising, however, hardly sufficient diversity. Of *Cypripediums* there were five kinds—*C. Argus*, extra good; *C. caudatum*, a fine spike; and good bunches of *C. Lawrenceanum* and *C. hirsutissimum*; other good things were *Cattleya Mossiæ* and *C. Mendeli*, *Cymbidium Lowianum* and *Odontoglossum Alexandræ*. Mr. Wythes was a very close second, having most decidedly the finest half dozen bunches; these were *Vanda teres* of high colour, *Cattleya Skinneri* (a large bunch), *C. Mendeli*, *C. Mossiæ*, *Lælia purpurata*, and *Epidendrum radicans*, with fine blooms of *Anguloa Clowesi*; with more room allowed in arrangement these would have looked much better. For bouquets of Orchids there was no competition, but in the class for a basket of cut Orchids Mr. Prewett won with an arrangement, light, pleasing, and effective, there being no overcrowding, nor, on the other hand, the opposite extreme of scarcity in the amount of flowers employed; *Cattleyas*, *Odontoglossums*, *Masdevallias*, and *Dendrobiums* were the component flowers, with light Fern fronds and *Asparagus* as foliage accompaniments. Mr. Wythes was placed second in this class with an effective arrangement of pyramidal outline.

The miscellaneous exhibits comprised the following: From Mr. Offer came several well-grown Heaths and other hard-wooded plants, *Erica Cavendishiana*, *Statice profusa* and a good *Aphelexis* being the best of these. Mr. T. S. Ware had a stand of his new *Carnation Pride of Great*

Britain, the flowers as large as Malmaison, of a pale yellow or sulphur colour, but apparently devoid of perfume to a large extent. Other good things comprised a fine group of hardy flowers and plants, including *Pyrethrums*, of which *P. Hamlet*, a soft rosy pink, was the finest and the most distinct, *Inula glandulosa*, *Iberis corifolia*, *Irises* in variety and *Cypripedium candidum*, *C. aculeum* and *C. parviflorum*, with early Lilies, making in all a fine display. Mr. Anthony Waterer had a fine group of *Azalea mollis-pontica* hybrids in excellent variety. Mr. Mount, Canterbury, contributed several boxes of cut *Roses*, the best of which were *Maréchal Niel*, *Catherine Mermet*, *Anna Ollivier* and other Teas, with *La France* and *Duke of Wellington* in addition. Messrs. Balchin again showed *Leschenaultia biloba* major, finely grown, and Mr. Tasker, Middleton Hall, Brentwood, had a splendid display of the best kinds of dwarf *Canas* in a cut state—quite a feature in itself, the finest being *François Corbin*, *Comtesse d'Estoule* and *Progression*. Messrs. Paul and Son had also two fine new kinds in *Comte de Germiny* and *Sophie Buchner*. The finest exhibit, however, by far in the miscellaneous section was the grand group of herbaceous *Calceolarias* from Messrs. Sutton and Sons, Reading. These plants were specimens of their kind, the strain of the finest possible quality, the yellows amongst which were conspicuous by their purity of colour, fine size and form, the dark selfs and spotted varieties being equally good. This was a large and fine exhibit in the best possible condition, forming a fine bank of colour. To this group a silver-gilt medal was most deservedly awarded.

Fruit Committee.

In the fruit classes some very fine fruit for so early in the season was shown. For three bunches of black Grapes, Mr. J. McIndoe, gardener to Sir J. W. Pease, Hutton Hall, Guisborough, was an easy first with large nicely coloured bunches of Black Hamburg. For the best three bunches of white Grapes any variety, Mr. McIndoe was also first with well-proportioned Foster's Seedling, quite ripe and beautifully finished. For the best three dishes of Strawberries, Mr. Norman, gardener to the Marquis of Salisbury, Hatfield, was far ahead of all competitors, showing very fine *Comptometer*, Sir C. Napier, and *Vicomtesse H. de Thury*; second, Mr. W. Allan, gardener to Lord Suffield, Gunton Park, Norwich, he staging his new seedlings *Lord Suffield*, *Gunton Park*, and *Empress of India*. For a single dish, Mr. Norman was again first with grand fruits of *Auguste Nicaise*. The first prize for the best dish of Peaches was awarded to Mr. H. Robins, gardener to Col. Lee, Hartwell House, Aylesbury, he having very fine well-coloured *Alexander*. For the best dish of Nectarines, Messrs. Rivers were first with their new *Nectarine Early Rivers*; second, Mr. McIndoe, with equally fine fruits of *Lord Napier*, but not quite so ripe. The same exhibitor was first for a very good dish of black Tartarian Cherries. Messrs. Rivers sent a box containing twenty-four fruits of their new *Nectarine* to show its early forcing qualities. A few fruits of *Lord Napier* forced in the same house were sent to show the difference in earliness, but from the appearance of the latter they must have been much shaded, as *Lord Napier* is an excellent early variety, as Mr. McIndoe's dish showed. First-class certificates were given to the following new Strawberries raised by Mr. Laxton, and sent by Mr. Norman: *Royal Sovereign* was recently certificated by R.H.S. and does not need describing, it being here sent to show its value as a forcing variety. It possesses much of the British Queen flavour, and is a valuable addition to our list of good fruits. *Laxton's Sensation*, also a large bright scarlet fruit, somewhat wedge-shaped, is very handsome. It is stated to be an early variety, and also excellent for pot culture. The fruits were not tasted, so that the flavour, so essential in new fruits, was not tested.

A full prize list will be found in our advertisement columns.

ROYAL HORTICULTURAL SOCIETY. TEMPLE SHOW.

MAY 25 AND 26.

THE council of the society are to be congratulated upon another magnificent display in the Temple Gardens. In spite of the forecast that Orchids would be past their best and that other things would be severely tried by reason of the character of the season, there is nothing lacking, and it is very doubtful if a finer show in all respects has ever been held under its auspices in the Temple Gardens. The arrangements are, in the main, similar to those of former years, and it would be a difficult matter to improve upon them, considering the space at disposal. The first marquee entered contains a fine display of hardy herbaceous flowers, Ferns, &c. The second has a magnificent lot of tuberous Begonias from the best known growers, also several miscellaneous collections of plants and the overflow of Orchids. The large marquee, as usual, has the greater part of the Orchids upon the central stage, and this, taken as a whole from the entire body of the exhibitors, has never been surpassed in the effectiveness of the arrangement, the plants of *Cocos plumosa* used through the greater part of the centre being a relieving feature to the mass of flower—an improvement certainly. The sides were mainly composed of pot Roses, mixed groups of hardy plants, some really grand fine-foliaged plants, especially Crotons, Caladiums, Alocasias and Anthuriums. These side groups were likewise in their effectiveness of arrangement a further improvement. The last, a long marquee, contained miscellaneous exhibits and all the fruit, which, although not plentiful, was of excellent quality for the month of May. There was abundance of room for inspection and promenading through the entire show, safeguarded against any discomfort in the event of rain by being boarded throughout.

Orchids.

These may not in actual numbers have been so numerous as in the last show or two, but this was well compensated for by the superior quality. The exceedingly choice group sent by Baron Schröder from his renowned collection at The Dell, Egham, and that from Sir Trevor Lawrence, which was of similar excellence and *recherche* in character, with, as usual, several unique varieties, were staged together, and a grand display they made. The Dell collection comprised a magnificent selection of Cattleyas and Lælias, *C. Mossiæ*, *C. Mendeli*, *C. Lawrenceana*, *C. Skioneri* (extra fine colour), and *C. Warscewiczii* Sanderiana (syn., *gigas*) with extra large and fine flowers; *Lælia purpurata* was represented by fine varieties also. *Vanda teres* was finely shown here; so were the *Odontoglossums*, of which the finest were the grand varieties of *O. crispum*, for which The Dell collection is famous; *O. crispum apiatum* was the finest with well-marked flowers, the spike an extra grand one; *O. crispum xanthotes* is a superb, pure white variety. *O. Ruckerianum*, *O. triumphans*, and *O. excellens* were also represented. *Cypripediums* were present in the best forms—*C. Morganii burfordiense*, the finest varieties of this choice hybrid, *C. caudatum*, *C. Lawrenceanum* and *C. Stonei* (especially fine) deserving particular notice. *Masdevallias* were strongly shown—*M. Veitchiana grandiflora*, *M. Veitchi* (the type) and *M. Harryana* being the very finest. Other good things comprised *Miltonia vexillaria* in extra choice variety; *Sobralia macrantha Kinnasteana*, a pure white variety of the greatest excellence. Sir Trevor Lawrence had rather smaller plants, but in fine condition. Among these were splendid examples of *Vanda teres* on rafts and *V. suavis*, *Cattleya Mossiæ*, *C. Mendeli*, and *C. Wagneri* (the white *Mossiæ*), delicately beautiful, quite a gem; *Lælia purpurata* was in fine condition. *Aerides Savageanum* and *A. Houlettianum* were also in fine form; so were the *Odontoglossums*, of which *O. citrosimum roseum* and the type were in strongest numbers. *Miltonia vexillaria* was also shown in beautiful varieties; *Cypripedium Rothschildianum* bore very fine flowers; so did *C. Swainianum* and

C. superciliare. *Dendrobium Bensoniæ*, *D. Parishii*, *D. Falconeri giganteum*, and *D. Dearei* (extra fine). *Sobralia macrantha*, and *Phaius Sanderianus* were also shown here in fine condition.

Taking the groups in the order of staging, the next was that from Messrs. Sander and Co., who have, as in former years, a grand exhibit, forming a fine bank of colour. Here was to be seen a splendid mass of colour in *Epidendrum vitellinum majus*, backed up by finely-grown and choice varieties of *Odontoglossum crispum*, *O. citrosimum*, *O. Inseayi*, with *Miltonia vexillaria*, extra fine forms, as an edging. *Cattleya Mossiæ* was shown here in large numbers, large plants of *Cymbidium Lowianum* in profuse flower, *Anguloa Ruckeri* and *A. Clowesi*, freely flowered plants. The new kinds, of which fuller notice is reserved for next week, included *Odontoglossum Wattianum* (Hardy's var.), *Cattleya Mendeli alba*, very pure; *C. O'Brieniana splendens*, *Epidendrum Randi* and *Miltonia vexillaria Princess May*, a delicate form with fine flowers; *M. v. Leopoldi* (Owen's var.), with dark maroon blotch on the lip; and *M. v. H. E. Milner*, with pure white lip. *Lælia purpurata nobilior*, a splendid dark form, was also shown.

Messrs. B. S. Williams and Son, Upper Holloway, also had a large and attractive group of well-grown plants, embracing almost everything in season. The best *Vandas* were to be found here, vars. of *V. tricolor* and *V. suavis*, *Cymbidium Lowianum* in fine condition; *Epidendrum vitellinum majus*, *Dendrobium thyrsiflorum* and *D. Dearei*, *Cattleya Lawrenceana* (extra fine mass of rich colour), *Cypripediums* in variety, including *C. Morganii* and *C. superciliare*, several good *Odontoglossums*, other *Cattleyas* and *Lælias*, made in all a fine display. Messrs. H. Low and Co., Upper Clapton, were particularly strong in *Cattleyas* and *Lælias* in fine variety, *C. Mossiæ Princess May* and *L. grandis tenebrosa* being the finest. *Cypripedium bellatulum* was here shown in masses, and *Phalænopsis* in variety also. Mr. C. J. Lucas, Warnham Court, Horsham, showed a bank of plants in profuse flower, comprising numbers of *Cattleyas* and *Lælias*, in which *L. purpurata* (Warnham Court var.), with very richly coloured flowers, was one of the finest forms in the show. *Oncidium ampliatum majus* here bore fine spikes; so did *Grammatophyllum Fenzlianum* (Seeger's var.), with extra long and fine spikes of its curious flowers; *Oncidium macranthum* was also in grand form. *O. crispum* was also shown here, and numbers of *Odontoglossums* of kinds not often seen; *Cœlogyne asperata*, *Gongora leucochila*, *Cattleya Schilleriana*, and several of the *Chimæra* section of *Masdevallias*.

Mr. J. Cypher, although he sent from Cheltenham a large number of plants to Manchester last week, was enabled again to stage a large and showy group, amongst which *Lælia purpurata* in several varieties of extra quality were the most conspicuous. *Dendrobium thyrsiflorum* and *D. moschatum*, *Odontoglossum vexillarium* (*Miltonia*), *Cattleya Mossiæ*, and several *Oncidium*s and other *Odontogloss*s were also staged. One variety of *Lælia purpurata*, called *Niobe*, was specially rich in colour, making in all a very fine group profusely in flower.

Messrs. Heath and Son, of Cheltenham, had a few good plants of *Lælia purpurata* and a hybrid *Lælio-Cattleya* (*L. purpurata* × *C. Mossiæ*). Mr. Hamar Bass, Byrkley, Burton-on-Trent, had eight fine plants of *Cattleya Mossiæ*, most of which were really large specimens, the largest fully 2½ feet across, and one mass of flower.

Messrs. W. H. Lewis and Co., Southgate, staged a mixed group, in which *Cattleya Mossiæ* was prominent, *C. Mendeli* and *L. purpurata* also in good condition. *Vanda cœrulea* was also shown here quite out of its proper season, but in good condition, several other good things being included. Mr. F. Wigan, Clare Lawn, East Sheen, had a small, but choice group, in which were to be found *Cypripedium Curtisii*, *Brassavola Digbyana* and *Aerides Fieldingii* being also shown. Messrs. Pitcher and Manda had a mixed group of Orchids and *Sarracenias*. Of the former, *C. Mossiæ* was in

strong force; *Odontoglossums* and *Cypripediums* in good variety also. Mr. Wythes sent from Syon House Gardens a very pretty group, in which *Vanda teres* was finely shown, rich in colour, with as many as eight flowers to the spike, *Cypripedium barbatum superbum*, *Lælia purpurata*, and *Cattleyas* in variety adding to the display, as did *Odontoglossum hastilabium*.

Messrs. Charlesworth, Shuttleworth and Co. staged a showy group, wherein were several finely flowered plants of *Oncidium macranthum*, the best group of this species in the show; *Lælias* as *L. grandis tenebrosa*, were also shown in quantity, and *Cattleya intermedia alba* (one plant). Major-General Berkeley showed the small-flowering *Dendrobe*, *D. amœnum*, a very pretty species of slender growth.

Baron Schröder, in addition to the group already noted, had a grand specimen of the Necklace Orchid, *Cœlogyne Dayana*, with about two dozen spikes, the longest fully 3 feet in length, a magnificent plant, and a fine example of cultivation.

Messrs. J. Laing and Sons showed several good plants of Orchids in the mixed group of flowering and fine-foliaged plants. Mr. Reginald Young, of Liverpool, sent *Cattleya Mendeli*, Young's var., with almost pure white sepals and petals, and a finely-fringed lip. Several hardy *Cypripediums* were staged by various exhibitors with the hardy herbaceous plants.

Hardy Flowers.

These formed, next to the Orchids, the most important feature of the show, and filled a large amount of space. The most tastefully set-up exhibit came from Messrs. Backhouse and Son, of York, who had a remarkably natural display, alpine shown amongst little rocks—a useful way of displaying them, because showing how such things should be treated in the garden. Very conspicuous were *Heuchera sanguinea*, *Daphne cneorum*, *Geranium argenteum*, rose, the colour very soft; *Gentiana bavarica*, as fine as we have seen it; hardy Orchids; *Primula japonica*, *Anthropodium cirrhosum*, the plants bearing spikes of white flowers; and the beautiful new Broom, or at least comparatively so, *Cytisus Andreanus*. If exhibitors were to try and make the things they show look as though they were growing in some way naturally, the shows would be more interesting and instructive. This the York firm succeeded in accomplishing. The display from Messrs. Barr and Son, Long Ditton, was remarkably effective, comprising all the chief things in flower now. The group was especially strong in *Pæonies*, and we made a note of the following kinds: The Moor, deep crimson, single; Beauty, rose; Queen of May, a charming colour; also a large array of *Iris*s, *Aster alpinus*, *Pyrethrum* in great variety, Iceland Poppies, *Saxifraga Camposi*, the white-flowered *Sidalcea candida*, Eastern Poppy, *Delphiniums*, a large collection of *Pansies* and *Pinks*. We must not omit to mention *Hieracium villosum*, yellow, a bold showy plant; *Cistus florentinus*, a large array of *Ixias*, *Iris*s, particularly *I. spuria*. A. W. Tait, a very beautiful light lavender coloured flower; *Lilies*, *Inula glandulosa*, *Delphinium nudicaule*, the curious *Iris susiana*, and a collection of *Tulips*, florists' varieties especially, breeders, *hyblœmens*, &c., a very good exhibit. A very charming show was made by M. van Tubergen, junr., Haarlem, Holland, a select collection, comprising the curious black-flowered *Fritillaria kamschatcica*, *Iris Lorteti*, very lovely, the standards large, soft lilac, with deeper coloured veins, the falls yellow, ground thickly spotted with velvety maroon; *I. Boissieri*, rich blue, a striking colour; *I. iberica*, silvery white standards, dark coloured falls; *I. paradoxa*, *Calceolus pulchellus*, and other interesting things. Messrs. Kelway and Sons, Langport, Somerset, had a fine display of cut hardy flowers in boxes, the *Pæony*, *Pyrethrum*, *Iris*, *Amaryllis*, and *Delphinium* being exhibited in fine character; of *Pæonies*, all double, we made special note of Toledo, rose; Alfred Henderson, rose; Kate Marsden, creamy white touched with rose; whilst *Gaillardias* were good, particularly the variety

Vivian Grey, yellow. Amaryllises were also exhibited in great variety. We shall make further reference to these. Irises were remarkably good, and single Pyrethrums, Irene, white; James Kelway, crimson; and of double kinds, floribundum plenum, rose; Evelyn, rose; and Aphrodite, white, very fine varieties for cutting. A very pleasing exhibit to Tulip growers consisted of the English florists' varieties from Mr. J. Bentley, Stakehill, Castleton, Manchester—William Wilson, black feathered bizarre, a large lemon ground; Heroine, feathered, rose, very fine bloom; and Annie McGregor, a lovely rose breeder, being noteworthy. Messrs. J. Laing and Sons, Forest Hill, had a good display, the flowers remarkably well staged. Anthericums, Spanish Irises, Campanula persicifolia grandiflora alba, a lovely white flower, one of the most beautiful things in the exhibition; Campanula glomerata in variety, but not one equals dahurica, very rich blue; Lilies, Saxifraga McNabiana, white, dotted with rose; tufted Pansies of many kinds, Oriental Poppies, and Iris Mme. Chereau, the great market kind, were well shown. A beautiful group was that from Mr. Pritchard, Southborne Nursery, Christchurch, and the various things were well staged. The collection was rich in forms of Papaver orientale, Prince of Orange, rich orange, and Blush Queen, blush, being the best, whilst a note may be made of Iris juncea, Geum miniatum, the deep crimson Dianthus cruentus, Achillea mongolica, a splendid white flower; Dictamnus Fraxinella alba, Gaillardias, Titoma caulescens, Eremurus robustus, very handsome; the scarlet-flowered Delphinium nudicaule, Coronilla iberica, yellow, a pleasing little rock plant of creeping growth, and Cytisus Andreanus, a very good form. Many large bunches of Irises came from Messrs. Collins Bros., Waterloo Road. All the chief kinds, such as pallida, Mme. Chereau, Cordelia, standards deep blue, falls velvety purple; aurea, Imogene, lavender; Minico, standards yellow, the falls velvety crimson, were shown. Another large display came from Messrs. Cheal and Sons, Crawley, who had a miscellaneous collection. Tufted Pansies were in force, including Princess May, a curiously mottled flower, deep velvety red, and Archie Grant, Max Kolb, Duchess of Sutherland, Blue Cloud, Peacock. Tom Thumb Dahlias in pots were also shown. The same firm also had a large quantity of cut hardy flowers. Messrs. Wm. Cutbush and Sons, Highgate, had a large exhibit of hardy flowers, comprising Papaver orientale in variety, Iceland Poppies, Lychnis viscaria splendens fl.-pl., a splendid rose colour, Ixias, Pyrethrums, Campanula persicifolia alba*grandiflora, Heuchera sanguinea, and Achillea mongolica. The Yorkshire firm, Messrs. Harkness and Sons, Bedale, had a well-staged collection of cut blooms. The Pyrethrums were very fine, and the single kinds, Vivid, rich crimson; Mrs. Harold Barnett, rose; and Mrs. Bruce Findlay, rose, were most noteworthy. A very conspicuous single Pyrethrum named Jubilee from Messrs. Balchin and Sons, Hassock's Gate, Sussex, is a single flower, neat, not large, and of the deepest crimson. A very interesting display came from Messrs. Paul and Son, Cheshunt, who had the usual hardy things, many of which have been already enumerated. Campanula glomerata in variety was well shown, pallida and dahurica in particular, whilst also noticeable were the rich blue Iris orientalis, Lupinus polyphyllus albus, a mass of white; Pyrethrum Samvanburgh, double white; a brave show of Veronica rupestris, Spiræa palmata and its variety alba, and S. multiflora compacta, dense spikes of creamy white flowers. Mr. T. S. Ware, of Tottenham, had many interesting things in hardy plants, and flowers of Carnation Pride of Great Britain. It is mere repetition to enumerate the various things in each exhibit.

The tufted Pansy was well represented at this exhibition. The collection from Messrs. James Cocker and Sons, of Aberdeen, was of much interest, and they also had a large variety of hardy things. In the heat of the tent the flowers fared very badly. The Hardy Plant Company, Guild-

ford, had an interesting display, set up something in the style of the York firm, and commendable as a relief from the monotonous effect of the bunching style. Messrs. Dobbie and Co., Rothesay, had a large display of tufted Pansies and the florists' varieties, including all the leading sorts. Of the former, Sylvia, cream colour; Violetta, white; Lemon Queen, lemon, and others were shown. It is important, however, not to give names to kinds that are insufficiently distinct from others in cultivation. Not a few are very much alike. Mr. G. Yeld, Clifton Cottage, York, had an interesting variety of Hemerocallis, Frances and Apricot the two finest, the flowers large and of beautiful shades of yellow. It was a praiseworthy exhibit. A large collection of Pansies and tufted kinds was exhibited by Mr. A. Smith, Prospect House, Downley, High Wycombe.

Tuberous Begonias.

The display of tuberous Begonias was the finest that has been seen at any Temple show. We think this is no exaggeration, and the group from Messrs. H. Cannell and Sons, of Swanley, was, in its way, unique. The single varieties were conspicuous for their immense size, although we do not care for such immense things, the neater, smaller flowers being far prettier. A variety named Campania had a flower measuring nearly 8 inches long and 6 inches in breadth; whilst other single kinds of note were Col. Kidd, very large, scarlet; Fantastic, rose, white at the base; Mrs. John Thorpe, white, with a broad margin of rose; Mrs. Alexander, orange; Duchess of Westminster, rose-salmon; Seven Inch, rich crimson; whilst of the doubles, very fine were the following, all of that loose rosette type which we much admire: Mrs. Edith Wynne, white, very beautiful; Lady Roberts, salmon-buff; Mrs. Mart, salmon; Thos. Dixon, deep crimson, and the Rev. Lascelles, yellow. We may mention here that the same firm also had a bold group of Gloxinias, the plants neat in habit, well grown, and the flowers representing great variety of colours, spotted and other types. Messrs. J. Laing and Sons also had a good display of tuberous Begonias, representing their strain in perfection. The doubles worthy of special mention were Baron Schroeder, scarlet; Lady Theodore Inwood, yellow, touched with salmon; Duke of Fife, salmon-rose; Baroness Henry de Worms, a beautiful salmon colour, a delightful shade; Mrs. Hudson, carmine-rose; Baroness Burdett Coutts, salmon-rose, and Mrs. Regnart, yellow, very light centre. Countess of Westminster, large single flower, light yellow, broad salmon margin, is a fine type. Mr. Ware had a group that deserved much praise. Pavonia, double yellow; Regina, single white, with rose margin; Princess May, double white; Beauty of Belgrave, double rose; Bexley Gem, rich rose-carmine; Elegans, salmon-rose, white in the centre; alba floribunda, white, yellow centre; and Senora, brilliant orange, were noteworthy. Amongst amateurs, a very interesting group came from Mr. G. A. Farini, Perry Vale, Forest Hill, the plants well grown, and including seedlings of much promise.

Roses.

These were very fresh and attractive. A good group was shown by Mr. Rumsey, Joyning's Nursery, Waltham Cross, the exhibits comprising plants and cut flowers. The Roses well shown were Maréchal Niel, the beautiful copper Austrian Brier, Harrison's Brier, Rosa rugosa, and its white variety, Silver Queen, Heinrich Schultheis, Star of Waltham, Mabel Morrison, Centifolia rosea, and The Queen. This bold arrangement was in every way creditable. Messrs. Paul and Son, Cheshunt, showed single rose Carmine Pillar, the flowers large, and brilliant crimson in colour; Copper Austrian Brier, and such interesting types as Rosa pomifera, rubrifolia, Janet's Pride, and a fine standard of Mme. de Watteville, Innocente Pirola, Francisca Kruger, Celine Forestier, and Lady Alice. A large number of plants of Crimson Rambler, the fine Polyantha Rose, previously noted in THE GARDEN, were shown by Mr. Chas. Turner, of Slough. Mr. Frank Cant, of Colchester, had a charming lot of cut Roses. The

flowers were very good, particularly those of Mme de Watteville, Rubens, Edith Gifford, and Marie van Houtte. Messrs. Keynes, Williams and Co., Salisbury, had a lovely collection of Brier Roses, Austrian Copper, and the beautiful crosses of Lord Penzance, which were commented upon in THE GARDEN recently. Messrs. G. Cooling and Sons, Bath, had a fine display of garden Roses, such as Janet's Pride, Rosa rugosa and its variety alba, Paul's single white Perpetual, a lovely flower, Persian Yellow, and other interesting kinds. Mr. G. Mount, Rose Nurseries, Canterbury, showed Roses well, Catherine Mermet, The Bride, Niphetos, Ulrich Brunner, Mrs. John Laing, Gustave Piganeau, and La France in particular. Lord Penzance, Godalming, showed Sweet Brier crosses of much beauty, to which we shall make further reference.

Stove and Greenhouse Plants.

This department was well represented, but such things as Anthuriums, Rhododendrons, and Azaleas were not plentiful. We may take the plants of Messrs. J. Veitch and Sons first, and the Chelsea firm showed a large assortment. Their Streptocarpuses were of much value, the colours varied, and the plants thoroughly useful in every way. Their Gloxinias also were noteworthy, such varieties as Monarch, scarlet; Cygnet, white, margin of purple; Orestes, scarlet; Argus, white, beautifully spotted with rose, and other kinds; whilst also shown were Tillandsia Morreni, crimson base, the other portion yellow, and several fine indoor Rhododendrons—Ruby, crimson; and Ariel, yellow; the colours remarkably clear. Strobilanthes Dyerianus, metallic rose and green margined leaves, was of note, also a good plant of Manettia bicolor, the flowers crimson tipped with yellow. In the Orchid tent this firm had a beautiful group, consisting largely of hardy trees with variegated leafage, Hydrangea paniculata grandiflora, Azalea roseiflora, Lilium Harrisii, Hydrangea hortensis in variety, and plants in full beauty of Clethra alnifolia; besides Japanese Maples and other things—a rich blending of colour. Messrs. H. Low and Co., Upper Clapton, exhibited largely varieties of Ericas, E. ventricosa in particular, and in the large tent they had good specimens of various hard-wooded things. All the plants were remarkably well grown. Messrs. Reid and Bornemann, Sydenham, had a large group of Pelargoniums, and a good Lobelia, the leaves yellowish in colour and the flowers blue, besides Amaryllises and dwarf Cannas. Messrs. J. Carter and Co., High Holborn, had a large display of Mimuluses, representing their very fine strain, Gloxinias, Petunias, and a large group of Calceolarias. Want of space prevents further mention of this exhibit. Messrs. Sutton and Sons, of Reading, exhibited a large bank of their splendid strain, and also Nemesis strumosa, the new annual, which is excellent for pots thus early in the year. Messrs. Peed and Sons, Roupell Park Nurseries, sent a fine group of Gloxinias, the plants dwarf, and the flowers rich and varied in colour. Messrs. E. D. Shuttleworth and Co., Peckham Rye, had Cycads, Sonerilas, and other interesting exhibits—a fine display. We must also praise the very fine group of Pelargoniums, representing a large number of the finest varieties in cultivation, from Mr. H. J. Jones, Ryecroft Nursery, Lewisham, also the Ivy-leaved Ryecroft Surprise, a fine flower, of rosy colour, very pleasing. The large group of Caladiums from Messrs. J. Laing and Sons was very handsome; all the novelties we shall describe next week. Crotons, Cycads and allied plants from Mr. E. Offer, gardener to Mr. J. Warren, Handcross Park, Crawley, were noteworthy for their fine culture. Miscellaneous plants, such as Caladiums, Hydrangeas, Azaleas, &c., were shown by Messrs. J. Peed and Sons. For culture the splendid stove plants from Mr. P. Crowley, Waddon House, Croydon, were amongst the finest exhibits in the exhibition.

A superb group, one of the finest in the exhibition, came from Messrs. Cutbush and Son. The most noteworthy things were the Leschenaultia biloba major, Dracæna Doucetti, and three varieties of

Crassula coccinea, rosea having rose flowers, alba, and rubra rich rose; whilst *Calla Little Gem* was well shown. Messrs. J. Laing and Son had also a miscellaneous group of stove and greenhouse plants. Messrs. B. S. Williams and Son had a group of *Clivias*, *Anthuriums*, an *Amayllis* of much merit, and other interesting things, as *Calamus grandis*, to which we shall make further reference. Other exhibits comprised a very beautiful collection of French Cannas from Mr. J. C. Tasker, Brentwood, Essex. A number of interesting plants came from Sir Trevor Lawrence, Bt., comprising forms of *Anthurium* and the charming little orange-flowered *Cyrtanthus Huttonii*, to which we shall make further reference. Mr. G. F. Wilson, Weybridge, showed the beautiful *Primula Reidi*, and Messrs. R. Veitch, of Exeter, had forms of *Vallota purpurea*, that shall receive further mention. The beautiful seedling *Malmaison Carnations* from Mr. Martin Smith we shall also note. Mr. Walker, of Thame, Oxon, had a large collection of *Pelargoniums*. The new plants, which were of great interest, from Messrs. Sander and Co., of St. Albans, and Messrs. B. S. Williams and Son, Upper Holloway, will be dealt with in a future issue.

Cut-flower arrangements, bouquets, &c., from Mr. J. Chard, of Stoke Newington, and Messrs. Perkins and Sons, Coventry, were tasteful and occupied much space.

Ferns.

The large collection of Ferns from Messrs. W. and J. Birkenhead, Sale, near Manchester, were quite one of the features of the exhibition, and the group from Mr. H. B. May, Edmonton, was also meritorious. Want of space prevents further allusion to them at present.

Fruit and Vegetables.

Messrs. Rivers, Sawbridgeworth, sent two dozen trees of their new Nectarine, Early Rivers, laden with fruit, the trees being very healthy and the fruit large. This received a first-class certificate last year. Two dozen fine fruits were also staged in splendid condition. This is a very early kind, much like Lord Napier, but earlier (silver-gilt Knightian medal). Mr. S. Mortimer, Rowledge, Farnham, sent four dozen Melons, including Conqueror, Hero of Lockinge, Sutton's A 1, and Golden Perfection; a very fine lot of Tomatoes in ten varieties, the best being Perfection, Conqueror, Magnum Bonum, Sharpe's Plentiful, Sutton's Maincrop, Earliest of All, and selections from Perfection; five boxes of Cucumbers, including two new seedlings, Princess May and Prince George, too much alike to merit a special award. The new variety Success, certificated last year, and a new seedling Melon named Duke of York were also shown (silver-gilt Knightian medal).

Mr. J. C. Tallack, gardener to Mr. E. Dresden, Livermere Park, Bury St. Edmunds, was awarded a bronze Knightian medal for six very fine dishes of Brown Turkey Figs, beautifully finished and of immense size. Mr. G. Wythes, gardener to the Duke of Northumberland, Syon House, staged very fine Lord Napier Nectarines and Brown Turkey Figs (bronze Knightian medal). Mr. G. Featherley, The Vinerie, Gillingham, Kent, staged good baskets of Black Hamburgh and Muscat of Alexandria Grapes hardly ripe, Dymond Peaches, very good Eclipse Tomatoes, Carter's Model Cucumber and Beans (silver Knightian medal). Mr. J. Miller, gardener to Lord Foley, Ruxley Lodge, Esher, sent Noble, Bioton Pine, and Sir J. Paxton Strawberries, six Melons, Figs, and Cherries (bronze Knightian medal).

Twelve large Melons were staged by Mr. John McKinley, Belmont House, East Barnet. A new seedling Melon was also sent by Mr. Riching, gardener to Dr. Frankland, Reigate; it was over-ripe. Seedling Melons were also shown by Mr. Molyneux, Rokesbury Park, Wickham. Four nice Melons Best of All and Lord Napier Nectarines, Condor, Bellegarde, and Grosse Mignonne Peaches, were also sent in fine condition by Mr. McIndoe, Hutton Hall. A seedling Melon named Whitfield Hybrid was sent by Dickson's (Limited), Chester. Twenty-eight dishes of Apples were sent by Messrs. Veitch, Chelsea, the best being Baldwin, Alfriston,

Rhode Island Greening, King of Tomkins Co, Graham's Apple, Rostocker, and Winter Colman. Rhubarb of very large size was sent by Mr. Osman, District Schools, Sutton, Surrey. A twin Cucumber was exhibited by Mr. Hope, gardener to Lord Jersey, Bicester, Oxon. Very fine Sharpe's Victor Potato and Telegraph Cucumbers were sent by Mr. J. Walker, nurseryman, Thame, Oxon.

We hope to give next week an official list of the awards.

PUBLIC GARDENS.

THE HON. MRS. FITZWYGRAM, of Hampton Hill, has presented to the local board of Hampton 2 acres of land, to be used as a recreation ground for the inhabitants of the parish.

The Paddington Recreation Ground.—The Unopposed Bill Committee of the House of Lords have passed the bill promoted by the Vestry of Paddington to acquire from the Ecclesiastical Commissioners, for the use of the public, the open space known as the Paddington Recreation Ground. This bill has now been sanctioned by both Houses.

The Alexandra Palace and Park.—The movement for the acquisition of the Alexandra Palace and Park appears to be falling very flat. The suggestion in consequence has been made that, should the scheme fall through, the promoters might do worse than devote some portion of the subscribed funds to the purchase of Church Yard, Bottom Wood, Highgate. This wood excels in the opinion of some the sylvan beauty of the adjoining Gravel Pit Wood. It is the property of the Ecclesiastical Commissioners, who ask £25,000 for its purchase.

Goldhurst Fields, South Hampstead.—With a view to secure the Goldhurst Fields in South Hampstead as a public park, a meeting was lately held in the school-room of St. Mary's, Kilburn. The vicar of St. Mary's, the Rev. Mr. Robertson, occupied the chair, and speeches in favour of the acquisition of this open space were made by Dr. Monro Gibson, Mr. James Huxson, and one or two members of the local vestry. As the ten or twenty acres which are now threatened by the builder are two miles distant from Hampstead Heath and more than a mile from either Kilburn Park or the Paddington Recreation Ground, the desirability of securing it as a new "lung" is obvious.

Opening of Bostall Woods.—On Whit Monday Bostall Woods, a new metropolitan open space forming the extreme south-eastern boundary of London, was opened to the public. Bostall Heath, comprising 55 acres, has been open to the public for some years, and to this was added 61 acres of wood, mostly Pine and Larch trees. The wood has been purchased from Sir Julian Goldsmid at the joint cost of the London County Council and the Plumstead District Board of Works at £200 an acre, the total sum being about £13,000. The 116 acres of heath and woodland form perhaps the prettiest and most rural open space in the county of London. During four years the Council had increased the area of open spaces in London from 2636 to 3630 acres.

Hackney Marshes.—It will be remembered that £2000 has for some time past been required by the Board of Works to complete the purchase of the Hackney Marshes. The Open Spaces Committee of the Hackney Board, and their chairman, Mr. R. Parker, deserve the thanks of all East London for the great efforts they have made to obtain this sum. The City Corporation was first asked to give some help out of the large funds at their disposal, but they declined to contribute a penny for the welfare of the East End. At last these efforts have been successful, and the £2000 has been secured, so that Hackney and the surrounding parishes may now look forward with confidence to having this additional area of 340 acres added to their at present scanty share of open spaces.

The weather in West Herts.—The prolonged drought of the present spring, which was brought

to an end by a thunderstorm on the afternoon of Wednesday, the 17th inst., lasted ten and a half weeks, during which period less than half-an-inch of rain fell. According to Mr. Symons, this was the longest partial drought known in the neighbourhood of London since 1854, or for thirty-nine years. As, however, that drought began more than three weeks earlier in the year, it could not very well have been quite as trying to vegetation as the one we have recently experienced. Since then some rain has fallen on very nearly every day, but to the aggregate depth of only about three-quarters of an inch. Although this drought may be said to have ended, the long spell of warm weather still continues, the past week being the eighteenth unseasonably warm week in succession. The temperature of the soil at 1 foot deep now stands at 60°, and at 2 feet deep at 59°. On the same day last year the readings were respectively 59° and 54°. The first ripe Strawberry (Laxton's King of the Earlies) was gathered here on Saturday last.—E. M., Berkhamsted.

The degradation of book illustration.—In these days of processes we regret to see some of what one might expect to be the finest book-work degraded by vulgar process blocks. In the new volume of the "Life and Works of J. Ruskin" we find printed on genuine Japanese paper processes of the worst description, of which Mr. Ruskin's home at Herne Hill (Vol. I., p. 107), drawn by Arthur Severn, is an example. Such a travesty of engraving would hardly be passed by the editor of an artistic *Police News*. If publishers bring out very expensive books on Japanese and hand-made paper, they might surely afford a decent engraving, if not on steel or copper, at least on wood. It is not that we object to a process as a process, but in the cases we mention it is most false in gradation of tone—no truth nor value at all. It is little less than a fraud on the public to issue such rubbish in costly books, and, above all, in books on the "life and work" of a man who has done so much to awake people to the beauty of Nature and refined and true art.

Mr. J. B. Webster.—We regret to announce the death of Mr. J. B. Webster at the age of 74 years. Mr. Webster, who was a frequent contributor to our columns on planting, was at one time forester at Balmoral Castle and for many years estate manager to Sir William Verner Churchill, Verner'sbridge, Ireland.

Names of plants.—A. Wittingham.—1, no flowers; 2, *Saxifraga hypnoides*; 3 and 5, *Saxifraga muscoides* var.; 4, *Lathyrus*; 6, *Saxifraga caespitosa* var.; 7, *Spirea confusa*; 8, *Gnaphalium dioicum*.—T. G.—Probably *Cardamine amara*.—W. Empson.—1, *Crinum giganteum*; 2, *Asplenium bulbiferum*; 3, send again; 4, *Adiantum concinnum* latum; 5, *Asplenium Fabianum*; 6, *Phlebodium aureum*.—West Highlands.—1, *Asphodelus ramosus*; 2, Fortune's Rockfoil (*Saxifraga Fortunei*); 3, *Saxifraga pyramidalis*.—C. Clarke.—1, *Odontoglossum crispum*; 2, *Odontoglossum*, a form of *hebraicum*.

"The Garden" Monthly Parts.—This journal is published in neatly bound Monthly Parts. In this form the coloured plates are best preserved, and it is most suitable for reference previous to the issue of the half-yearly columns. Price 1s. 6d., post free, 1s. 9d. Complete set of volumes of THE GARDEN from its commencement to end of 1892, forty-two vols., price, cloth, £30 12s.

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All of our readers who are interested in the improvement of cottage homes are invited to help us to make **Cottage Gardening** known. It is published at the very lowest price to meet the wants of those for whom it is intended, and copies will be sent for distribution, free, by the publishers, Messrs. Cassell and Company, La Belle Sauvage, Ludgate Hill, E.C.

No. 1124. SATURDAY, June 3, 1893. Vol. XLIII.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare.*

ROSE GARDEN.

ROSES IN MAY.

THESE are becoming as common as Blackberries in August in this wondrous year of sunshine and drought. This feast of Roses out of season is not all pleasure. The feeling expressed in the homely adage that we cannot both eat our cake and have it spoils the joy of our early Roses. There are also whisperings that the Roses themselves are less sweet and full of substance and colour than usual. It may be so; the speed of production was probably too great to permit of liberal filling and perfect finish. Other causes contributed to reduce the size and substance, and probably also lower the colour, of not a few Roses this May-tide. While not a few rosarians were hesitating about when to disbud their Roses, already the buds were tipped with colour, and anon they were in bloom. Thus the one opportunity of concentrating substance as well as colour was lost while rosarians were hesitating and wavering amid the bewildering glare of cloudless days and the threatening dangers of frosty nights. Besides, perpetual sunshine, while the fastest, is by no means the safest Rose opener. A mixed weather blend of a half and half of sunshine and shadow, or even two-thirds of the latter to one of the former, might unfold finer Roses of greater substance, deeper colour, fuller fragrance. Those who watched their Roses and foresaw their inevitable early blooming a few weeks in advance, and fortified them accordingly with floods of manure or clean water, are now reaping their reward in a rich harvest of Roses in May equal to most of those we expect to gather in June or July. Many rosarians deferred watering until too late this season. Those favoured with strong soils reasoned thus: their beds and borders were waterlogged or at least overstocked with water last February, and it would be good for their Roses to have all the surface dried out or up before they began to water. This seems plausible in theory, but in practice it is apt to mean this: The water gets exhausted before the rosarian suspects it, the sapvessels get contracted, and the plants droop from lack of food and water. In this state of depletion the sun pulls out the blooms suddenly, the nett result, of necessity, being flowers of a lower quality and of a less size. Now, assuming the sunshine and the heat the same, with abundant supplies of food at the roots, these would have carried the Roses safely through the drought into full bloom with little or no loss of either size, colour, substance, form or fragrance. But to reap the full benefit of such copious watering and feeding, they should be begun two months before blooming time, and be left off a week or a fortnight before the Roses open. It is worse than useless to attempt to perfect Rose blooms through watering them a few days before they bloom. Next to watering too late, the worst fault is watering too scantily. Mere surface dribbles do no good to the roots; they may refresh the tops, and that is all. An inch of rain represents something like one hundred

tons per acre, and even double that would not be an excessive watering for Roses on the heels of the long drought. And yet now that we have had less than half an inch of rain since last March, people are saying they need not water their Roses nor fruit trees now it has rained. If you would save your fruit crops and have perfect Roses not only out of season, but successional Roses in season, water them all the more because it has rained. The water will go further, reach the roots sooner, and do them more good because of the little rain that has fallen. Neither is there any need to make Rose beds and borders nasty because we use manure water for the Roses. One of the very best is about equal parts of soot and guano stirred in with the water and watered in. Pigeon and sheep manure stirred in a tub and broken down and dissolved also forms capital food and drink for Roses, as also do house and yard sewage. Fish, cow, pig manures, &c., being no stronger nor better food and more offensive, need not be used among Roses near to the house. The early blooming of the Tea Roses and the long drought have taken much more out of them than usual. It will, therefore, be well to cut back harder than usual, feed liberally with liquid or solid manure, and water very copiously once a week or fortnight unless a rainy season sets in. This treatment will stimulate vigorous growth, and result in abnormally rich and full summer and autumn-tide harvests of Roses. D. T. F.

ROSES AT THE TEMPLE SHOW.

THE Roses at the Temple show were very interesting. The groups were not large, but almost every exhibitor had some old-fashioned kinds, the single varieties, and the Austrian Briers. One of the most charming collections was that from Messrs. Cooling and Sons, Bath, and it comprised a variety of interesting forms. Even at the show the beauty of the copper Austrian Brier is not lost, the flowers of very fine shape, and deep crimson with old gold colour on the reverse. A good mass of it is showy, and by thus displaying it, visitors can see at once its distinctive character. The fault hitherto has been a curious desire to place apparently the single and smaller-flowered Roses in an unfavourable light, but on this occasion one large box was devoted to them, and the effect was striking. Janet's Pride was exhibited frequently. The flower is striped with rose, and very pleasing. The yellow double-flowered Harrisoni and the Persian Yellow made gay breaks of colour, whilst we noticed also the little Provence or pompon Rose De Meaux, the flowers of a rose-lilac colour. Amongst Moss Roses, the variety Blanchet Moreau was well shown, the flowers of the purest white, of good shape and heavily mossed. In good character was Rosa Mundi, which is so often shown for the York and Lancaster, but quite distinct from it; the flowers are white with stripes of red, and sometimes they are quite red. As interesting, however, as anything was the *R. rugosa* class, of which the chief kinds are *Mme. Georges Bruant* and *R. rugosa* and its variety *alba*. The last is a very beautiful flower, and the large bunches of it in more than one exhibit show that it is becoming popular. A large bush in the garden was a welcome feature, the leaves glossy and abundant, the flowers large and very pure—a contrast to the purplish tone of the type. A good garden Rose is *Mme. Georges Bruant*. The flowers are bold, double, and best described as paper-white. We noticed flowers of the fine old *Blairi* No. 2 and the exquisite little *R. lucida plena*. It seems that in time we shall get an imposing list of Sweet Brier hybrids. Those of Lord Penzance were much in evidence at this show, as a collection came from Eashing Park and also one from Messrs. Keynes, Williams and Co., Salisbury, who purchased the

beautiful forms which have been shown during recent years. Lucy Bertram, crimson, was worthy of note, and in the stand from Salisbury mention must be made of Amy Robsart, which has flowers of a delicate shade of rose; Lord Penzance, orange-scarlet, a bright telling flower; Meg Merrilies, deep crimson; and Anne de Gerolstein, also of a crimson shade. A highly promising flower in Messrs. Paul and Son's exhibit from Cheshunt was Rose Carmine Pillar, a single variety, bearing a large, broad bloom, bright carmine-rose in colour, and apparently very free. Judging by the name, we presume it is a climbing kind, and should make a gay feature in the garden. We were pleased to see such kinds as the above so well represented at this exhibition, and the dainty flowers were a welcome relief from the more formal style of showing the blooms singly in green-painted boxes. It is refreshing to see boxfuls of the yellow Harrisoni, Austrian Brier, and other kinds that are comparatively rare in gardens; at least, it is only within quite recent times that a new love seems to have sprung up for them. Still further encouragement might be given to them at exhibitions where the Hybrid Perpetual and Tea-scented sections hold full sway.

SHORT NOTES.—ROSES.

Rose Perle d'Or (Dubreuil, 1883) is one of the prettiest of the Polyantha Roses. The bud is long and pointed; colour deep mauve-yellow. It is a dwarf grower, and very free flowering throughout the whole summer and autumn.

Rose Mme. Charles (Damaizin, 1864) is an improvement upon *Mme. Falcot* for size and growth, but not quite so deep in colour, nor do I think quite so free flowering. It is very distinct, and certain to be a favourite when once grown.—R.

Tea Rose Mme. Henri Vilmorin.—This was one of the earliest kinds in bloom, and the first flower was a fine one. It looks very much like an improved Safrano, resembling that old kind in colour, but the flower is fuller, rather more rose-tinted on the outside, and delightfully sweet-scented.

Two good Monthly Roses.—One is *Hermosa*, a kind that all who prize these early and ever-blooming Roses should have a good group of. The flower is perfect in form and colour, and anyone who loves pink Roses will find this one of the loveliest, so soft and pure are the flowers. The other is *M. Laurette Messimy*, sent out by Guillot in 1887. It is of a most charming colour—clear bright rose, shading to copper-yellow at the base. A coloured plate of this was given in THE GARDEN of October 24, 1891.

Rose Socrates (*J. G., Exmouth*).—The name of your Rose is Socrates, sent out by Moreau-Robert in 1859. As you truly remark, it is a magnificent climber, and better than many, because it does not produce such rampant growth as to leave so much of the lower part of a wall uncovered. Socrates is one of the sweetest scented of all Roses, a continuous bloomer, and good in every way. It is strange how this grand garden Rose could have been missed from the National Rose Society's new catalogue; it must have been an oversight.—R.

Rose William Allen Richardson.—It is not often that we see a wall covered with this grand Rose in full flower by May 18, yet there is such a sight in my neighbourhood. A considerable portion of the front of a house is also covered with the same variety. Provided these plants do well during the coming summer, they should produce and mature a fair amount of wood which will bloom freely again in the autumn. This Rose and its grand counterpart, *L'Idéal*, have already been very pleasing and showy. The former has a wonderfully distinct, clear orange and apricot tint, often as deep as the yolk of an egg. The latter is of much the same size and shape, but with a combination of bronzy pink, salmon, orange, and metallic red blending together in an indescribable manner, while the blooms are so fragrant as to be recognised a long way off.—R., *Sussex*.

NOTES OF THE WEEK.

A variety of Sun Rose (*Helianthemum vulgare venustum*) is remarkably brilliant in colour, the flowers bright scarlet. We noticed a few plants recently on a sunny border, quite a bright picture.

Herbaceous Pæonies are approaching full beauty in the gardens of the Royal Horticultural Society at Chiswick. A large collection of the best kinds is grown, and we hope to make further allusion to them. When a good collection of varieties is planted together, it is easier to choose the most distinct and effective colours.

Lilies are commencing to flower, and the showy *L. umbellatum* is in full beauty, and very handsome in the Royal Gardens, Kew. The stately spikes, bearing a wealth of the large richly coloured flowers, rise from amongst dwarf shrubs, and the effect is striking. Large clumps of this Lily are in full bloom opposite the Palm house, and this style of planting should be followed in all large gardens.

German Irises are in full bloom in the Chiswick Gardens. There is a large collection, but for p'anting in bold masses, very few need be grown. Amongst the finest at Chiswick are Mme. Chereau, Pallida, Celeste, a very beautiful light lavender flower, Bridesmaid, Queen of May, Nationale, deep purple; Jacquiana, the falls velvety rosy red, and the standards of a dull reddish shade; Vincent, purple-blue, and Venusta, with rose-purple falls and old gold standards.

Cypripedium spectabile.—This is the finest hardy Orchid, and a plant of it is in bloom on the Chiswick rockery. A good clump of this Lady's Slipper in full beauty is charming, and if the position is sheltered and the soil moist, it will flower well. The plant has been in its present position for years, but comes up each season with unfailing regularity, always bearing several of the bold, handsome flowers, far more beautiful than those of many much-praised indoor Cypripediums.

Alpine Pinks of many kinds are in flower at Kew, and the most beautiful of all is *D. callizonus*, a large colony of plants in one spot being in full bloom, the leaves hidden with the bold rose-coloured flowers. Besides *D. callizonus*, we also noticed in bloom *D. arenarius*, *D. cæsius*, very charming, *D. plumarius*, *D. pulchellus*, *D. Cyclops*, a large, rich rose flower, broad, and deep velvety crimson at the base of the petals, the plant of vigorous growth and very free, as well as other interesting kinds.

The Fraxinellas.—Both the type and the variety *alba* were shown finely at the Temple exhibition, particularly by Mr. Pritchard, of Christchurch, who had a large mass of the white kind—a very beautiful flower, especially when planted with the type for contrast. The Fraxinellas are easily grown plants, and the white variety should be more thought of in gardens. A clump of it on the border or in some other spot where its white flowers are well displayed has a pleasing effect. It is one of the finest of hardy plants in bloom in early summer.

Iris orientalis.—This is a beautiful Iris, and in the Chiswick Gardens a large mass of it occurs at the end of one of the long borders skirting the greatinery. In the *Botanical Magazine* it is figured as *sibirica sanguinea*, and is regarded as a form of *I. sibirica*. It is far bolder, the flowers also richer in colour, and more quickly past their best. The falls are very broad, rich purple-blue, white at the base, with yellow running into the throat. It is moderately tall, robust, and a good garden Iris. *I. sibirica*, one of the most graceful of Flags, is in bloom now, and there is a number of varieties. One of the most distinct and pleasing is *lactea*, or *alba*, the flowers like those of the type, but of a milky white colour.

Roses at the Paris show.—We were greatly surprised by the shabbiness and badness of the Roses at the Paris show—skinny, mean-looking standards and sickly dwarfs, the flowers bad in form, colour and size. That the nation that raised

nearly all the lovely Roses, and the country of Roses above all others, should make such a ridiculous exhibition of Roses is to be regretted. Happily, it is not characteristic of the Roses of France, as very often going by rail or road one may see more beautiful Roses in a small French garden than in the whole of this exhibition. It must do infinite harm to Rose culture in France to let such things be shown in the Champs Elysées as an example, forsooth!

Peaches at the Temple show.—Amongst the fruit exhibited at the Temple show was a dish each of Peaches Bellegarde, Condor, and Dymond. These excellent Peaches when well grown are of fine colour and size, the quality also being of the highest. The fruits exhibited, however, had not any of these qualities, and looked as if they had been forced out of season. If these were exhibited to show their value for early forcing, they were a distinct failure. Better by far rely upon the old Royal George, this being a good forcer and colouring up splendidly. Quite a contrast to these were the fine Early Rivers Nectarine shown by Messrs. Rivers and the dish of Lord Napier exhibited by Mr. Wythes.—A. YOUNG.

Rhododendron cinnabarinum.—This Sikkim species is blooming in the open in the Royal Gardens, Kew, in a sheltered corner, where several interesting Rhododendrons are in full beauty. It is a handsome plant, and the flowers are of very distinct form and character. They are produced several together in a moderate-sized cluster, so to speak, and are pendent, tubular, and waxy. The tube is of a bright orange-red colour, and at the apex there is a suffusion of yellow, this distinct colouring set off by a wealth of glossy leaves, which have quite a polished appearance. A healthy bush is attractive even without the flowers, which do not appear too freely in the open. In a sheltered position, away from cold winds, warm, and in a good peaty soil, this species thrives well. We remember a large bush of it in The Denbies garden at Dorking, where it was growing in company with *R. Thomsonianum*.

Early gathering of Peas.—In compliance with Mr. Young's suggestion under the above heading, page 443 of THE GARDEN, May 27, I commenced gathering Peas on May 16, the variety being Ringleader. These were sown in boxes on January 16 in a vinery not at work, where the ventilators were open night and day. They were planted out on a south border the last week in February. For comparison, I give dates of sowing and gathering of the same variety treated in the same way in 1892; sowed January 16, commenced gathering on June 1. I also sowed on February 8 of this year on a south border First Crop. From the ends of these rows nearest to the 4-foot alley of wall I could have gathered well-filled pods on May 18. It is my practice to sow on or about the 16th of January thinly in boxes Ringleader, that being a favourite early variety with me. I have not grown Chelsea Gem.—A. BROOKS, Buckhold Gardens, Berks.

Choisya ternata in Yorkshire.—I think that the hardiness of *Choisya ternata* is by no means sufficiently known. I saw it this spring in profusion in Cornish gardens, but it was with increased pleasure that on returning into West Yorkshire I found a plant of mine against a low wall covered with its lovely and fragrant blossoms, its dark green leaves quite unimpaired by frosts and snow, which had destroyed *Viburnum plicatum* and had greatly injured several choice Ivies, and also *Hydrangea paniculata*. My *Choisya* has stood out three winters, surviving even the terrible Whit Sunday of May 16, 1890, when so many choice plants were destroyed. Out of doors *Choisya* has bloomed far better than plants protected by a cold frame. *Staphylea colchica* has been profusely in flower both in March (protected) and in May in an open border.—R. MILNE-REDHEAD, Holden Clough, Clitheroe.

Dracæna australis at Torquay.—On paying a flying visit last week to the Nice of England—Torquay—I was struck with the number of *Dracæna*

australis already in flower, several comparatively small specimens with huge clusters that nearly doubled the size of the heads and seemed to over-balance their perpendicular. Other testimonies of this remarkable season, combined with the favourable conditions of the locality, were an *Agave americana*, which was throwing up its great flower-spikes in the rock garden and dangling over the rocky projections; a *Mesembryanthemum* with creamy white blooms 5 inches or more across; and in a pond in the public garden a large plant of *Phormium tenax* displayed several spikes of its dingy red flowers. A very noticeable feature on a conspicuous mound likewise in the rock garden was an expanse of *Eschscholtzia crocea*, a compact sheet of golden yellow which caught the eye from afar. In a slight recess at the base of the cliff was flourishing a fine example of *Opuntia Ficus indica*, a thing rarely seen out of doors.—J. M., Charmouth, Dorset.

Notes from Chester.—Everything is hurrying on in a brilliant procession of form and colour. The Azaleas, the Lilacs, and many of the early-flowering trees and shrubs have thrown aside their colour spangles and now show foliage tints and shades only. Rhododendrons are now aglow—a long wide river of colour that is most gorgeous in between the banks of hedges on either side. Lupines and hot Poppies, with Pæonies, pink and white, keep up the summer show. Amongst the rarer—in the sense that they are less frequently seen—plants now in pretty perfection we send you a delicately scented *Pittosporum* (Tobira), hardy on a wall, and a beautiful thing for a finger-glass, so delicious is its aroma; *Carpenteria californica*, with its suggestiveness of gold and silver, is very fine, as you will see, and possesses a wealth of bud which gives a present charm and prospective promise of prolonged blossoming. The two Veronicas we sent (*chathamica* and *elliptica*) are also very fine. The characteristic habit and foliage arrangement add to the effectiveness of the plants, and seen in masses or grouped with other hardy herbaceous plants in the open border, they readily commend themselves as "things you ought to have."—DICKSONS.

Exhibiting hardy flowers at the Temple show.—Quite one of the most pleasing features at the exhibition in the Temple Gardens was the way in which alpine flowers were staged by Messrs. Backhouse, of York, and the Guildford Hardy Plant Company. Several notes have recently appeared with regard to this natural and charming style of exhibiting alpine flowers, which are not seen to advantage when crowded up together or represented by a little plant in a small pot. The York firm had a similar exhibit last year, and we hope that this natural way of showing alpine flowers will be adopted by other growers who frequently exhibit such things. When hardy flowers were first shown in quantity at the exhibitions, all sorts of receptacles were used, blacking bottles and other unsightly things; but we have gradually got out of this style, and the present way of boldly bunching Pyrethrums, Irises and Pæonies, besides many other kinds, is commendable. It is important not to stage them too closely together. All individuality in many of the collections at the Temple show was quite lost through want of simpler arrangement. It is desirable to get a good colour effect, and one wants to distinguish the flowers, at present too often huddled in a confused mass. We think also that hardy flowers were rather overdone; at least, it was a mistake to cram them together. They would have proved more interesting if they had not all been put practically in one tent. The eye tired of so much colour. Alpines under such circumstances are lost. But in Messrs. Backhouse's exhibit they were represented springing from the clefts of stone, the Dianthus in particular. This natural way of exhibiting requires to be done with great care, otherwise it becomes a mere burlesque of what is intended. Many charming alpine flowers were to be seen in a small space, occupying only a few feet, and telling the many hundreds who saw them the proper way to grow alpine flowers.

FLOWER GARDEN.

YUCCA PENDULA.

THOUGH natives of sub-tropical parts of America, Yuccas are, happily, hardy in English gardens, and when planted in bold groups, as shown in the annexed engraving, nothing can be more ornamental. *Yucca pendula*, otherwise known as *Y. recurva*, the subject of the present picture, is, perhaps, the best of all; it has not the rigid strength and towering height of *Y. gloriosa*, but it is a more graceful plant, and in proportion its looser panicle of bloom is larger and more conspicuous. G. J.

FLOWER GARDEN NOTES.

AMPLE testimony as to the wonderful growth in popularity of hardy flowers was forthcoming at the

Ixias, which were very well shown; they are such admirable vase flowers, that a small collection should be in every garden. Altogether the hardy flower exhibit at the Temple was very interesting, and flower gardeners who carried away mental or copied notes will not have visited the show in vain.

Annuals, more especially the bedding section, in which one might include *Petunias*, *Verbenas* and *Phlox Drummondii*, are very early this season, and the two first-named are already coming well into flower. Sown early and pricked out quickly, the weather helped them along fast, and having received one good soaking of water after planting, they came away quickly. That exceptionally good annual (for so I suppose we must call it if we give it annual treatment) *Margarita* Carnation is looking well, and the plants are now nice sturdy little bushes. This should be sown in February if one wants an early display. The refreshing shower in the middle of the month came just in time for such annuals as *Stocks*, *Asters*, *French* and *African Marigolds*, *Chrysanthemums*, and dwarf miniature *Sunflowers* that were planted from the seed-bed. The new annual *Nemesia Suttoni* bids

in this way a few of the scented (*Pelargoniums* *Fuchsias*, *Heliotropes*, and lemon-scented *Verbena*, I let them grow away as they like until the bloom-buds are showing, when they are loosely tied in to cover any bare patches on the trellis. A fair portion of the top soil is removed, and a bit of good loam with a little artificial manure takes its place.

Claremont.

E. BURRELL.

NOTES ON IRISES.

THE Iris is the flower of the season. There is scarcely a month in the whole year when some species or variety is not in bloom. In early summer the forms of *I. germanica* are in full beauty; also the beautiful Spanish Irises, followed by the more stately varieties of the so-called English Iris. It is, however, at this season that we get the richness, so to speak, of the Iris family, and the varieties of *I. germanica*, when boldly massed together in distinct kinds, fill the garden with delightful colour. The great *I. pallida* is very beautiful in the Knaphill nursery of Mr. Waterer, partly through the plants being grown in a large colony, and one gets a soft shimmering of blue, in delicate contrast to the varying shades of green in the trees. This type of Iris is not grown well in gardens, at least poorly represented, as there are many beautiful kinds besides the ordinary blue species. This is a charming flower, but it is well to have as much variety as possible, especially of such bold handsome things. A few varieties worth growing largely are the following, and may be accepted as the finest in a long list, many of them poor in colour: *Queen of May* is a delightful flower. It has been described as a "red germanica," not inappropriate, but the colour is not red. The falls are rose-lilac and the standards of similar shade, but with yellow veins. It is distinct and in every way a good garden Iris. A noble yellow flower is *aurea*, which must not be confounded with the species of the same name. Both standards and falls are of the same golden hue, very effective and rich when seen in a mass. More popular than either of these is *Madame Chereau*, grown largely for the market. The flowers are distinctly coloured, both standards and falls white, feathered at the margin with a delicate violet hue. It is useful for decoration, and grows freely. *L'Innocence* may be recommended, the standards white, also the falls, but they have a veining of yellow. *Darius* completes this small selection. This has yellow standards and the falls are purple, with a margin of yellow and white reticulation. Those who intend growing the germanica Irises should select these, not forgetting also *I. pallida* and the beautiful variety *dalmatica*. Irises like a good rich soil, open position, and plenty of sunshine. When in a thoroughly well-prepared staple they will succeed well in the hottest places, and provide plenty of flowers for the house. It is a mistake to disturb the roots often, and few plants resent interference more than this class of Iris, and when transplanted through overcrowding, it is quite two years before they commence to bloom again satisfactorily. In gathering Iris flowers always cut them when not quite fully expanded. They open fresh and clean in water, but, owing to the frailty of the segments, get much damaged when cut quite open.

Two distinct sections are represented by the Spanish Iris (*I. Xiphium*) and the English Iris (*I. xiphoides*). The former flowers before the latter, and is in beauty in the month of May. Thanks to the Dutch hybridists, there is a large selection of colours, the flowers ranging from white, through delicate shades of blue to quite purplish tones, and the flowers are of more formal aspect than those of *I. xiphoides*. Even in town gardens the Spanish Flag will succeed well, and a very delightful effect may be obtained by planting the bulbs amongst dwarf shrubs, such as *Kalmias*. They get protection from the shrubs, and the contrast of colour, particularly with flowers of shades of blue, is distinct. The Spanish Iris requires a thoroughly well-drained soil, rich and sunny position. But shelter from winds is advisable, and



A group of *Yucca pendula*.

Temple show, the display being numerically large and fine in quality, and many a note was doubtless taken as a guide for future orders. Personally, I was specially interested (having already formed fair collections of the same) in the Irises, *Pæonies*, *Pyrethrums*, and *Violas*—an admirable quartette, of which there are some wonderfully good things in the new varieties. In former notes reference was made to a combination of Irises and *Pyrethrums* for a large bed. What shall we say of the new *Pyrethrum Jubilee* in such a connection—the splendid colour would show to great advantage? I thought the improvement from a colour standpoint in the new single *Pyrethrums* was more marked than in the case of the doubles. There were some beautiful flowers both in shape and colour among the *Pæonies*. I must decidedly own a preference for the double flowers. Among the *Violas* it was pleasing to note selfs of decided colours predominating, and there were beautiful things in light and dark mauves, lilacs, and purples; also several comparatively new things in the way of *Countess of Kintore*, but nothing that could be called an improvement on that exceptionally beautiful variety. I must just add a good word for the

fair to prove a decided acquisition; it does its work quickly, being already in flower. Those who have no facility for watering flower-beds would do well, if possible, to give a slight mulching, especially in the case of *Begonias* and *Verbenas*; it helps them along wonderfully, bringing them so much more quickly into flower.

To the list of plants named for raised beds may be added *Ivy-leaved Pelargoniums*, with the old-fashioned *Maurandya Barclayana* and the white and blue trailing *Campanulas* as edging plants to trail over the sides. *Ivy-leaved Pelargoniums* have come rapidly to the front of late years for many different purposes. There is, for instance, no more charming arrangement for a raised bed than a mixture of colours, choosing the free-flowering varieties and dotting in an occasional fine-foliaged plant. They also make splendid specimens for plunging in prominent places where a bit of bright colour is required, or for training on pillars or any kind of trellis-work through the summer months. Work indirectly connected with the flower garden during the past week has been the final "putting straight" the various specimen plants belonging to this department. Besides the *Ivy-leaved*, we use

this is the reason that it succeeds so well planted amongst dwarf shrubs. A large range of colours is also seen in the English Irises, and a few of the flaked varieties are interesting, but care is necessary in the selection of these. They are not distinct in effect as the white or purple kinds. Similar treatment is necessary as for the other Spanish forms. C.

Schizostylis coccinea.—This is one of the most beautiful and valuable hardy autumn flowering plants grown. Having realised its great value for cutting in the early winter months, I early in May last year made a bed specially for it, 10 feet in diameter, in the sunniest situation I could command, by taking out the soil a foot deep and placing two cartloads of old brick and lime rubble in the bottom, putting the soil on top. The turf was chopped fine and the whole made rich with manure from spent Mushroom beds. This raised the bed considerably higher than the surrounding turf. The bed was planted with strong single stems or growths 9 inches apart each way. They soon covered the ground and began to bloom in September, continuing to flower profusely till severe weather set in in the beginning of the new year. From this bed great numbers of spikes were cut for house decoration, and at Christmas it was a mass of lovely pure red colour that would vie well with the best *Pelargonium* beds in August. This may answer "E. T. D.'s" queries in your issue of May 6, p. 380. Though I believe the *Schizostylis* to be quite hardy, it will do splendidly in pots in a cool conservatory. All the *Montbretias* will do well under the same treatment.—G. SANGWIN, *Trelissick, Truro*.

Campanula glomerata dahurica.—This is a lovely plant for the border or in a mass in the pleasure grounds. A dry state of the soil prevents its growing too tall, and in this state it is far more ornamental. At the present time (May 20) it is lovely in our garden, large patches from 3 feet to 4 feet across being covered with flower. It is fully a month earlier in bloom this year than last. When this *Campanula* is associated with light-coloured Irises, *Delphinium nudicaule*, *Columbines*, Iceland Poppies, white Lupines, &c., the effect is very fine.—J. C., *Forde Abbey*.

Dwarf white Antirrhinum for beds.—This is not used so much as its merits deserve, and I was pleased to see a note as to its value for pot work at p. 424. The writer of the note mentioned that the dwarf kind was not the best for beds. I have found it valuable for bedding, as it is not so dwarf when grown in this way as under pot culture. As it requires liberal treatment, it is quite 6 inches taller. I have for years used this plant for beds, with an edging of some violet-coloured flower, and the result is charming. I prefer *Violas* for edging, as the ground is specially prepared for the *Antirrhinums*. The *Antirrhinums* and the *Violas* may be planted at the end of April, and by the time the other bedding plants are put out they come into bloom. By using such plants as the above, there is much gain and more pleasure can be had, as they do not suffer so badly in cold or wet seasons. Cuttings struck in September in cold frames produce nice plants by spring. Cuttings are preferable to seed, as seedlings vary in height, colour of flowers and time of blooming.—G. WYTHES.

Ramondia pyrenaica.—At last I have met with success in cultivating this interesting hardy plant. For several years I could make nothing of it until I obtained a fresh stock of healthy plants and prepared a site for them on the north side of the rockery, choosing a slightly overhanging stone for them to grow under. The compost in which I planted the roots is mainly one of peat, with a little leaf-mould and sand. All through the late drought I supplied the plants freely with moisture, and at last I am rewarded with a fairly good crop of flowers.—E. M.

Preparing Solomon's Seal for forcing.—Those who make a point of annually forcing a few roots of this know full well its value for that pur-

pose. To obtain the best results, it is necessary to have several batches of roots, so that each may have a rest occasionally. After forcing, it is usual to plant out the roots in ground set apart for the purpose, leaving the plants there at least a couple of years to recuperate somewhat their lost energies. The present is a good time to assist these in the completion of their growth by the aid of copious supplies of liquid manure. It is wonderful the effect two or three thorough drenchings of the roots has upon the foliage at this season of the year.—E.

Thalictrum minus.—This elegant hardy plant is very suitable for using in conjunction with cut flowers. But it is not for this purpose that I wish to draw attention to it, but to note how well it has grown during the long period of drought, now happily brought to a close; in fact, I know of no other plant, excepting, perhaps, succulents, which will grow and thrive in such dry positions. A part of our large rockery is in a very dry situation and also partially overhung by trees. Here a plant of *Thalictrum minus*, to which a drop of water has never been given during all the dry weather, has thriven amazingly.—A. YOUNG.

Pyrethrum Princess de Metternich.—This double white variety is the chief one grown by Mr. Walker at Ham Common for market cutting. The flowers are bunched in dozens, then carried in large baskets into the packing sheds, and stood in clumps of a dozen bunches into flower-pots filled with water. Hereafter some twenty-four hours the flowers lose the yellow tinge seen in them when cut and become pure white. *Mont Blanc* is also grown, but not largely. The first named one is not only hardy, but wonderfully free. A few red double forms are also grown, but pure white flowers are in the immense proportion. Singles are not grown, for, beautiful as they are, they are not in favour for bunching in the same way that the double whites are.—D.

Irises.—It is rather a surprise to learn that the various forms of the German Iris are not now in so much favour in the market as was the case a year or two ago. Perhaps they soon flagged and faded, perhaps too many of the dull dirty brown coloured varieties were grown. In any case few are now grown for market production. At Ham the long spell of drought does not seem to have suited the Flag Irises, as the leaves look somewhat pale in colour. Still the roots may be all the harder, and perhaps produce flowers in greater abundance next year.—D.

Rhodanthe Manglesi.—Some years ago this *Rhodanthe* was regarded as a difficult subject to cultivate, but our market growers now-a-days do not look upon it in that light, as the numbers that are to be seen exposed for sale in the streets of London will testify. Like *Mignonette*, the *Rhodanthe* is very impatient of being disturbed at the roots, so that it is sown in the flowering pots, which is the regulation 4½-inch or 5-inch pot. The soil is pressed down firmly, and in doing so it must be borne in mind that the seed is to be sown on the top and then covered with soil, so that sufficient space must be left for the water required as the plants grow. Good drainage must be ensured, for though the roots are very impatient of stagnant moisture, they at the same time quickly suffer if allowed to become too dry. A free circulation of air around the plants when growing is very necessary, for mildew is liable to attack the foliage, which is soon permanently injured. Besides *Rhodanthe Manglesi* and its white variety, there are other forms, notably *atro-sanguineum* and *maculatum*, of which last there is a variety with double flowers. Nearly twenty years ago great things were expected of this double variety, but it is now little grown.—H. P.

Iris sibirica.—Whilst some of the wonderful and lovely Irises are a puzzle and a source of much anxiety and vexation to their would-be cultivators, there are others not less lovely and which give no trouble at all. This species is one of them, and it deserves extended cultivation. It wants to be planted somewhere and left alone, preferably in a damp spot. Even in the worst of cold,

wet clays, it is happy, provided, in addition to moisture at the root, it has open and sunny surroundings. After it has been planted a year or two it flowers freely, and continues doing so each season. A little group on the margin of the lake is now flowering well. The plants are so slender in growth, with leaves so narrow, that many would hardly distinguish them when flowerless from the coarse Grasses, among which they can very well hold their own. Above its own lovely leafage now, however, rise erect slender stalks to about a yard in height, producing several blooms in succession at the top. The standards are of a clear self blue colour, but the falls show a beautiful veining of deep violet-blue on a white ground. This description applies to the type, as there are several very fine varieties of the Siberian Flag, notably that named *orientalis*, rich in its markings and broad in petal, but for extensive planting, and, above all, for naturalising, the type is chiefly recommended, being more common and plentiful. A few such things as this, coming at different times and naturalised in situations where they can do well and take care of themselves, add enormously to the interest of gardens.—A. H.

SHOWING ALPINE FLOWERS.

THE letter of Mr. Henry Selfe-Leonard at page 401 is certainly an important one, dealing as it does with the method of exhibiting hardy plants of small size. I would like to say a few words on this subject as an old exhibitor of these plants. In the first place, exhibitors and judges have to deal with the schedule, and in every point they must comply with its terms. Last year at the April exhibition of the Royal Botanic Society I was a successful exhibitor in several classes, and amongst others was awarded first prize for twelve *Auriculas*, distinct. After the prizes had been awarded, it was found that the person who staged my plants had put in two plants of green edge the *Rev. F. D. Horner*. One of the judges found this out afterwards, and the first prize card was taken off, and another put up with the word "disqualified" written upon it. It was very annoying, as I could easily have won the prize with every one distinct, but the judges were quite within their right in disqualifying. At the National *Auricula* Society's exhibition, Mr. Leonard exhibited in a class for twelve *Primulas*, distinct species. Owing to the early season they were not so good as they might have been, but my own were worse, for I could not bring a dozen up to the day at all. The quality of the exhibit does not matter, but the point I had to discuss with Mr. Leonard was this: he thought that he could exhibit more than twelve plants, as long as there were twelve distinct species. He fancied a dozen and a half or more plants might be put up, but on this point all good judges are agreed: if the schedule specifies twelve, that number must be put up; one less or one more would disqualify. Another case has cropped up in reference to exhibiting hardy *Polyanthuses*. The schedule of an important northern exhibition offers prizes for twelve distinct *Polyanthuses*. The judges, leading men in their profession, ruled that fancy or garden *Polyanthuses* were out of it, and gave all the awards to the laced type, disqualifying the others. The judges were undoubtedly wrong, as the schedule did not specify any particular type of *Polyanthus*; all should have been admitted, and judged according to their merits. In the case of the alpine exhibited at the Regent's Park Botanic Gardens, the class reads, "Collection of alpine in flower grown in pots." Alpines are perfectly hardy, and many beautiful things are in bloom about the last week in April, and flower far better free and unconfinement in the open border than they do in flower-pots. In fact, many of these wildlings cannot brook confinement in flower-pots and dwindle under the roof of a greenhouse. The words "grown in pots" should be omitted from the schedule, and an exhibition of such plants would be greatly improved if the two words "in flower" were also cut out. I would suggest "collection of alpine in flower, but plants

distinguished for beauty of foliage admitted." There are many such in alpine. Why the word "pots" should be brought in I cannot understand, and "grown in pots" is worse, for a conscientious exhibitor would not in that case lift a plant in flower from the open ground and place it in a "pot" a day or two before the show; but many would not scruple about it. The less restrictions in schedules the better, and after the pretty way in which Mr. Leonard has exhibited his alpine, the words "grown in pots" should certainly be taken out of this class, and we may have a prize for plants staged in the most natural manner combined with quality in the exhibits, which must always be placed in the front rank. Personally, I have to thank Mr. Leonard for a suggestion he made at the annual meeting of the National Auricula and Primula Society (southern section). He suggested that a class should be provided for "a group of any species or varieties of Primula or Auricula, in box or basket, to occupy 12 superficial feet; tasteful arrangement to be considered." This suggestion was adopted after some discussion, and I hope it will be continued, as it is a step in the right direction, only the prizes offered are scarcely commensurate with the expense and trouble of preparing the plants and getting them to the exhibition. I had a box prepared 4 feet by 3 feet, but found, after the plants were nicely arranged with pieces of rock here and there, that four men could scarcely carry it to the van outside the garden, not to mention getting it to the exhibition, staging it, and bringing it home again.

One part of Mr. Leonard's letter is quite to the point, and worthy of careful consideration by the compilers of schedules. He suggests that "the rules of societies should not merely expressly allow, but should even encourage that any exhibit be dressed with as much of taste and natural effect as may be." I am sure that all who know Mr. Leonard will believe that he writes only in the interests of art, for the success of an exhibition in a great measure depends upon the way in which the plants are placed before those who pay to see them, and any improvement in the way of exhibiting plants or flowers should be welcomed by everybody. Well-grown plants should always be encouraged; it is well known that the best cultivation may be all in vain at a flower show if not backed up by tasteful arrangement. Well-arranged groups of plants have in the public estimation during the last few years taken the place of the gigantic specimen plants which had become rather monotonous to the visitors, notwithstanding the cultural ability required to bring them to such a state of excellence. There must always be classes at exhibitions arranged so that cultural excellence shall have its due reward, but a grand mass of Solomon's Seal may be in the eyes of a tasteful person a more beautiful object than a gigantic Azalea trained into a pyramid or dome-shaped mass of colour. J. DOUGLAS.

Lilium pyrenaicum.—Though it cannot be regarded in the light of a showy Lily, this species is still very pretty and interesting from the fact of its being in the open border as a rule the first of the genus to unfold its blossoms. Like all the others, it varies a good deal in height, according to the conditions under which it is growing, but good flowering examples are usually met with about a yard high. The stem is stout and very thickly clothed with narrow leaves, while the blooms, which are borne in a many-flowered raceme, are small and prettily reflexed as in the Turk's-cap section, to which, indeed, the species belongs. The colour is by no means bright, being a kind of greenish yellow with red pollen. This Lily, which is, as its name implies, a native of the Pyrenees, belongs to the Martagon group, and has for its immediate allies *L. pomponium verum*, figured in THE GARDEN, Vol. XX, *L. chalcidicum*, and *L. tenuifolium*. Most members of the Martagon group have two very prominent characteristics, viz., the heavy disagreeable smell of the blossoms, and the fact that after transplanting, a season or two is necessary for the

bulbs to become established before they will flower in a satisfactory manner. The Martagon group is the largest of the five sections into which the genus *Lilium* is divided, and included in it are such diverse forms as the North American *L. pardalinum*, *L. canadense*, and *L. superbum*, with their curious rhizomatous bulbs, *L. Martagon* and its varieties, the stately *L. Humboldtii*, the Colchic Lily (*L. Szovitzianum*), the distinct nankeen-coloured *L. testaceum*, and the Japanese *L. Hansoni*, a very pretty form, as well as *L. chalcidicum*, *L. pomponium*, and *L. tenuifolium* mentioned above. The species of this group in which the unpleasant smell is most pronounced are *L. Martagon*, *L. Szovitzianum*, *L. pomponium*, and *L. pyrenaicum*. Lilies are now-a-days largely grown in pots, but as a rule all the members of this section are unsuitable for the purpose. Whilst *L. pyrenaicum* is the first to expand, there are several others that follow closely on its heels, notably *L. davuricum* or *umbellatum* in its various forms, *L. Szovitzianum*, and *L. tenuifolium*.—H. P.

OUTDOOR FLOWERS.

IN a season like the present when most outdoor flowers are suffering more or less from the prolonged drought, and have not attained, or are likely to attain, their usual standard of excellence, it is a relief to turn to the magnificent clumps of Iris which have, I think, never flowered better—two dozen fine spikes to each clump not being an out-of-the-way number. I find the flowers very serviceable for cutting, the spike in its entirety for tall, and portions of the same nipped off down the stem for small vases. Nearly all the varieties of the bearded Iris are very effective in bold clumps for large beds, and Pyrethrums, also *Campanula latifolia*, *C. latiloba*, and *C. urticifolia*, associate admirably with them. They look remarkably well in the immediate neighbourhood of water, and a fine effect can be produced by planting them in a mass almost close to the water's edge with a background of Rhododendrons. Pæonies have flowered well and do not seem to have felt the drought except that their beauty is more short-lived than usual. Pyrethrums are hardly likely to show their true character this year on our rather light soil; the flowers are small and the foliage already taking on a yellow tinge. A heavy mulching and watering would set them up, but there are so many things calling imperatively for water, that the herbaceous borders are hardly likely to get a share. The double Peach-leaved *Campanula*, usually very good with us, is throwing up in a weakly fashion, and the spikes will only be about two-thirds their usual height. The deep-rooting *Hemerocallis* and *Alstroemerias*, that once established get such a firm grip of the soil, look remarkably well and are sending up their flower-spikes (considerably earlier than usual) very fast. I tried an experiment with *Delphiniums* some three years ago, which seems likely to be a success. A large slope in the pleasure ground, some three-fourths of an acre in extent, was cleared of old Laurels and replanted with deciduous flowering shrubs and Rhododendrons. Occasionally a larger interval than usual was left between plants of the latter, and the spaces thus left were afterwards filled with small alternate groups of *Lilium candidum* and *Delphiniums*. The effect is decidedly pleasing, both flowers showing to the best advantage against the dark green foliage of the Rhododendrons. Old-established shrubs are very fine this year; *Weigela* in variety and *Deutzia crenata* are just about at their best.

Claremont.

E. BURRELL.

Pæonies.—These are grown at Ham in great quantities and in exceeding variety. From pure white the colours range through many shades, down to crimson. The soil suits these Pæonies remarkably well, the plants, which are growing between the fruit trees, just now blooming profusely.—D.

Ranunculus parnassifolius is flowering freely in the nursery of Mr. T. S. Ware at Totten-

ham. It is a very old, but charming species, introduced from Southern Europe as far back as 1769, and when grown in quantity the effect of its white flowers springing from the mass of oval Cyclamen-like leaves is most pleasing. Unfortunately, this species is not one of the easiest to grow, requiring a cool, moist, but not too wet position, under which conditions it thrives freely.

PLANTS SUITABLE FOR RUINS, WALL-TOPS, AND OTHER DRY PLACES.

IN speaking of plants for the purposes specified in the heading, it should be borne in mind that though some may be seen flourishing and happy in such places, it is a very difficult matter oftentimes to plant and otherwise establish them in private gardens. For one thing, when one sees plants flourishing in a wild state in such dry situations, it has come about by the rule of the "survival of the fittest," and though there may be abundance of plants apparently growing comfortably, they may constitute but a small proportion compared with those that have failed to survive; whereas in artificial planting we may bemoan our want of success if we do not succeed with a comparatively few specimens that have engaged our efforts. The closest observer who carefully notes the minutest details as to the conditions under which wild plants are flourishing will be more likely to succeed if he follows the hints of Nature. Of course, if some reasonable provision is not made for the roots and ample care bestowed, as by periodic waterings, when the plants have been put in position so as to sustain life until they get a natural attachment to the stone and soil, nothing less can be expected than that the plants will shrivel up and die the first hot or windy day.

When you can manage to establish flowers on ruins or dry walls, you create one of the most interesting and beautiful garden effects; but in setting about a business of this kind, it should be kept in mind as being advisable, that, whatever is grown on high places, the plants should have the habit of springing up considerably or drooping over the edges, so as to be visible from the surrounding and lower promenades. It is not always the case that plants which are seen to thrive on and decorate what appear to be dry places and sunny rocks will do for ruins and wall tops, because on such structures there is not the amount of moisture contained in the rooting medium as occurs in natural formations, which get the benefit of moisture by capillary attraction in a greater degree. This point may be proved by anyone who cares to experiment, and the fact may be recalled whilst we are glancing over a few species, one by one, commonly supposed to be suited for walls and natural rocks indiscriminately, and we might as well, whilst considering the species individually, take note of their respective cultural requirements.

ERINUS ALPINUS.—This is a long time before it becomes effective and well established, and often when it means to do so, it sows itself better than human hands can do it. A few plants, therefore, should be set at the higher parts.

SAXIFRAGA LONGIFOLIA is often supposed to be a fit subject for dry walls, but according to my experience, it is utterly useless for such places; it will do on what seems to be dry rocks that are more cool, and get more moisture by capillary attraction.

SAXIFRAGA LIGULATA.—Precisely the same thing may be said of this as the foregoing.

CORYDALIS LUTEA.—This is a very likely plant for walls with crumbling seams or ledges of mortar rubbish, and it may be established by seed or very young plants.

DRABAS will do in tight fissures.

ALYSSUM MONTANUM is a capital thing for walls where a slight depth of soil is provided.

TUNICA SAXIFRAGA may do, but it will require careful planting for a start, and perhaps it would be easier and better to begin with seeds.

DIANTHUS CUSCUS.—I find this an excellent thing for rather flat and broad wall tops, but it should be well packed round with stones and a rather retentive loam, and surfaced with leaf-mould and sand, and it should be periodically watered for the first season.

LYCHNIS ALPINA AND L. LAPPONICA.—In every way these are manageable and effective.

COTYLEDON UMBILICUS AND C. CHRYSANTHA, and one or two other species of the same genus are ideal plants for walls and dry ledges. The objection, however, to these is that they are rather costly for a purpose implying somewhat liberal use.

SEDUM DASYPHYLLUM is pretty, but very small, and only fit to be in positions near the eye. Moreover, it is tender in damp climates, and certainly not perfectly reliable.

SEDUM GLAUCUM is, practically, for such purposes the same thing as above, with the advantages of being hardier, a more vigorous grower, and a cheaper plant to obtain in quantity.

SEMPERVIVUMS.—All or any of these are capital for covering crumbling walls with vegetation. The chief thing, however, is to plant them carefully at first. They should be flatly and securely fixed by the aid of small stones and some mortar in a wet state. Unless thus secured, they are soon disturbed by birds or blown away by the wind. To fix the Houseleeks is a business that will not admit of being done in a hurry. It would perhaps also be better to plant them in the spring, just when it is due for them to emit their new roots.

A few other plants that I would suggest are—

Thymes of various sorts. The procumbent Stonecrops or Sedums in considerable variety. Not a few alpine Pinks. The orange-yellow Hawkweed for dry places that are not too sunny. Everybody knows the charming manner in which the Wall Rue Fern clings and thrives on old mortar. Alyssum spinosum is a quaint and curious plant, and often grows into bushes of considerable diameter. I have seen Campanula rotundifolia doing splendid duty on the walls of ruins, and it goes without saying that Wallflowers and Snapdragons can be made happy in the wall garden.

In fissures with careful planting many other things could be made to flourish, but to make them a success such fissures should be carefully examined, and if necessary a solid mass of soil to form a bed for the roots should be rammed down firmly; a good mass should also be rammed in as a backing to prevent the roots from being dried up. These provisions should be made before the plants are put into position, and the roots should then at their extremities be inclined downwards, and carefully and firmly covered with good soil. Indeed, I know no form of gardening requiring more patience and skill during the arranging of the plants than the wall garden. J. Wood.

Woodville, Kirkstall.

NOTES ON HARDY PLANTS.

Gunnera magellanica—Although the specific name sounds as if the plant might be doubtfully hardy in this country, I have proved for years that it is hardy in the most exposed situations here, where the monster species scabra and manicata fail to come through not the severest winters. This is a minute species of what might be termed a giant genus. Its leaves are only the size of a crown-piece. It increases chiefly by means of stolons, and I know no prettier or more characteristic plant that could be employed for creeping between the moist seams of stone and

earthy fissures of the rockery. Of course, its flowers are not showy, but the plant is certainly of so distinct a type, that it can hardly fail to interest and please.

Geranium balkanum.—This is a comparatively new introduction, and might be termed a dwarf *Geranium ibericum*. It is free, of good colour, and pretty. I cannot be sure as to what stature it may reach, but hitherto I have not seen it taller than 6 inches.

Pyxidanthera barbulata.—I am pleased to say that my one plant of this desirable American species is in beautiful condition, although it has been kept out of doors all winter with, I should add, the protection of a bit of glass to keep the foliage dry.

Tricyrtis hirta.—The object of this note is to note its hardiness. Two plants have been in the same position for some four years, and though I cannot say they are either strong or flourishing, they are alive and healthy. They have been out of outdoors for the whole of the time named. I believe this genus is generally considered to be tender; if so, I do not think it is cold that hurts the plants so much as wet, and certainly they prove hardier than most of the *Alstroemerias*.

Potentilla flagellifera.—This is a charming species, having thick, bright yellow velvety flowers on flagelliferous stems. The whole of the plant is velvety to the touch, being quite grey with soft downy hairs. It is said to be rather difficult to propagate, but if you deal with it in warm weather and set the divided roots in moist sand and full sunshine, they root well and make nice plants before cold weather sets in. It is not desirable, however, to disturb their roots in the teeth of winter, but rather to wait until spring; neither is it advisable to try to divide other than old and strong plants.

Eriogonum umbellatum.—This is an alpine of a distinct type, with pleasing and massive umbels of flowers on a thick scape, at the base of which the plant presents another pleasing feature. There we see a circular arrangement of its spoon-shaped leaves, whose stalks are beautifully tinted with red on the upper side, deepest where they meet the scape. The effect is that of a bright red star or rosette, and the contrast is very beautiful with the umbel of yellow bloom and with the grey foliage. This leaf-colouring is only developed when the plants enjoy bright weather and full exposure to sunshine. Nevertheless, when the colour exists, it is a feature that cannot fail to attract notice.

Phlox stellaria.—This is one of the more distinct kinds, having a slender and somewhat erect habit, with a persistent woody habit, that is, it does not die back in its woody parts like most of the procumbent species. The flowers are delicately beautiful and freely produced all over the plant, which grows about a foot high. This species is not only a distinct type, but, so far as I know, it is an unvarying one.

Eritrichium nanum.—A few plants here have been very beautiful this spring. Their roots have been kept moist, but their heads dry. I am inclined to believe that the present sunny spring has been very suitable for the development of both its leaves and flowers, or, in other words, our usually damp and varying spring weather may often have been the cause of injury in past years.

Primula suffrutescens.—This quaint and dainty species is just pushing its deep crimson-purple buds from the centres of the rosette-like foliage. Lovers of the *Primula* species should not be content until they have added this plant to their collections and succeeded in growing it well. It is not only one of the later blooming kinds, but in other ways most desirable. There is no other *Primrose* that I know that has even a resemblance to it in form and habit, though it has flowers approaching in colour those of the characteristic *rosea*. Practically, you may see it as two plants, according to the treatment you bestow upon it. If you grow it for its flowers, it should be allowed to have much its own way, when it takes the

form implied by its name by assuming somewhat the shape of a pigmy tree; but I have found that to propagate it, or more quickly make plants of good size, it is better to earth up the somewhat woody stems to encourage therefrom vigorous surface roots. If some such method as this is not adopted, the plant seems to make extremely slow progress, but still to flower more freely than when pushed.

Caltha biflora.—This is indeed a charming thing for a moist corner. The almost round leaves, as large as the palm of one's hand and of the most delicate pale apple-green colour, set off in a most effective manner the snow-white blossoms, which just peep out of the foliage. The flowers are an inch in diameter, and I am sure that where this plant has not hitherto been cultivated, it would be a great acquisition. I have no water or bog for it, and yet it does well by the sides of the walk, where, when it rains, the water finds its way in quantity.

Ranunculus parnassifolius.—This, grown in well-decayed leaf-mould and sand, becomes a showy plant. Its thick Grass of Parnassus-like leaves are but few compared with the flowers, which, glanced at casually, have a slight resemblance to the white, pink-tinted Dog Rose. Doubtless it likes moisture. I have hitherto cultivated it successfully when kept fairly well watered in a north or east aspect, but I have seen it done much better in other gardens than my own.

Woodville, Kirkstall.

J. Wood.

SHORT NOTES.—FLOWER.

The Mourning Iris.—A large bed of *Iris susiana* is in bloom near the Orchid house at Kew. The bulbs are in good health for this type, and the large beautifully marked flowers possess much interest.

Gladiolus communis.—This has withstood the drought better than any plant in the herbaceous border. At the present time its bright rosy coloured flowers are making a brave show, especially in a border that was replanted last autumn.—M.

Papaver bracteatum.—Last May I sowed seed of this perennial Poppy, and the plants are now flowering finely in the bed where sown. I put out a long line of plants in the kitchen garden early in the year in March, but the drought experienced here has prevented them making much progress. From 3 feet to 4 feet is the usual height of the flower-stems.—E.

Anemone Robinsoniana.—I had a small clump of this this spring growing among other flowers, and it was curious to note how visitors singled it out for admiration. In the form of large colonies I should say it must be very pleasing. It is apparently as free of growth as the type, and one of those things that is sure to increase rapidly.—J. C. B.

Lithospermum prostratum has been for the last month a sheet of blue on a part of the rockery which is partly shaded until midday, afterwards being in the full glare of the sun. Seldom do we see this plant flourishing. It is often sickly in appearance owing presumably to the roots being in ungenial quarters. This was the case here a few years since until I replaced it in peat, layering its branches in the same material. I find, too, that copious supplies of water are very beneficial.—M.

Heuchera sanguinea.—In my opinion no hardy plant can approach this in point of colouring. It delights in abundance of sunlight, but it must not be stinted for moisture at the roots. In my case a clump of it is growing at the base of the rockery in rather deep, yet light soil, with which is freely mixed old lime rubble. During the late dry weather the clumps in question received copious supplies of water three times a week, the result now being a healthy growth and fine flower-spikes.—E.

Dianthus Grievai is an interesting plant in bloom on the Kew rockery. It is a hybrid kind, the parents *D. barbatus* (the Sweet William) and probably *D. alpinus*. There is a resemblance to both parents in the flowers, which vary in colour from white to rose, appear freely in clusters, and

on short sturdy stems. It is a thoroughly useful garden plant, compact and strong in habit, and makes a bright show of colour. We have never seen it except at Kew, but such a plant should become common in all good gardens.

KITCHEN GARDEN.

SERVICEABLE BEET.

JUDGING from what is seen at the great co-operative show at the Crystal Palace every August and at various other shows in different parts of the country, great size is thought to be the principal recommendation that can be bestowed on Beet. If this is not so, how else are we to account for the large number of overgrown roots which are annually staged, only to be passed over by the judges in favour of medium-sized, cleanly grown samples? Instead of measuring close upon 12 inches in circumference at the thickest part of the root, 9 inches would be a better average, or quite large enough for anything, not a few judges, and cooks, too, let me add, preferring them a trifle smaller. If either much larger or much smaller, they cannot be classed as serviceable. Naturally, varieties differ considerably,

patches, but most probably it will be found sound enough, coming up strongly since the rain has fallen. This will give a good opportunity for testing the correctness of my assertions as to the advantages or otherwise of late sowing.

The foregoing is advanced somewhat late in the season to be of much service this year at any rate, but there is yet another way of preventing a general grossness of roots, and something may yet be done towards increasing the size of others that might otherwise prove too small to be serviceable. If hard thinning is resorted to in the case of the Turnip-rooted forms, including the superior Blood Red, the roots in most cases soon become extremely coarse and valueless accordingly. Instead of thinning the plants to about 8 inches apart in the row, they ought to be left not more than 4 inches apart and drawn from where the most forward are large enough for use, or, say, when about 2 inches in diameter. Leaving them thus or even more thickly is a sure and safe corrective of grossness, and if the bulk of the roots does not exceed $3\frac{1}{2}$ in. through many of them pressing against each other in the autumn, they will be found very serviceable quite late in the winter. Much the same rule applies to the long-rooted forms, though in this case if the rows of stronger kinds are not less

rich in potash best suits Beet, and for hot and medium soils I have found equal quantities of kainit and salt, enough of this being applied to just whiten the ground, answer remarkably well.

Very large or overgrown Beets are usually of poor colour and indifferent quality. The illustration of Covent Garden Beet, which accompanies these remarks, should be an object-lesson to those who have yet to learn what is the limit as regards the size of a serviceable Beet, and even this should not be reached in the case of smaller growing varieties, notably Dell's Crimson. H. M.

WINTER KALES.

OF late there have been several notes in THE GARDEN concerning these, the hardiest and most useful of late winter and early spring vegetables. It is evident these are not so well known as they ought to be, or there would not be so many complaints after each winter as to the scarcity of green vegetables. I daresay in instances where this does occur it is through relying for the supply on uncertain kinds, such as Savoy, as a sharp spell of frost will clear these off wholesale. Old Cabbage stumps again are often left over to give a winter supply of greens, and their value at certain times, or when the winter is favourable for their growth, is well known, but to rely upon these solely is a very unwise course. What one wants to do is to provide by planting suitable kinds, so that green vegetables should be a certainty, however severe the winter. Winter Kales are the hardiest of all, much more so indeed than Brussels Sprouts. With this valuable winter vegetable culture, has a deal to do as regards success or failure. But it is not wise to depend merely upon Sprouts, but to make due provision for a late winter and early spring supply of greens by planting the best of the Kales so as to afford a succession. Even Kales will not prove profitable if puny and drawn-up plants are relied upon, and these very likely late planted, as when this is the case the plants are small, and, excepting the small top, they are not strong enough to produce secondary sprouts. It is astonishing the quantity of tender sprouts a well-grown plant will produce after the top is taken off, that is, of course, if kept closely gathered. Being plucked early, they are both tender and good in quality. But allow them to run, and the texture soon becomes tough and stringy. A particularly good trait of these Kales is that with a proper selection, quite a succession is obtained right from midwinter until the spring is far advanced. The first that comes into use is the Curled or Scotch Kale; this, besides the large curled top, forms a fine lot of secondary sprouts. To follow this comes the invaluable Cottager's Kale, this being of splendid flavour when cooked, and also giving a close succession of sprouts. If I were bound down to one kind, this would be the one, it being very hardy, an excellent grower and very prolific. After this comes Read's Improved Hearting, of excellent flavour, but not very prolific in secondary sprouts. The old Ragged Jack is also an excellent and hardy kind. The Asparagus Kale is really invaluable, being very late, the shoots succulent and of good flavour.

Sown at any time during April, and this thinly and on good soil, a good supply of plants is secured. Of course, it is late now to write of seed-sowing, but sooner than let another season go by without planting these invaluable Kales, the plants should be obtained from another source, as they could be procured at a cheap rate. On strong soils the plants should be set out not less than 30 inches apart both



Covent Garden Beet.

some becoming too coarse under conditions that would exactly suit others; while it sometimes happens that the strong growers only attain a serviceable size on some soils, the less robust, of which Dell's Crimson is the best known type, failing to become large enough to be of any value. In addition to a judicious selection of varieties, it also behoves the cultivator to vary his treatment according to previous experience. Especially is judgment needed in the matter of sowing. Thus if Pragnell's Exhibition is sown on good ground from the beginning to the third week in April, the chances are the bulk of the roots resulting will be too coarse to be serviceable other than for feeding pigs; whereas, if the sowing had been delayed till the first week in May, or even as late as May 14, the result would in most seasons prove eminently satisfactory. Most of the Beet grown for the markets is moderately large, the preference rightly being given to varieties which under garden culture would, perhaps, grow too large. In the open fields Covent Garden Red is seldom coarse, nor would it be in most private gardens if not sown very early; whereas Dell's Crimson or any of its numerous synonyms is not robust enough, unless under more favourable conditions as regards a good depth of strong soil, being also sown about the middle of April. This season, owing to the great drought, early sown seed failed to germinate other than in

than 15 inches apart the plants should be reduced to about 6 inches apart, allowing another 2 inches if either late sown or growing on comparatively open or poor ground. There is not much likelihood of Dell's Crimson on poor ground becoming coarse if thinned to 8 inches apart at the outset, but on rather strong soil, or any that was heavily manured for the preceding crop, 6 inches apart is quite enough space to allow it. It will thus be seen I am reversing the usual order of things, most writers advising allowing the greater distances for the stronger growers and the least room for the neater growing varieties. As already hinted, it is possible by following that advice to promote rather than check coarseness, and in other cases to unduly limit the growth where it is undesirable that this should be done. Fresh solid manure, if it comes into contact with the tap roots of Beet, is liable to cause them to fork badly, and nothing of the kind ought to be needed in the case of strong growing forms. If these are kept free of weeds and have the ground lightly stirred among them during the early stages of growth, there is every probability of a serviceable lot of roots being obtained. In the case of Dell's, Cheltenham Green Top, Improved Black Leaf, and the true Pine-apple Short-top, there may be some necessity for a fertiliser being sown between the rows and stirred in just in advance of rainfall. A manure

in the rows and between the rows, and on lighter soils 6 inches less. The ground should be in fairly good heart, as the stronger the plants the greater the quantity of produce. It is where the plants—through, no doubt, force of circumstances—are set out between rows of Potatoes that they are apt to become weakened at the base of the stems. If planted between every other row, the stems of the Potatoes may be laid over, so as to let as much direct light to the Kale as possible. After the Potatoes are lifted, the best course will be to mould up the plants to strengthen them.

A. YOUNG.

A novel remedy for woodlice.—A market grower of Cucumbers has hit upon a somewhat novel idea for exterminating woodlice from his Cucumber beds by employing a brood of young ducks. By chance, one day, the door was left open, through which the ducks strayed on to the border on each side of the path. In a twinkling the ducks were busy devouring the woodlice, and by repeated visits they have almost cleared the houses of this pest. This was fortunate, as the woodlice were playing sad havoc with the Cucumber plants and fruit, all known remedies having failed to effectually check their ravages.—E. MOLYNEUX.

Forcing Potatoes in pots.—I note Mr. Gilbert's inquiry at p. 406 in the matter of the weight I took from 8-inch and 9-inch pots. The weight is quite correct, and I may add that I have lifted as many from a pot on several occasions, having taken them out of the pots and weighed them myself. Like Mr. Gilbert, I have grown Potatoes in pots for several years, and I make a point of giving them the best of culture both as to soil and after treatment. I grow a selected old tried kind that is in most trade catalogues.—F. A. C.

CABBAGE ENFIELD MARKET.

THIS is undoubtedly one of the hardiest Cabbages we have. Among growers for profit it appears to be yearly increasing in favour. A tender variety, or one that has a tendency to run in spring, will never take with market growers, no matter how good it may be in other respects. I had this spring a rather curious experience with this Cabbage. Last June I sowed this for winter use. Either I was late in sowing or the season was against the growth of the plants, but a considerable portion of them did not turn in in the autumn. In a winter which cut up the Cabbage tribe so much one would naturally think that such plants would have suffered, but they were not in any degree injured. Instead of bolting in spring, as I naturally thought they would have done, they began to turn in in March, and early in April I had nice little white-hearted Cabbages fit to eat fully three weeks before the earliest young ones turned in. An acre or two of such Cabbages would this year have been worth a lot of money. Poverty of soil had, I think, something to do with these Cabbages not turning in in autumn. I had intended to top-dress them, but omitted doing so, and it was just on the poorest part of the ground that they remained till spring. I never knew any other Cabbage behave in this way, and I have thought that it might answer to sow later than one does for Coleworts, so that the plants just fail to heart in, putting them in rather poor ground to keep them hard and tough in the leaf. To gain a fortnight or three weeks with spring Cabbages is what most growers would like to do. Probably never was the turning in of spring Cabbages more anxiously awaited than this year, and everyone in this neighbourhood was surprised to know that I could cut at that early date. Perhaps some who have large households to supply might be disposed to try the experiment. I intend doing so again, and will in due time report results.—J. C. B.

—While there is such a hankering after new varieties of vegetables as well as other things, there

is a risk of forgetting old friends. This Cabbage is one that ought not to be forgotten, though old as compared with some sorts. It is an excellent variety for succeeding any of the early kinds. I have a batch just now coming into use when the first cutting of Ellam's is all but past. Enfield Market does not come all into use at once like Ellam's, but provides a thorough succession of succulent heads for a long season. It is given to bolting but very little, provided, of course, the seed is not sown before the middle of August. In point of hardiness this Cabbage is equal to any.—M.

ORCHARD AND FRUIT GARDEN.

FRUIT & INSECTS.

MUCH has been written of late concerning insect pests and their depredations amongst our fruit trees and bushes. That in some places caterpillars have been abundant, there can be no doubt; but that we have experienced anything like the visitations of some years ago, when not only orchards, but woods, were literally stripped of all foliage, is so far from true, that in all my travels I have not yet seen a single tree that can be said to have severely suffered from insects. When it is remembered that we have had a dry, hot time, which has been singularly favourable to the spread of insect pests, it seems all the more remarkable that the harm wrought should be so moderate. The intensely sharp April frosts in the one case and the exceeding dryness of the soil in the other have proved, after all, to be the greatest of troubles in relation to fruit culture that we have this year experienced. Really I have had ample reason to remark almost everywhere of the fresh, beautiful leafage on the trees, and in many places on the fine crops they are carrying. That, when the reports as to the condition of the fruit crops are written later, we shall hear of great eccentricities on the part of trees and bushes, there can be no doubt. Some will show fine crops, others poor ones; but, after all, what would be of special interest to learn would be how far the trees and bushes have been injured by insect pests and what remedies have been applied to destroy them. The worst seen so far seems to have been comparatively local. That is in the attack of red spider on the Gooseberry bushes. Red spider is perhaps the most difficult of all insect pests to check. Has anyone succeeded in doing so by the application of any of the myriads of insecticides or other remedies so liberally offered, or in any other way? What is of interest to learn is not what are described in glowing terms as remedies, but what have proved to be not only simple and effective, but cheap remedies. Those that make the outlay to be greater than is the crop are of no use. We read that in America fruit growers cover each tree separately with bell tents and then fumigate them. They cannot in such case be very large trees. That is not an absolutely impracticable course with bushes or even dwarf trees, but with but one such tent it must be slow work. With half-a-dozen constantly in use, a large area of trees and bushes might soon be covered. Still, it would be a costly remedy, and the question after all is, Would it pay? Had all the insecticides advertised the merits attributed to them, practically harmful insects should ere now have been entirely destroyed. Either they are not used in the degree their assumed merits require them to be, or else fruit growers find that insect pests are far from being terrors after all. In any case, more information respecting insects and their attacks this season is needful, as well as reliable reports as to remedies and their application. A. D.

The Apple moth.—In the answer to the query as to injury done to Apple blossom and foliage by

caterpillars, the advisability of syringing with quassia extract and soft soap is recommended, but it is doubtful if this practice is of much avail when the insects are already at work. The season after the caterpillars played such havoc with the Apples some four or five years ago, many cultivators went over their trees in the spring following this visitation, and sprayed thoroughly with an insecticide, but having been comparatively free from the pest since that date, the practice was gradually dropped, and this year we are caught napping. Any solution that would render the bud objectionable to the moth would tend to ward off the attack, but it is difficult to think of any thoroughly satisfactory remedy except hand-picking when the maggot is encased in the leaf or boring its way into the fruit. Remedial measures in the way of syringing would hardly seem to be more efficacious here than in the case of the Onion after the maggot has made its appearance and is eating its way into the bulb. Pears, Plums, and Morello Cherries are quite as badly affected this season with us as Apples, and a lot of time has been spent in clearing them of the pest.—E. BURRELL, *Claremont*.

Layering Strawberries for forcing.—There will be little to complain of this season in regard to early runners if the plants are specially grown for the purpose. The runners will be weak and not at all numerous unless mulched and watered to assist growth, the drought of the past two months having greatly weakened the plants. When plants are specially grown for runners, there is not much difficulty in mulching with decayed manure. With genial rains, such as we are now having, growth will be very rapid, so that all the layers will be rooted before the end of June, thus giving the plants for forcing a long period of growth. This latter is the cardinal point in Strawberry forcing, as without ample roots there is little fruit; a few flower-spikes push up, but the fruit rarely sets. When runners are secured from fruiting plants, there is much delay, as it is almost impossible to mulch as advised for young plants. In such cases I would strongly advise purchasing runners from well-known growers. It is an excellent plan when runners are secured from a distance to place them into 3-inch pots and stand them in the shade for a short time. In such a position they soon emit new roots and fill the pots, when they may be transferred to larger pots. I do not like potting up runners with very few roots direct into the fruiting pots, as often there is considerable loss if not carefully watered. There are various methods of layering; I prefer small pots. Some good cultivators layer direct into the fruiting pots, thus saving time and labour; others use pieces of turf partially plunged. These are often adopted where pots are scarce. It is an excellent plan for new plantations and preferable to pots, as the roots are not cramped and lift nicely into the permanent rows; others place rich compost round the old stools and peg the layers into it. Whatever practice is adopted, it is well to layer as early as possible.—G. WYTHES.

Black Alicante Grape.—It is certain that Black Alicante Grape is one of the most certain bearers and more easily managed than any Grape known to me, but I have never met with any who were accustomed to have choice Grapes on their tables all the year round who would have Black Alicante when they could get any other. Lady Downe's especially, which is contemporary with the Alicante, I have always found received a ready welcome on the table after the new year, always provided that it was thoroughly ripened, not merely black with a fine bloom, but supplied with heat and plenty of air for weeks after the external appearance was perfected. The complaint laid against Alicante is its tough skin and second rate flavour. But as a market Grape (where the majority of purchasers are tempted to buy Grapes from their fine appearance only) Alicante stands unrivalled. It takes on a beautiful bloom, and is easily transmitted to long distances in perfect safety. Except Lady Downe's, I have found no Grape keep sound so long as Alicante, but have never known it to be esteemed as a favourite on

aristocratic tables. I agree with all that "J." says of it except as to its flavour in midwinter. Mrs. Pince and Lady Downe's I have known to be thoroughly relished when Alicante was passed over. I have Lady Downe's Seedling at present (end of May) in as sound condition in every respect as in October, and I prefer its flavour to that of the Black Hamburg and Foster's Seedling we are now cutting for use. I have been able to keep Lady Downe's in perfectly sound condition as late as July. I have tested the keeping qualities of the most of Grapes in cultivation, but found none to equal Lady Downe's Seedling. Its worst fault is spotting during the stoning period, but I have had little to complain of in that respect for some years. When the first indication of the evil is observed I keep air on the house night and day, and the pipes warm all the time to maintain the desired temperature.—M. TEMPLE, *Stirlingshire*.

Strawberry Auguste Nicaise.—This was staged in splendid condition at Earl's Court both on the 13th and again on the 18th. On the former occasion it was one of ten dishes not for competition and much admired. On the last-named date it was first in the single dishes, the fruits being very large and of a more conical shape than is usually seen. This is an advantage, as the habit of this Strawberry is to produce a variety of shapes, some far from handsome. It is chiefly on account of its great size that it is grown, though Competitor and James Veitch are little inferior in size if well grown. Of late I have grown this variety in a cold house and find the flavour much improved. Unless it is grown in less heat than other well-known kinds, the fruits, though large, are not worth putting on the table as far as flavour goes. It is also more subject to red spider than the glossy-leaved kinds, and I find it anything but reliable. When once attacked the fruit will not swell. I consider much of Mr. Norman's success with these large Strawberries is that he gives them ample time, in this way securing size and flavour.—L. H.

NEW STRAWBERRIES.

I HAVE in a previous note in these pages referred to these fruits as regards outside culture, but explained I could not go into their merits for forcing. I now send this note more especially with regard to their forcing qualities. Of the newer Strawberries some, I admit, are not better than older kinds. These I will omit and confine my remarks to those which promise well and which have good flavour, shape, and cropping qualities. In recommending any kind it is essential to remember that soil and culture are the chief points, as often what fails in one locality succeeds in others. I have, as previously stated, noted the value of some kinds. These include Mr. Allan's three valuable additions. These had done well in the open, and this season they have proved excellent forcers; indeed, they will, I feel sure, be reliable kinds. These were shown well by the raiser at the recent Earl's Court show. They had travelled a long distance and were in splendid condition, thus proving Gunton Park, Lord Suffield, and Empress of India to be really good varieties. I have this season seen them forced in various districts, and all did well. Of the three I prefer the last named; there is more of the British Queen type and flavour in this. I claim a high position for Laxton's Royal Sovereign. This was unanimously given a first-class certificate June 21 last year by the fruit committee of the Royal Horticultural Society. Since that date I have had an opportunity of testing its forcing qualities, and it is all that can be wished, and, what is specially valuable in a forcing Strawberry, it is of fine flavour. The raiser also forced it this season to test it, and sent it to Westminster April 11, and it was much liked, so that there need be no fear in adding it to the list if a rich flavour is one of the points required. It is a free grower and not at all fastidious as to soils, while under pot culture it is of strong habit and very prolific. Another of the same raiser's introductions just sent out is Sensation. This was certificated with

Competitor last week, and is certainly a valuable forcing fruit, very strong, somewhat like President in shape, but larger and darker in colour. This comes in at about the same time as President, and I should imagine this to be one of the parents. Competitor, the other variety alluded to, is very large, somewhat like Noble in shape, but more conical—a firm fruit of distinct flavour, a vigorous grower and a good forcer, flesh orange-scarlet, and, like Noble, a free grower with very few small fruits. It is a very showy fruit, and one that will become a favourite. Another fruit that is rapidly coming to the front—and one upon which there are diverse opinions—is John Ruskin, a very early variety. It is a cross between Black Prince, an old well-known early Strawberry, and Dr. Hogg, partaking of the earliness of the former with the size of the latter. This forces well, being of good size and flavour and very productive. I am now gathering it from the open ground (May 22). Scarlet Queen promises well, but I have not yet grown it for forcing. There are others, such as Jubilee and Latest of All, worth notice, but these are more valuable on account of their late qualities than for other purposes. They possess great vigour and greatly prolong the season. They are also valuable on account of their good flavour and their free bearing. I have some in pots this year, and they promise well. They are, however, out of place in a season like this, when one can gather fruits in the open. G. WYTHES.

Apples Worcester Pearmain and Blenheim Orange.—It will take stronger evidence than has yet been adduced to alter my opinion of Worcester Pearmain, for even its latest advocate, Mr. Sangwin, can say no better of it than that it is "only of second-rate quality." Good work has been done in the pages of THE GARDEN in exposing the bad quality of some popular fruits—popular, that is, from the market grower's point of view—but there should be a higher aim amongst private growers than this. I am perfectly sure that Mr. Sangwin can bridge the Apple season from its very earliest to its very latest date without using anything like so inferior a fruit as Worcester Pearmain, and I am sure also that he would be one of the first to acknowledge this. Certainly soils have a great influence on the quality of Apples, but I have never yet tasted a good fruit of this variety from any soil. I grow it on soil that produces magnificent Ribstons, and this should be good enough for any Apple. Turning to the Blenheim, Mr. Sangwin makes a mistake when he says that I have no very high opinion of it. I have a very high opinion of the Apple simply because I know that it is thoroughly appreciated by nearly all Apple lovers, and I also know that no Apple will sell better. I should not think of abusing such a well-liked fruit, but Mr. Sangwin's remark is based on an expression of my own, stated privately, that there were many Apples which I liked better when cooked, and I do not think the Blenheim is the acme of perfection in a cooked state. To me it is rather insipid. All the same, I would strongly advocate its culture wherever it will succeed, there being no fear of tiring the majority of Apple lovers with Benhems or over-stocking the market.—J. C. TALLACK.

Packing Strawberries.—When forced Strawberries have to be sent long distances with many transshipments, great care is necessary when packing is being performed. But I never have been induced to change the system I first adopted, which was first to get the fruit thoroughly prepared by exposure to abundance of air at the ripening period. Place a quantity of Strawberry leaves in a shed or other dry place the evening previous to sending off the fruit. Shallow boxes were used holding one or two layers of fruit (one generally was preferred); each fruit was taken by the stalk and placed on a leaf, then a leaf and fruit time about, placing them as close as they could be fitted together, in order to prevent their moving in the box; leaves of Strawberries or Vines

were spread over them, and if the box was not quite filled, a few leaves of old catalogues or such like were placed to keep them in their place and prevent bruising. Flowers and fruit were sent together, one box tied above the other, the uppermost being the smaller of them, which causes railway porters and others to keep them as desired. I never once knew any of the fruit to be injured; besides carting and other removals to rail, it had not the most kindly consideration otherwise. I have had to send fruit often long distances for more than thirty years to market as well as to private houses (especially during the London season). A few hours before I wrote this I had a youth busy for some time packing Strawberries to go by rail. At the late season the leaves of Limes are used often, not to defoliate too much the Strawberry plants which are to be planted in the open ground. I am at present situated 430 miles from London, and can send Strawberries, Peaches, Grapes, &c., as easily as I could to Edinburgh (only 30 miles off). The most severe test I have had applied to my packing of Strawberries is sending them by parcels post. Once I sent a box from here to London; it was lost for two days, but I was told the fruit was unpacked in excellent condition.—M. TEMPLE.

N.B.—I thank "A. D." for his notes on the French system of sending Strawberries to this country, and hope to profit from the instructions given.

Tying up bunches of Grapes.—There are various systems of manipulating bunches of Grapes in the early stages of their growth in order to have them as compact and uniform as possible. We know that many of the leading Scottish cultivators tie their bunches of Grapes, not to make them loose, but compact, and to prevent thinning as much as possible. Before the bunch is thinned it is tied into the orthodox form with thin strips of matting; this facilitates thinning very much, and the bunches when finished remain a good deal larger than if left untied out. When they are cut for use the matting is easily removed, and the berries are nicely fitted into their position and thus prevented from falling about. At the great Edinburgh fruit shows plenty of handsome bunches are seen, and admired, too, which have been tied into their form, but no trace of tying is then observable. The Scots are too keen on preserving their bloom and form to show the defect of matting or any other material. The writer (when an exhibitor) practised tying as indicated many years ago, and often has helped exhibitors of the present time to do the work of bunch-forming. There is a well-known exhibitor who has had the Veitch Memorial prize with Muscat Hamburg Grapes three times at international exhibitions of fruit, &c. The bunches are formed as soon as setting has taken place. The same exhibitor's Lady Downe's and other Grapes are models of neatness, and so compact that the berries are immovable.—M. TEMPLE, *Carron House*.

CHILLING OF VINE ROOTS.

THE article by "W. I." on Vine borders in hot weather (p. 413) appears at an opportune time, and it is to be hoped that it will have the effect of checking the ardour of those people who are under the impression that Vines cannot have too much water. This is a notion which certainly is on the increase, and even during weather such as we have recently passed through I daresay in far too many instances have the Vines actually had too much water applied to their roots. The result of this undue zeal will be seen now in the berries, especially of the earlier forced Hamburg, shanking badly, this being the result of suspended root-action at a critical stage of the Vine's progress. The nature of the soil, formation and size of the borders all have to be taken into consideration in gauging both the quantity and when to apply water. One of the most sensitive of Vines as regards water is the old Black Hamburg. At the present time I have a large house of Black Hamburg well advanced in colouring, the Vines being

large and healthy, and carrying a fine crop of well-shaped bunches, and for the variety of good size also. The small quantity of water which this house has had would surprise many people. The outside border, now covered with warm leaves and shutters, and likely to remain so for a week or two longer, has not had any water since the Vines were started. No doubt many people would have had both the shutters and fermenting material off weeks ago, thinking that the roots would benefit by the solar warmth. This would have been a fallacy, as the roots would have become chilled, and shanking would have followed. If water had been applied, it might also have had an ill effect. The border is a large one, the soil retentive and the roots are both inside and outside. The inside border has been watered three times, the first when the shoots were 5 inches or 6 inches in length, the second after thinning and the third when the berries began to colour. In neither case was the watering heavy—just sufficient to make the soil nicely moist. If the past week's heavy rain had been allowed to fall on this outside border, the roots would have become chilled, root-action would have been suspended and colouring arrested. As a set-off to the above, in the next house, and which is a mixed one, the varieties being Black Hamburgh, Madresfield Court and Foster's Seedling, water to the inside border has been given twice a week, or not less than three times in a fortnight. The border in this case is small, and if the Vines are to be kept up to their work, constant watering and feeding are essential.

The above shows that no hard and fast line can be laid down when water should be applied, and the advice which is sometimes given, that Vines should be watered in hot weather at least once a week, or, at the most, a fortnight, without due regard being given to the size, soil and composition of the border, is only a delusion and likely to lead those who follow this advice closely into unknown difficulties. A good supply of water in any garden is a great boon, especially in fruit houses, and although I am not going to decry the hose, as I should be only too pleased to have a supply of water through this source myself, yet it is through this often being so handy that the watering of Vine borders has been abused.

Y. A. H.

SHORT NOTES.—FRUIT.

Early English Cherries.—Mr. Peter Cornwall, of Bredgar, Kent, commenced picking Adam's Crown on the 26th ult., thus probably breaking the record of early Cherry picking in this country.

Strawberries in London.—Outdoor English Strawberries, in limited quantities, have just reached the metropolitan markets, mostly from Kent; but on account of the drought the fruit is small and inferior in flavour.

BOOKS.

INSECTS AND FUNGI INJURIOUS TO CROPS.*

THE Board of Agriculture have recently issued a very interesting report on "Insects and Fungi Injurious to Crops," prepared by Mr. C. Whitehead, their technical adviser. This is the fifth report of the series. These reports have now been published annually for the last six years, with the exception of last year, when, for what reason is not given, none was issued. The present one to some extent makes up for the want of one last year, as it contains twenty coloured plates, which is quite an innovation in reports of this nature. In a memorandum, which takes the place of a preface, it is stated that "The Reports upon Injurious Insects and Fungi" which have been hitherto

issued by this department have contained block illustrations only, but with the view of facilitating the identification of insect and other pests, it has been deemed desirable on this occasion to illustrate the descriptions given by means of coloured plates. The memorandum closes with the following announcement: "A special inquiry has been conducted this year into various circumstances attending the prevalence of rust in Wheat, and it is intended to issue as a separate volume the information collected on this point from various observers in this country, giving at the same time some notice of the results, as far as they can be obtained, of the recent researches which have been in progress in other countries." This volume, when it appears, should prove of great value to all agriculturists interested in the cultivation of Wheat. During 1892 there were not any very serious attacks of a particular insect like that, for instance, of the diamond back moth upon the Turnip crop in 1891, but many insects, particularly the Mustard beetle (*Phædon betule*), the Raspberry moth (*Lampronia rubella*), the Currant moth (*Incurvaria capitella*), the red spider (*Tetranychus telarius*), and the Apple weevil (*Anthonomus pomorum*) have been more prevalent than others. Probably the most general visitation was that of the Marigold fly (*Anthomyia betæ*), but the amount of damage generally was not very great. Mr. Whitehead says, "There has been a remarkable and fortunate cessation of the plague of winter moths (*Cheimatobia brumata*), whose caterpillars have in some previous seasons cleared the Apple trees and other fruit trees of leaves and blossoms in orchards, plantations, and gardens throughout the country. This cessation is without doubt due to the measures which have been taken against them, also to some extent to the heavy cold rains which have proved fatal to other species of Lepidoptera." I think this shows that if neighbours over a large district would combine together and all employ the proper means for destroying insect pests, a considerable number of these might be practically exterminated in the course of a few years. As regards fungi, rust and mildew were very prevalent among Wheat. The Hop mildew and the Potato disease were much less common than usual. All the insects and mites reported upon are well known pests, except the Raspberry mite (*Phytoptus rubi*), which very much resembles the Black Currant mite (*Phytoptus ribis*), but is a distinct species; it injures the buds of the Raspberry canes by feeding on them during the winter, which prevents them from opening in the spring. Mr. Whitehead says: "It will be remembered that in the last two seasons, and especially that of 1892, many canes have died away. This was attributed in some cases to frost and the Raspberry moth (*Lampronia rubella*)." In October last it was noticed that the buds in the axils of the falling leaves were brown at their tips, and that the autumnal, or sheathing embryonic leaves or scales were brown. As seen with an ordinary pocket magnifying glass, they appeared to be injured by frost. Under the microscope moving mites were seen in these sheathing leaves or scales and in the inner layer of leaves. There seems to be no remedy for this pest but cutting away the infested canes and burning them and dressing the stocks with a strong mixture of soft soap and carbolic acid or paraffin. Notwithstanding that the other pests reported on are not new, the notes concerning them are very interesting, and the coloured plates which accompany them are mostly very good, but they are decidedly unequal. It is a great mistake to draw flies (the Cabbage and Mangold flies for instance on plate 2) with their wings folded over their bodies; it prevents the shape and venation of the wings being properly seen, and the colour and shape of the body are obscured. Plate 3, showing the frit fly, is much better. The insect is represented with its wings extended at right angles to its body. The position is not so natural, but what is wanted is to give a correct idea of the form of the insect. The figures of the grub and chrysalis of the Apple weevil on plate 8 would have been improved if the outlines had been rather more distinct. On plate 9 three very interesting

figures are given of seedling Turnips attacked by the club-root fungus (*Plasmodiophora brassicæ*), and there are also some good figures of the enlarged cells in the roots. This report is very different from that lately published by Miss Ormerod, as it is a model of brevity and conciseness. The inquirer who consults this report cannot fail at once to find the information he requires instead of reading through several pages. For instance, the Pea weevil (*Sitona lineata*) occupies two pages in this report; whereas no less than nine are filled by Miss Ormerod on the same insect. In one respect this report is at a disadvantage, namely, in price, costing 2s. instead of 1s. 6d., but the coloured plates are responsible for this. If this report meets with the success that it deserves, it will have a very large sale.—G. S. S.

GARDEN FLORA.

PLATE 912.

THE EGYPTIAN LOTUS.

(WITH A COLOURED PLATE OF NELUMBium SPECIOSUM.*)

VIEWED either as a garden plant or for its associations with religion, art, and history, the Egyptian Lotus, or Sacred Bean, is one of the most interesting of all plants. It appears to have been cultivated in various countries other than those of which it is a native thousands of years ago. Botanists have decided that, notwithstanding its early associations with Egyptian art and religion, it never was a native of Egypt, but must have been introduced into that country at a very early period. Once introduced, the beauty of its leaves and flowers could scarcely fail to appeal to the love of art with which the ancient Egyptians are credited, and we know from its recent behaviour in the United States that in conditions favourable to its growth it soon takes possession of large areas of water.

In *Garden and Forest*, vol. ii. (1889), p. 173, there is a most interesting paper on the Nelumbium in Egypt and its influence on art. With reference to the question as to the right of the Nelumbium to the name Lotus, it is there stated that

Many kinds of Water Lilies were familiar to the ancient Egyptians, and the name Lotus appears to have been given to them all. Among them were Nymphæas analogous to our common white and yellow Water Lilies, and also a species with blue flowers (*N. stellata*), and another which was either red or white, with red-streaked sepals (*N. Lotus*). But the true Egyptian Lotus, the Sacred Lotus of the whole East, is the plant with rosy flowers, which Linnæus called *Nymphæa Nelumbo*, but modern botanists have placed in another genus and called *Nelumbium speciosum*. The Lotus seems to have been revered in India as well as in Egypt from the dawn of history, and it is not impossible that it travelled from the former country—where we know it is indigenous—to the banks of the Nile at a time so remote that even Egyptians of the earliest historic dynasties may have believed in its local origin.

It is remarkable that a plant which was once so plentiful along the banks of the Nile as to form extensive thickets should now not be represented at all.

The extensive thickets which the Lotus formed along the banks of the Nile are frequently pictured on Egyptian monuments, with men in boats hunting aquatic birds and animals among their crowded stems, and ancient writers tell us that popular festivals were held among those green and rosy water groves.

* Drawn for THE GARDEN by Gertrude Hamilton in the Royal Gardens, Kew. Lithographed and printed by Guillaume Severeys.

* Board of Agriculture's "Report on Insects and Fungi Injurious to Crops," 1892. Eyre and Spottiswoode. 1893. Price 2s.



The Lotus appears to have faded away from the Nile with the glory of the Egyptians.

Buddha is said to have first appeared floating on the mystic flower of the Lotus, and it is suggested that the spread of Buddhism carried the Lotus to China and Japan, where it soon grew to be beloved, and is now largely cultivated and represented, according to trustworthy Japanese pictures and accounts, by a great number of varieties of which we in England know practically nothing.

At every step in Japan one finds great tanks filled with the Lotus, and in many religious ceremonies it has its functions, while the peculiar grace of its habit and its beauty of form and colour in leaf and bud and flowers and fruit, added to its religious significance, have made it chief among the artists' models. Countless works of Japanese art are based, palpably or remotely, upon the Lotus.

According to Sir Joseph Hooker, *Nelumbium speciosum* is wild throughout India, extending as far to the north-west as Kashmir, and it is also a native of Persia, the Malay Islands, China, Japan, and Tropical Australia.

It has two other names besides that of *N. speciosum*, viz., *N. nuciferum* and *N. aspericaule*. There are only two good species of *Nelumbium*, namely, that here figured and the yellow-flowered *N. luteum*. *N. speciosum* was introduced into English gardens about a century ago. Its requirements under cultivation are of a somewhat special nature, and, notwithstanding the recommendation of some writers to grow it in tubs in an ordinary plant house, it may yet be called a rare plant. At Kew it is grown in a corner of the Water Lily house, the corner being so constructed that it affords a commodious triangular bed 3 feet in depth. This is filled partly with drainage and partly with good loam and cow manure. The corner is connected with the tank in the centre of the house by two pipes, through which the water passes into the *Nelumbium* soil, and keeps it in the condition of mud. In this the *Nelumbium* grows well and flowers freely. It also grows fairly well if planted in a large pot or tub submerged in the tank. The water in this tank is kept at from 60° to 70° whilst the plants are in growth. *Nelumbiums* are difficult to establish, but when they do get hold in a suitable place they grow with amazing rapidity. Perhaps the most remarkable instance of this is recorded in *Garden and Forest* in 1889 by Mr. E. D. Sturtevant, of Borden Town, New Jersey, well known as an enthusiastic grower of and dealer in aquatic plants of all kinds. I cannot see why *Nelumbiums* should not be grown in the open air in the warmer parts of England and Ireland after the success of Mr. Sturtevant in the United States. His account is of so much interest and so full of suggestions, that I venture to quote it here:—

Two miles from my present home (in New Jersey) is an artificial pond, a secluded corner of which was selected for the experiment. Many years ago this spot was rich meadow land where farmers were accustomed to cut hay. The soil is a dark greasy clay, and since the formation of the pond has been made richer still in vegetable matter by the deposit of sediment in times of freshets by the wash from adjoining hills. *Nuphar advena* was the principal aquatic plant growing there. By the courtesy of the farmer who owns the property the experiment was made, and about nine years ago a single plant of *N. speciosum* was placed in the centre of the little cove where the water is from 1 foot to 2 feet deep. It soon became established and began to spread in all directions, blooming profusely each year. One summer it was nearly destroyed by cattle from an adjoining pasture.

They found the foliage a sweet morsel, and ate it all down.

In a year or two the plants recovered and went on making their marvellous growth, and during the past summer and autumn they showed a solid mass of magnificent foliage and bloom, covering three-quarters of an acre. Last August, at the height of the blooming period, about 500 of the beautifully shaded pink flowers were open at once. In their last stages of expansion they measure from 10 inches to 13 inches in diameter. They stand from 3 feet to 6 feet above the water, and in some instances flower-stalks pulled from their base in the mud measure 8 feet in length. Multitudes of leaves are found 24 inches to 30 inches across, and one season I found a leaf which measured 3 feet in diameter. The tallest man is hidden from view when walking through the mass of foliage. Not content with remaining in the water, an occasional plant will creep a few feet out into the thicket of



Nelumbium speciosum: showing habit of growth.

Alders and wild Roses on the bank, apparently satisfied with a moist soil without water on the surface. When the frosts of October came a few buds were caught still expanded.

Such a tropical aspect does this plant here present, that one would scarcely be surprised to see Palms and Bamboos growing upon the shores of the pond. Could similar pictures be reproduced in the parks of our large cities, they could not fail to attract the admiring attention of thousands of people.

If we remember that the winters in New Jersey are colder than in England, and, looking at the fact that Mr. Sturtevant's plants often passed the winter under ice 10 inches thick, the probability that this *Nelumbium* would thrive in many sheltered lakes or ponds in the warmer localities is obvious. It has been tried at Kew and is being tried again, but it ought to be tried in Cornwall, Devon and all along the south coast both of England and Ireland.

The *Nelumbium*, even when restricted to a large pot or tub, is beautiful—there is no plant more beautiful. The corners of the Water Lily house at Kew are charming to all who know what a really lovely plant is. At the pre-

sent time (May 17) one of these corners is crowded with leaves 2 feet in diameter, and already there have been several open flowers within the last few days.

There are numerous varieties of *N. speciosum*, the Japanese possessing a grand series of them. The flowers vary in colour from pure white to pink, pink and white, red, red and pink and blood crimson; others are white, with crimson flakes or feathers like the old-fashioned Tulips; others, again, have yellow in them. Some are as large as a decent-sized Cabbage, others no larger than a *Maréchal Niel* Rose. Varieties with twin flowers on each stalk are also known. There are perfectly double flowers, semi-double and single, and they are all powerfully and deliciously fragrant. In a scientific Japanese work called "*Honzo Zoufu*" there are pictures representing over eighty varieties of *N. speciosum*. Evidently the Japanese have developed the Lotus in the same way as the Dutch have the Tulip. It is time we gained possession of some of these Japanese treasures.

N. luteum, the second species of *Nelumbium*, is not so well known; indeed, is a very rare plant in English gardens. It is grown out of doors in Paris, and I believe it has been cultivated and flowered outside for several years in the south of England. It resembles *N. speciosum* in every point except in colour, *N. luteum* being, as the name indicates, pale sulphur-yellow. It is a native of various parts of the Southern States of North America, and it has also been found in Jamaica, but appears to have long disappeared from that island. It is probably slightly harder than *N. speciosum*, but at the same time it is certainly more difficult to cultivate here. I have seen it flowered nicely in the Water Lily tank at Kew, where it is often raised from seeds, but it has never been established there in the way *N. speciosum* has. According to Mr. Sturtevant, *N. luteum* fills entirely large ponds in the United States, so that it would appear to grow luxuriantly enough where the conditions are favourable. From a note in *Garden and Forest* last year, however, it would appear that the native species receives little notice from horticulturalists in America:—

The *Nelumbium* of the Orient has so occupied the attention of the public of late years since it has become a familiar object in many public and private gardens that it is not always remembered that North America possesses a second species of the same genus. Less beautiful, perhaps, than its Old World relative, the American *Nelumbium*, or *Water Chinquapin* as it is sometimes called from a fancied resemblance of its seeds to those of the true *Chinquapin*, is one of the most interesting and striking of all hardy aquatic plants, and there are many ponds in the Eastern States which might well be covered with its great circular cupped leaves and pale yellow flowers raised high above the surface of the water. *Nelumbium luteum* is by no means a rare plant in the Mississippi basin and in many of the States which border the Great Lakes. It grows sparingly in the Connecticut River near Hartford, and at a few other places in the east, although it was probably introduced by the Indians into eastern rivers, as it is so rare and local in this part of the country that it does appear probable that it grew here without man's assistance.

A few years ago the late Mr. Hovey frequently called the attention of readers of *THE*

GARDEN to the beauty and interest of this plant, which he styled the "Pride of the Western Waters." I wonder if the Americans have ever tried to hybridise the two species? The result might be a distinct improvement in the constitution of the Nelumbium.

W. W.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

AUTUMN BROCCOLI.—Whatever failings other Broccoli may have as regards hardiness, there can be no question as to the great value of this, one of the best autumn and early winter vegetables in cultivation, a succession at this time being assured from at least two plantings. The first having been raised in a frame and well hardened off should now after the rain be planted out. Later plants which were raised in the open ground will follow on also quickly for planting, the weather being all in favour of a quick growth. As for all other crops of this nature, an open plot of ground is the best, the plants being set out in drills drawn 30 inches apart and the plants 2 feet apart. By being set out in drills, water when this is needed, is more easily applied, although, except in very dry weather, once watering to fix the soil about the roots and so give them a start is sufficient.

TOMATOES IN PITS AND FRAMES.—Capital crops of Tomatoes may be secured in pits and frames, and any which may have been utilised for Potatoes or such like crops may well be used for Tomato growing. Varieties such as Early Ruby and Conference are excellent kinds for frame work, not being strong growers, and also setting and swelling off heavy crops under such confined space. If the frames have already been occupied with Potatoes, no other preparation of the soil is needed. Before planting, a trellis should be erected, so as to bring the stems up to the glass. This trellis must also be close enough to prevent the fruits falling through. A trellis will be found a much better plan than allowing the stems to trail upon the surface of the bed, and then having to support the trusses of fruit—no easy matter. Squares of glass may be placed under these, but, on the other hand, these cause a condensed moisture to form under the fruits. Plant out along the front of the frame, training the stems slant-wise. Sufficient shoots may be allowed to form without crowding, keeping all superfluous side growths promptly removed. Even if the frame should not already have been occupied with Potatoes, it is an easy matter to place a ridge of soil along the front, keeping it in position by a board or bricks. In this confined space the plants will require abundance of water and also feeding to swell off the crops. Do not attempt at any time to sprinkle overhead and close up the frame with sun heat, thinking that the plants or fruit will be forwarded, as on account of the sudden lowering of the temperature during the night and the stagnation of the atmosphere, disease is very apt to appear. Keep a little air continually on, increasing it more or less during the day, and reducing in the same ratio.

PLANTING TOMATOES IN THE OPEN.—The weather being favourable, the planting of Tomatoes may well take place in the first week of June. As the soil close up under walls is often poor, stations must be prepared for the plants either by adding fresh compost or improving the soil by the addition of kainit and bone superphosphate in the manner recently noted (p. 405). Nor must moisture be lacking at the roots; not that large supplies are needed, but sufficient to keep the plants moving freely. Heavily charging the soil with animal manures is also not good. Well-pulverised horse manure, however, may be used with moderation, and this, with a free use of burned garden refuse, is sufficient to grow good crops. Where fresh turf is being used for placing about the roots, see that no wireworms are present,

or in all probability these will eat into the hearts of the plants and cause their early collapse. Plants are not often now planted right in the open, except in favoured districts and soils; therefore Tomatoes must be looked upon as a crop that succeeds only when favoured with very fine weather. The plants under this system succeed better on a southern slope, the plants being set out 4 feet apart, supporting each with a stout stake. Plants of Earliest of All, Early Ruby, or even the old Orangefield, on account of their dwarf stature and early fruiting qualities, are the best for this system.

PREPARING CELERY TRENCHES.—The trenches for both the early and main-crop Celery should now be prepared; in fact, the earliest plants are now fit for being put out in the trenches. Where double cropping is practised, that is, where the tops of the ridges are used for such crops as Lettuce, French Beans, or Turnips, these may be planted at any convenient time. The situation should be open, and the rows made to run from north to south. For double cropping, the space between the rows, that is, from centre to centre, should not be less than 5 feet, and where this double cropping does not take place, 6 inches less; there will then be ample soil for earthing. Celery succeeds best when in single rows, but in any case not more than two rows should be planted; therefore the width of the trenches should be 15 inches and 20 inches respectively, the depth being 1 foot. The soil having been taken out to this depth, fork up the bottom and on this lay the manure, with the addition of burned refuse. Over this spread a layer of 2 inches of the best of the soil taken out. On cold soils, bring up the surface of the trenches to within 2 inches or 3 inches of the surface. A. YOUNG.

ORCHIDS.

I do not remember a season when the culture of Orchids gave less trouble than this year. The shading of the plants has hardly been any trouble, for the sunshine has usually lasted all day without intermission, and there has been no rain—at least none to speak of—since the shading was put up. We can go steadily on with our work, and there is a good deal to do at present. What with keeping the plants clean, repotting some, and surface-dressing others, there is plenty to do for some time to come. Perhaps enough was said about the repotting of Cattleyas and some other plants last week, and after repotting, more rather than less attention is needed to start the plants into good growth again. There is nothing like practical experience for teaching the cultivator how to manage different plants, and this experience soon shows that some species of Orchids can be grown with but little trouble, while others baffle the skill of the most experienced cultivator. As nearly every species can be grown fairly well for a few years, it is easy to obtain a few newly-imported plants at intervals of two or three years. For instance, no one could grudge the few shillings required to purchase a fresh lot of *Dendrobium Wardianum* after the old plants have exhausted their strength in flowering. The same remark applies to *D. Bensoniæ* and a few others. Those who are not wealthy, or who would not care to spend £100 on a single plant even if they could afford it, will find that the most beautiful Orchids are often the most common. As a rule very high prices are paid for Orchids because of their rarity. There may only be two or three plants in existence of a particular Orchid, and if half-a-dozen rich amateurs are anxious to obtain them, it naturally follows that they must be very dear. The plant may be the most beautiful of its kind, and yet be far inferior to a *Dendrobium* at 2s. 6d. Beautiful Orchids that everybody may grow well are plentiful, and the few that are not amenable to culture may be left alone; but if it is found that certain growers have managed to successfully cultivate a difficult plant, it is easy to go in the same track as they have done, and hints are very often picked up by visiting

other collections. The other day I saw *Cypripedium Chamberlainianum* growing well in a shady part of the Cattleya house with *Phajus Humbloti*; both were found to succeed better there than in the warmest house. In the very early days of my Orchid experience I failed to grow *Cattleya superba* in flower-pots, but when the plants were fastened to pieces of Tree Fern and suspended near the glass roof of the warmest house, they speedily recovered and flowered well for many years.

We have learned a great deal during the last quarter of a century as to the right and wrong treatment of certain Orchids. At one time every known species was expected to grow in peat and Sphagnum, or Sphagnum alone; but we have found that many will grow better and flower freely in loam, or loam mixed with peat. The very singular *Cypripedium caudatum* is often seen in a half-starved condition grown in peat and Sphagnum, and placed in the warmest house; the plants do better in a mixture of good fibrous yellow loam and kept in the coolest and shadiest part of the Cattleya house. One of the healthiest plants I ever saw was in the collection at Burford Lodge, and it had been grown in the cool house. I generally repot the plants as they go out of bloom, and they should be seen to at least every second year, for loam is not of quite such a lasting character as peat. A little fibrous peat and Sphagnum may be used with the loam. *C. Spicerianum* and seedlings from it will also do better in fibrous loam, but they should have been repotted either in the winter or early spring. Nearly all the winter-flowering species and varieties of *Cypripedium* are better if repotted when they have passed out of bloom. Many of the summer-flowering *Cypripediums*, such as *C. villosum*, *C. Lawrenceanum*, *C. barbatum*, &c., are best repotted at the present time. All the deciduous species and the numerous garden varieties of the vestita section of the *Calanthes* are now pushing rapidly into good growth. They do better placed near the glass roof of the warmest house. See that they do not suffer from lack of water at the roots, and when applying water, see that it reaches every part of the soil. I use rain water, and it is generally a little warmer than the atmosphere of the house. Some cultivators, eager to excel, give strong liquid manure water and do much mischief in two ways—by using it too early and too strong. No manure water should be applied until the plants are so well established that they have filled the flower-pots or pans full of roots, when it may be applied twice a week. The liquid should be used clear and not too strong. Cow manure is best. Some of it may be put into a barrel of water, be well stirred up, and allowed to stand for twelve hours until the thick substance settles to the bottom. The *Pleiones* are growing away freely, suspended from the glass roof of the Cattleya house. They are very easily managed, but must have the treatment they really need, or they will make unhealthy growth and flower badly. I saw a fine batch of them the other day in the garden of Sir Trevor Lawrence, Bart., at Burford Lodge, under the care of Mr. White, and the point in his culture, which he believed to be the cause of such satisfactory results, was repotting the plants without parting out the bulbs. I remember to have seen a very fine lot of plants on another occasion in the College Botanic Garden, Dublin. I shall certainly try Mr. White's method next year.

J. DOUGLAS.

FRUIT HOUSES.

FRUITING PINES.—Owing to the long spell of summer-like weather experienced, early Pines have made rapid progress and ripe fruit will soon be plentiful. Queens are principally ripening thus early, and, in order to improve the quality, the fruit ought to have the benefit of a drier atmosphere and more air from the time colouring has well commenced. Do not wholly dry them off at the roots, the better plan being to give just enough water to keep the soil from becoming dust-dry, and the fruit will then be juicier and of better

flavour than would be the case if water was withheld altogether. When too many are ripening at one time, retarding some of them after colouring has started may be practised, while, if possible, a few might be subjected to an increased temperature, raising them well up to the glass near the highest part of the roof and keeping them somewhat on the dry side at the roots hastening ripening considerably. A vinery where the Grapes are nearly or quite ripe being, therefore, kept dry and airy without reaching a very low temperature is the best place for keeping Pine-apples in after they are nearly or quite ripe, and they will also keep well in comparatively warm, dry fruit rooms. The suckers should be removed from the plants before they are placed in these cool quarters, or otherwise a severe check will be given to the former. Plants that are to produce ripe fruit next autumn ought to be started early in June. Being for a month or more previous kept somewhat cool and dry, fruit ought to show soon after the plants are subjected to a strong top and bottom-heat. Those that fail to show fruit should be kept dry at the roots till they do start. Strong, well-rooted plants of Charlotte Rothschild and Smooth Cayenne that are to give fruit in the winter ought during June to be resting preparatory to starting them in July. Keep them somewhat cooler than heretofore and on the dry side at the roots. Pines swelling off—those ripe and nearly ripe, as previously advised, being shifted into more suitable quarters—ought to have abundance of heat and atmospheric moisture, liquid manure, notably guano water, being freely applied to the roots. While daylight lasts the temperature ought not to be much below 75°, 70° being the minimum during the night. Close early enough on bright days to raise the heat to 90°, well sprinkling beds, walls, and floors with water, and the plants overhead also, about three times a week.

YOUNG PINES.—Those early placed in their fruiting pots ought now to be well established in the fresh soil, very much depending upon the treatment they receive during the next two months. If the pots can be well filled with roots, and these kept in a healthy state, there will be no difficulty in making the plants produce fine fruit in due course. Not much fire-heat is needed, as a rule, during the summer, but it is not often safe to dispense with it altogether, even for a short time only. An excess, however, is most injurious, especially if sunshine also prevails. Keep only enough heat in the pipes to prevent the night temperature from falling below 70°, and at all times make as much of sun-heat as possible. Ventilate in the morning when 75° is reached and gradually admit enough air to keep the houses or pits somewhere near 85°, closing early enough in the afternoon to run the heat up to 90°, at the same time spraying the plants and damping down the walls, beds and floors. Shade lightly during the hottest part of the day, or otherwise the leaves may become badly browned. A bottom-heat of 85° ought still to be maintained, the pots being kept neatly and firmly plunged in the heating material. It is in the matter of watering that mistakes are most often made. If too much water is given, the new soil becomes sour and never after is taken possession of by roots, and the other extreme usually leads to premature fruiting; therefore water before the soil becomes quite dry and give enough to just moisten it throughout. The condition of the soil below the surface can best be tested by means of probing with a barbed stick.

RIPE AND RIPENING GRAPES.—Ripe Grapes should be kept quite cool and the house dry, but at the same time do not injure future prospects by allowing the borders to become very dry and to crack badly. Mulching with straw manure alone is not enough to prevent the latter occurrence, and before the borders become very dry give a good soaking of water, this being done in the mornings of clear days. Early Grapes, especially the black varieties, are none too well coloured this season, the great heat of April bringing them along rather too quickly for the colour to be laid on properly. Hanging will not improve their appearance, but rather the contrary, and if the foliage is not par-

ticularly stout and abundant, the Grapes underneath will keep all the better for a light shading with lime water, this being made thin and sprayed over the glass with a syringe. All the time the successional crops are swelling fast keep up a brisk heat and plenty of atmospheric moisture. A night temperature of 70° is suitable, air being given in the morning directly 75° is reached, and gradually increased so as to keep the heat at about 80°, front air being admitted in the case of those houses that cannot be kept sufficiently cool without it. Span-roofed houses should have the front ventilators opened on the east side in the morning and on the west side in the afternoon, the former being closed soon after 1 o'clock. In each and every case close early enough to raise the temperature to about 90° for a time. If scalding of the berries takes place at the ends, lightly shade these with lime water or whitening. Early ventilation is the best remedy for scalding of berries in other parts of the house. When colouring commences, a much freer circulation of air must be kept up, a little front air being put on every night. A drier atmosphere is desirable, the bloom on the berries being thin when the house is kept unduly moist, but do not wholly cease damping down, only do this less often than formerly and while the house is freely ventilated. After colouring has commenced, that is, as a rule, the last opportunity for some time to come of profitably and safely applying liquid manure, unless it happens that the borders are small and require water often. If the border is in a fit condition to receive it, give a good soaking, and if not already done mulch with straw manure.

W. IGGULDEN.

PLANT HOUSES.

STOVES.—By this time the plants will, where the growth has been luxuriant and free, be getting too much crowded; this is more particularly the case where Caladiums and other plants which increase in size rapidly are grown to any extent. Relief should be afforded in every possible case by removing the hardier plants to other houses. Peach houses, for instance, and vineries as well may be utilised for this purpose where there is no mealy bug to be carried along with the plants. The conservatory also will be a very suitable place when the plants are a little more hardened off, so as not to feel the change. Of plants that can be thus managed are several of the Palms, such, for instance, as *Areca lutescens*, the *Kentias* where they have been grown under stove treatment, *Cocos plumosa* and the *Chamædoreas*; any Palms, in fact, that are known to withstand a cooler treatment during the summer months. Exception must be made in the case of *Phœnicophorium*, *Verschaffeltias*, *Geonomas*, the *Thrinax* and a few other kinds, all of which are only safe when in heat and moisture. Several of the *Dracænas* can also be subjected to a cooler treatment when the room is required, more especially the taller and robust-growing kinds, as *D. Baptisti*, *D. Youngi* and others of like growth. The hardier of the stove Ferns can be treated in like fashion, as well as other incidental plants, the shifting of which to other houses will afford an immense relief to those subjects now standing in need of it, and which take nothing beyond pot room in the winter, as well as for the younger stock of permanent plants, which if they be too much crowded together at that stage of growth will never make satisfactory plants. The houses, of course, to which the plants are taken should not be those where fruit is ripening, but those where the amount of moisture is more congenial with less ventilation than would otherwise be the case. Where there are two or more green-houses, one of these may with every advantage be utilised during the summer months as a stove; when this can be done it is better in all ways for the plants.

GREENHOUSES.—These also may in a measure be relieved of several occupants, many of which will now be quite safe outside—in fact better off than in some cases. The *Kalosanthes* will, for

instance, colour much better when fully exposed to sun and air, and the *Ericas* which are getting past their best and have made a fair growth can also be turned outside in a warm spot. *E. Caven-dishiana*, the *ventricosa* family, and the earlier forms of *tricolor* can be subjected to this treatment in a week or two. Of other and quicker growing plants, the *Cytisus*, the *Acacias*, and the *Abutilons* are further instances where the open air will be found better, and that at once as a safeguard against attacks of red spider, which appears to be more prevalent than usual this season amongst plants in general. Where room can be found to utilise such plants as *Phormiums* and *Dracænas*, the hardier Palms and *Aralias*, *Agaves* and other succulents in the flower garden and pleasure grounds no opportunity should be lost in doing so, this affording immense relief to the greenhouse proper for the next few months.

INSECTS.—A few remarks upon the red spider may be found desirable at this time, for it is not by any means upon Vines and other fruit crops alone that this insidious pest is to be found. In the greenhouse it will attack *Pimeleas*, *Hedaramas*, *Croweas*, *Chorozemas*, the *Boronias* even, and such as *Ple-romas*, whilst many climbers as well will be troubled. A close watch should be kept against its ravages and the syringe used as soon as it is found, or sooner even if there be the remotest suspicion of its existence. As plants go out of flower, or in the case of others not yet in bloom, sulphur should be incorporated with the water; a few applications of this, if allowed to remain, will be found effectual. This insect will attack plants in the stove as well. It behoves everyone, therefore, who wishes to keep his plants in as good a state as possible to be on the alert to prevent its ravages. When dealing with stove plants, I prefer to depend upon soot water, not black-looking, but with the chemical properties extracted through the soot being kept in a bag in the water. This will be found an excellent remedy. A deal can, of course, be done by the daily use of the syringe, avoiding the methodical fashion of syringing. After such a long continuation of dry weather, it will not be surprising if red spider be more troublesome than usual, more particularly when it is to be found upon so many plants and trees even outside.

Mealy bug will also give a lot of trouble, involving not only labour, but severely taxing the patience also. Those who have succeeded in exterminating it can only fully appreciate the intense relief thus afforded. Now it will be found a difficult matter to do this, the best remedy for the present being a free use of the syringe, with a weak solution of paraffin oil. To do this with safety, two pairs of hands are better than one, two syringes being employed, one person syringing the plants and the other drawing from and returning the water to the can so as to keep the oil well mixed. All insects, in fact, are at such times as the present more than usually troublesome, and it is only by persistent efforts that they can be held in check. Fumigation, if performed now beyond a moderate degree of strength, will necessitate shading for a day or two afterwards to prevent scalding. Spraying here and there where thrips and fly abound will often not necessitate fumigating the entire house or houses. It is useless to defer attacking insects; immediately they are seen they should be proceeded against, the result in the end being a great saving of labour, not to say annoyance as well.

JAMES HUDSON.

Flowering shrubs from Belgrove.—I send by this post a boxful of specimens of some scarce and beautiful flowering shrubs now in flower with me in the open air, on the merits and beauties of which I shall be glad of your opinion. The white bunch is the rare *Ceanothus velutinus*. The Thorn is *Cratægus Gumperi bicolor*, which I consider the most distinct and beautiful of the single-flowered varieties, as Paul's Scarlet is of the doubles. The white Honeysuckle is the rare *Lonicera Maaki*, introduced by the late Dr. Regel, and shortly to be figured in the *Botanical Magazine*.

from my plant. *Crinodendron Hookeri* is now covered with its brilliant scarlet bells on my garden wall, and *Wistaria multijuga* with white and lilac flowers on racemes 2 feet long is now in profuse bloom and great beauty on one of my walls. Of all the shrubby *Spireas* I consider *Lemoine's S. rotundifolia* alba quite the most beautiful.—W. E. GUMBLETON.

** The *Ceanothus* is distinct and handsome and the Hawthorn charming; indeed, all the plants are most interesting.—ED.

ORCHIDS.

ORCHIDS AT THE GRANGE, HACK-BRIDGE.

IN Mr. Smee's garden at The Grange not only the large-flowered and showy Orchids are grown, but some of the curious and small-blooming species. For instance, a plant was shown me of *Masdevallia acthodes*, a small-flowered kind which had not been out of bloom for the last twelve years. Although it is an unattractive kind, it shows what can be achieved with these plants. There are, however, many of the brilliant coloured kinds, such as the beautiful *M. Shuttleworthi*, with its large flowers, of a beautiful purplish mauve and white, the concave upper sepal pale yellow, dotted with red, each sepal having a slender yellow tail some 3 inches long; and *M. Wagneriana*, another curious little plant, having yellowish buff flowers. This is most interesting because it was one of the first, if not the first of the genus which flowered in this country, now just over forty years ago. It comes from Caraccas at a somewhat lower elevation than the majority of *Masdevallias*, and consequently requires slightly warmer quarters. Here also are to be seen *M. ignea* in various forms, but all of them having the sepals of a bright cinnabar-red of various shades, marked with straight lines of a deep crimson. Various, however, as are the flowers in their shade of colour, they always retain the peculiarity of having the upper sepal narrow and bent downward. The plant comes from a good elevation and requires but little heat. *M. Harryana* was also flowering freely. Amongst the richest in colour was *M. Denisoni*, which has flowers of a dark reddish purple. Others, again, have blooms of a rich magenta, scarlet and crimson of different shades, but I have not yet seen the pure white-flowered form which we have so often been promised by different collectors. *M. amabilis*, although somewhat small-flowered, is yet very brilliant. *M. Veitchi*, the largest and most beautiful of the whole genus, has some very fine blooms of a bright orange-scarlet, bearing deep purple papillae thickly over its surface. Some *Odonoglossums*, such as *O. crispum* and *O. Pescatorei*, were flowering after their last summer quarters in the open air, but as Mr. Smee uses a goodly number of flowers for house decoration, the majority of them had already been cut for this purpose. As showing the value of putting the cool kinds from Colombia and Peru in the open air and allowing them to make their growth was a plant of *Oncidium macranthum*, which had made a very long spike, and which will soon be a mass of bloom. This, I was informed, had begun to show in the open air, and a length of 10 feet was made in this position before it was removed indoors in the autumn. The grounds at The Grange are well adapted for this kind of experiment, as the river Wandle, which run through them, renders

the air particularly moist. Amongst other plants which are well cared for here are the beautiful small-growing *Disas* from the Cape, the only one now flowering, however, being *D. tripetaloides*, the flowers of which are creamy white, dotted with crimson. Another curious plant is *Lycaste Deppei viridis*, having the sepals plain green, quite destitute of the spots and blotches which are characteristic of the typical plant. *Maxillaria Sanderiana* is another plant in bloom, and here I find the medium temperature is accorded it, as has been in all the collections where I have seen it blooming of late. Many forms of *Cypripediums* are blooming, amongst them being some fine forms of *C. Lawrenceanum* and a very handsome yellow form of *C. villosum*, but not yellow enough to be called aureum. *Dendrobiums* are also very gay, *D. thyrsiflorum* and its fine variety *Walkerianum* particularly so. This is distinguished by its much longer raceme and larger flowers, these having pure white sepals and petals and a rich orange-coloured lip. *Brassia brachiata* is now flowering, making a long, many-flowered spike. Mr. Smee himself confounds this with *B. Wraye* of the *Botanical Magazine*, t. 4003, but from this it is easily distinguished by the great length of its lateral sepals. *Dendrobium cariniferum* is another uncommon plant now flowering. It is one of the nigro-hirsute species, having somewhat large flowers of a fawn colour when they first open, but becoming ivory white with age. The three-lobed lip is produced behind into a somewhat obtuse spur; the side lobes are reddish orange, the base of the middle lobe of the same colour, but passing out by the tip into ivory white.

The *Cattleyas* are quite a speciality with Mr. Smee, and a large house is entirely devoted to their culture. It contains many of the best varieties of *C. Trianae*, now past, also many grand forms of *C. Mendeli*, now in their full beauty. Many fine varieties were to be seen, but it is in *C. Mossiae* that this collection is so rich. Here was the typical plant in great beauty flowering profusely, as well as a great number of varieties. There was also *Wagener's* form with pure white flowers, saving a tinge of clear yellow in the lip, and which adds much to its beauty. *C. Reineckiana*, with the sepals and petals of the purest white, the lip stained in the centre with purplish mauve, the throat orange and having a broad outside border of white, which is prettily undulated and frilled at the margin, was also in bloom. Besides those enumerated there are many which deserve a varietal name, but two I must note. *Venus* is a bright and telling flower with good sepals and petals of a rosy lilac, the lip being large, richly coloured in the centre, deep orange in the throat, and with a wide pale margin. A form named *Mrs. Smee* is one of the best kinds, the pose of the flower being exquisite. It measures about 8 inches across; the sepals and petals are broad, and have a faint feathery stripe of crimson-magenta at the tips, beautifully undulated at the edges, of a rich rosy purple throughout; lip large and full, of the same colour as the petals, the large middle lobe beautifully undulated and frilled, the centre streaked and flaked with rich magenta, which is carried out on to the pale border in dotted lines and freckles, whilst the sides of the throat are stained from the top well out into the lobe with rich amber-yellow, the interior of the throat being prettily streaked with bright purple. It is a grand flower. WM. HUGH GOWER.

Phalænopsis sumatrana. — Amongst the most beautiful of Orchids is this *Phalænopsis*. It is an old introduction from Sumatra, and first

bloomed in this country in 1865, in the collection of the late Mr. Day at Tottenham. A plant is in bloom at Kew in a basket near the light. The leaves are of a bright green shade and the flowers yellow, enriched with bands and bars of chestnut-brown, this colouring appearing deeper in some parts than on others.

Cool Orchids at Kew.—We noticed a few days ago a remarkably interesting group of cool Orchids in the Kew collection. *Disa racemosa*, a bright showy flower, not difficult to grow, was conspicuous, whilst associated with it was *D. tripetaloides*, which is exceptionally well cultivated at Kew. The plants are crowded with spikes, the flowers usually of a pinkish colour, dotted with purple, but sometimes white. Although only introduced by Mr. J. O'Brien from South Africa about four years ago, it is already popular. Healthy spikes carry upwards of thirty flowers, and the narrow leaves appear close to the soil in the form of a rosette. At all times a cool temperature is necessary; in winter just sufficient warmth to keep out frosts, and in summer abundance of moisture. Also in full bloom were *Serapias lingua*, *S. l. luteola*, which has yellowish flowers, *S. cordigera*, purple-crimson, and *Orchis insectifera*, which is not unlike the Bee Orchis in expression.

***Laelia majalis*.** — Although this Mexican *Laelia* is much more frequently seen in bloom than formerly, yet I believe the failures far outnumber the successes. This no doubt must be attributed to the want of a suitable place in which to grow the plants. This is what I find with my plants. If any Orchid requires direct sunlight so that it may be grown successfully in this country, it is the subject of this note. My plants are grown in the Rose house, a position which appears to suit them admirably. Here during the day they have a high temperature, which runs down to about 55° at night. The plants are syringed overhead every morning and afternoon, at least when the weather is bright, the ventilation also being rather free. The plants are kept in this structure throughout the summer months so as to swell the pseudobulbs well up, and during the resting season they are hung up near the roof in a cool house and kept perfectly dry. Here they remain until the breaks commence to swell at the base.—Y. A.

An experience with *Disa grandiflora*.—Occasionally this plant is met with growing in the most luxuriant manner possible, and this without any attention being bestowed upon it by the grower. My experience, if not very great, at least has been of an experimental nature, with more failures than successes; in fact, after many trials, I am only now on the right track. Position or some other local conditions has been given before now as the reason why this plant should succeed in such few places, a statement I am inclined to think is right. My plant I have had for five years, and it has been carried out of one house into another, and also stood in different parts of the structures until it was placed in its present position. This is by the door on the east side of a cool greenhouse, where Heaths and such like plants are grown. It is now within measurable distance of quickly covering the surface of an 8-inch pot with healthy growths, a strong flower-stem also pushing up. The foliage is sprinkled overhead two or three times a day, the pot being well drained. The rooting material consists of peat, fibrous loam and Moss. The above detailed experience may lead others to shift their plant or plants about until they find a suitable place in which to leave this, one of the most beautiful Orchids in existence.—H. A. S.

***Cattleya Mossiae Reineckiana*.** — The Messrs. Low and Co. staged some fine forms of the typical plant at the Temple show recently, amongst them being an excellent form of the above-named variety, having broad sepals and petals of the purest white, the lip also being pure white, beautifully undulated and frilled at the margin, stained in the centre with a richer purple than usual. The throat and sides of the lip were of a rich orange-yellow. It was a very fine form. Another

variety called *Arnoldiana* appeared to be a very inferior form of *Reineckiana*, especially when seen in the same collection.—H.

SHORT NOTES.—ORCHIDS.

Odontoglossum vexillarium Princess May. —This has large flowers of a pure white, flushed with pink in the upper part, and stained with a blotch of yellow under the column. The flowers, too, are of good substance, which tends to prolong the life of these chaste and graceful flowers.—W. H. G.

Sobralia macrantha Kienastiana.—I had often heard of this variety, but had never seen it

Epidendrum vitellinum majus.—As has before been pointed out in the pages of *THE GARDEN* by Mr. Douglas, the best way to succeed with this plant is to grow it in the cool house with *Odontoglossums* and *Masdevallias*. Acting upon the advice so given, my plants were removed from the *Cattleya* house into the structure above described, and the plants at once benefited by the change. During the winter they are kept dry, but when they commence to grow the rooting material must be kept moist, the plants also being sprinkled overhead on all fine days.—A. Young.

Cochlioda Noezliana was well shown in Sir Trevor Lawrence's group at the Temple show. It was introduced three years ago by M. Linden, of

think, by Mr. Sander and called by him *G. Measuresianum*. The other variety was less deeply spotted.—W. H. G.

Cypripedium Evenor, shown by Messrs. Lewis, of Southgate, at the Temple recently, appears to be a beautiful and distinct hybrid raised between *C. Argus* and *C. bellatulum*, the flowers having a pale buff-yellow ground, speckled all over with dark dots. It does not show much of the *C. bellatulum* character, and had I ventured a guess at its parents, one I should have without any hesitation stated was *C. concolor*, its colour and its markings evidently pointing to that species.—H. G.

Odontoglossum vexillarium Leopoldi.—This is one of the grandest that has yet appeared, if it is not the very finest. It is as much superior to the grand variety *superbum* as that plant is to the typical one. It only wants size to make it perfect, but as the plant shown was young and small, it will doubtless produce larger flowers as it gains strength. The ground colour of the bloom is of a light soft rose, having a large blotch of very dark velvety maroon in the centre, and in front of this a zone of pure white.—W. G.

Lælia tenebrosa.—This fine plant was shown in great beauty at the Temple last week. I am pleased to find that my name, which was first published in *THE GARDEN* as a varietal one, is still retained. The plant staged by Mr. White, gardener to Sir Trevor Lawrence, appeared to be the finest form of the species, having broad, rich bronzy sepals and petals and a large lip, stained at the base with deep blackish maroon. It is a grand and noble plant, and will become a fine companion to *L. purpurata*, which it much resembles in growth.—G.

Masdevallia Gairiana, as grown by Baron Schröder, is one of the most fascinating plants of the genus. It is one of Mr. Seden's hybrids raised between *M. Veitchiana* and the yellow-flowered *M. Davisi*, which never gained the popularity it deserved because its flowers are small. In this cross we have flowers very little smaller than those of *M. Veitchi*, the prevalent colour resembling that of *M. Davisi*, over which are irregularly scattered a few deep crimson papillæ. It is a very handsome variety, apparently a free grower, whilst the number of flowers upon the specimen shows that it is very free-flowering.—W.

STOVE AND GREENHOUSE.

HYDRANGEAS IN POTS.

THESE are well known as excellent pot plants, being largely grown by the florists for decorative purposes, but, beyond the trade circle of growers, their culture is not sufficiently taken up by any means. Like many other plants which are cultivated *en masse* by the large market growers, chiefly in houses and pits specially devoted to them, these *Hydrangeas* are brought to a high state of perfection. This fact, however, should not deter others who may not be possessed of such ample and congenial methods of cultivation from taking up their culture. They cannot in any sense be deemed difficult plants to manage, whilst they have many very strong points in their favour. For some gardens they would undoubtedly be great acquisitions if their culture was extended. For instance, in small ones, where it is of the utmost desirability to make the very most of the room under glass at all times, the *Hydrangeas* will serve a good turn during the summer season without any forcing at all. In such a case the plants could be kept out of doors entirely or in a protected place if there is room, the chief object being to well protect the roots by plunging the pots deeply above their rims in coal ashes or cocoa fibre so as to guard against



Hydrangea hortensis.

before it was staged in the very fine collection of Baron Schröder at the Temple Gardens. It has large pure white flowers, rendering it exquisitely beautiful, and it should induce Orchid growers to extend the culture of these very ornamental plants.—G.

Cattleya Sanderiana, one of the gigas varieties, was noteworthy in Baron Schröder's group at the Temple show. It was at once remarkable for its early blooming as well as for the vast quantity of flowers it carried, thus showing that *Cattleyas* are more easily affected by bright sunny weather than they are by artificial heat and the absence of the sun. This is usually seen in flower in the month of July. The blooms on the plant shown were perfectly developed, of good size and richly coloured.—G.

Brussels, and shortly afterwards by Messrs. Charlesworth. It has somewhat a pendent habit, the colour of the flowers being rich cinnabar. It comes from the cool regions of Ecuador and thrives well with the *Odontoglossums*, but it has not yet been long enough in our gardens to show it at its best.—G.

Grammatophyllum Fenzlianum.—This plant, in two varieties, one having the flowers much lighter than the other, was finely shown by Mr. Duncan, gardener to Mr. C. J. Lucas. The spikes were nearly 5 feet long, the sepals and petals light yellow, one variety being heavily blotched and spotted with dark chocolate. This is the form introduced some few years ago, I

injury from severe frost. In larger gardens they serve an admirable purpose (or purposes) for forcing into flower from March onwards for conservatory and house decoration as well as for filling up later in the year without any forcing when flowering plants are not always so plentiful. The *Hydrangeas* have one essential point in their favour, that being the persistence with which they retain their fresh appearance, in spite of the immense heads of so-called blossoms that they bring to such perfection under good attention. For the amateur and the cottager they are essentially first rate plants, giving a good return in a brilliant display without any artificial culture under glass.

To arrive at the best state of culture, different means have to be adopted with at least three varieties, so as to have them presentable as grown by those who supply them in large numbers for the market. These variations will be noted further on under notes on each kind. Collectively, the *Hydrangeas* may be considered as gross feeders, taking manurial stimulants freely, with rich soil in which to grow them, save in the case of the variegated kinds. Water they will absorb almost like a semi-aquatic, dryness at the root being, on the other hand, simply ruinous to them. Loam is the staple product in which to grow them. Various kinds of this will produce the difference in colour that is to be seen in *H. hortensis*. The beautiful blue shade of this variety, as seen at times in its trusses, is produced where there is more or less of iron in the soil, the presence of this mineral having an undoubted influence in this direction. When growing in a peaty soil the same results have at times followed to a greater or less degree. With good loam should also be used some leaf soil, and another ingredient in the form of manure, cow manure, for instance, or horse droppings being good additions. Where there has not been any ironstone in the soil I have heard (but never proved its efficacy) that iron filings have been added to produce the blue shade. In the absence of animal manures an artificial compound should be used to a moderate extent. Instead of having recourse to pots of large size it is far better to pot firmly and well, paying all necessary attention afterwards to the water supply. Road-scrappings will supply the place of silver sand; not much of this latter is ever used by the market growers. As soon as the flower-trusses appear, a more liberal course of treatment even than before is needful to develop extra fine heads, a moist atmosphere being also a powerful accessory towards this end. When forced a high temperature is never desirable; about what will suit pot *Roses* will at the same time suit the *Hydrangeas*, whilst all the light possible is desirable, the plants being kept as near to the glass as can be.

The three best flowering varieties for pot culture are the following from practical observations made in their respective cases, another being appended to the trio as a very promising kind:—

H. HORTENSIS, which for general purposes and easy culture is still one of the best as well as the (or, at least, one of the) hardiest. For small plants to flower the first season, the shoots of this variety should be taken as cuttings when the growth for the season has about ceased and the hardening of the tissues commenced, or, in other words, half ripened wood. This will usually be about August, although they may be taken later, as I once proved to my own satisfaction. Upon taking a position as foreman under a good gardener at the end of September, regret was expressed that no *Hydrangea* cuttings had been put in. This was, however, done the first week in October, the cuttings being in-

serted singly in 3-inch pots and plunged in a gentle bottom-heat, the leaves dropping as a matter of course soon afterwards. The steady warmth persisted in for about two months, and then the young plants were stood upon shelves near the glass in a greenhouse, the wood and the terminal buds plump, but with hardly any roots. These were not forced, but allowed to come on in the greenhouse steadily, flowering then even in good time, and that most satisfactorily, with large heads upon them. A shift was given after growth had commenced in the spring. This mode of culture was the only one open under the circumstances. The better plan would have been that of striking earlier, thereby securing more roots by the autumn, then giving one shift before growth commenced either by forcing or otherwise in the spring; in this latter case also the plants could have been wintered in a cold frame with safety. The plants alluded to produced the first season the usual pink flowers, and the second those of the lovely shade of blue that makes them so attractive. No special method was adopted to produce this result; probably it was a different loam with the ironstone in it that was the cause. As soon as this variety has passed out of flower the plants should be kept dry for a little time, and then be cut hard back nearly to the soil and then be re-started so as to make another growth by the autumn. Two or four shoots will thus be the result with another shift onwards in the spring to carry the plants through the flowering. A course similar to *Pelargoniums* (show and fancy kinds) is thus adopted, save the reducing in the autumn.

H. THOMAS HOGG, which belongs to the *hortensis* section of the family, was first introduced to the United States from Japan and thence to Europe. It is one of the most profuse blooming of any, its flowers being of the purest white and of firm texture. Only this present spring this was pronounced by a large country florist to be the best of all for pot purposes to bloom by Easter, when white flowers are so largely in demand. Being at the same time such a durable subject, it was found to be largely sought after for church decorations. When it is in flower it is the most compact of all, considerably dwarfer than any other. In its case there is another distinct system of culture pursued with the best of success as compared with that alluded to in the other instances. In the treatment of *Hydrangea Thomas Hogg*, it has been found that the best results have been arrived at by retaining the wood of the past season's growth, this being secured by keeping the plants going until the autumn without any check. Before being brought into warmth for forcing, only the weakly wood is thinned out, the other shoots being tied around so as to produce several back growths. Each of these lateral shoots will flower almost to a certainty, making the plants a dense mass of bloom. With this variety the potting should be done after the flowering season is over.

H. PANICULATA GRANDIFLORA, an entirely distinct species from Japan, is now acknowledged as one of the best of all hardy shrubs for forcing; its treatment, however, is quite distinct from the foregoing *H. hortensis*. In this case the plants should be at least two years old before anything is attempted with them in pots, but then they will do service for two seasons with care. The cuttings should be struck in a cold frame during the latter part of the summer, as in the case of bedding *Calceolarias* in the open soil, that being a sandy one. Here they should remain until the spring, when they may be transferred to the open in nursery rows about the same distance apart as would be given to *Strawberries*. Here they should remain for two seasons' growth, being potted up the second autumn, by which time good plants should have been secured. At the end of the first season outside, when the leaves have fallen, the plants should be pruned hard down to the soil to secure a good base the second year. When potted up a semi-pruning should be given them, the final being proceeded with later on as in the case of pot *Roses* before forcing is commenced. Hard pruning should be the rule, for the basal

buds will give the best results later on with immense panicles of flower.

Here are given three most useful flowering plants, to succeed with each of which a distinct course of treatment is needful under pot culture, to say nothing of outside methods, to attain to the best results.

The other variety afore alluded to is

H. STELLATA PROLIFERA.—A variety of the good old *hortensis*, but with its trusses of bloom of a deeper shade of colour, at first greenish yellow and afterwards a bright rosy pink. The writer has not grown this variety, but having only recently seen it in admirable condition it is strongly recommended. The culture accorded to *H. hortensis* is presumably what it requires; this at any rate was the mode adopted with the plants in question. The variegated form of *H. hortensis* makes a beautiful dwarf plant for pot culture; as compared with it, however, a little more warmth with less moisture is desirable to develop the variegation. Poorer soil also should be used, otherwise there is a tendency to revert to the normal character. Small plants of this kind are preferable to larger ones. SOUTHRON.

Hoya Paxtoni.—As a basket plant or for growing in a suspended pot in the stove, this *Hoya* is one of the most beautiful subjects that we possess, and one in which close inspection reveals greater charms. It may be sometimes seen grown in a pot and secured to a stick in order to ensure an erect bushy style of growth, but in this way it rarely flourishes, and by far the better plan is to suspend it as above stated. It is naturally an epiphyte; therefore, a light open compost must be used for the roots, and a moist atmosphere is necessary to its well doing. The shoots, which hang down for some distance, are clothed with small deep green leaves, while the flowers, which are borne in umbels at the points of the shoots, are white, shaped like a five-pointed star, and about an inch in diameter. The raised centre of the flower is red, which in its setting of white is particularly pleasing. As with all the other members of the genus, the flowers are of a thick wax-like texture. A second kind very much like *H. Paxtoni* is *H. bella*, but it is of closer growth and not so well adapted for hanging baskets. Still, it may be grown into neat little specimens in small pots, especially if there is a piece of Tree Fern stem or some such a medium for the roots to attach themselves to.—H. P.

Cupania filicifolia.—This when well grown makes a fine table plant. It is seldom seen, however, probably on account of its slowness of propagation. When it grows too tall or has lost some of its lower foliage, it can be cut down. In fact, my plants are continually being made young, as should they by the autumn be too tall for my purpose, they are cut down to within 2 inches or 3 inches of the pot. A plant cut down in the winter has now two nice shoots; one of these will be taken off with a heel for a cutting, and the other allowed to grow to form the plant. It is of easy culture, requiring to be grown in a well-drained pot, the soil being equal parts of peat and loam with sand and crushed charcoal.—A. Y.

Blandfordia nobilis.—Though the blooms of this are not nearly so large, nor the aspect of the whole plant so stately as those of some of the others, such as *B. Cunninghami* and *B. flammula*, they are yet pretty and possess some distinct features. A prominent one is that it is usually the first of the genus to unfold its blossoms, and on that account it is especially noticeable, for *Blandfordia* flowers are totally unlike those of any other occupant of our greenhouses, while it also blooms more freely than the rest. The roots, too, of this species differ from those of the sorts above-mentioned, for in their case they are few, thick and fleshy; whereas in *B. nobilis* they are more of a fibrous nature, and produced in greater numbers. In *B. Cunninghami* and *B. flammula*

great care is needed in repotting that the roots are not bruised in any way, as a slight damage will often lead to a considerable amount of decay. *B. nobilis*, however, possesses more recuperative power and soon becomes again established after repotting. Owing to the formation of the roots it is risky work to divide established plants of most *Blandfordias*, but with care no difficulty will present itself in the case of *B. nobilis*. This last-named is the oldest member of the genus, having been introduced quite early in the present century. Its leaves are also much more Grass-like and more numerous than those of the others above-mentioned. An ordinary greenhouse will suit these *Blandfordias* well, their principal requirements being thorough drainage, a compost consisting of equal parts of peat and loam with a liberal amount of sand, and an ample supply of water during the growing season. All the members of the genus are natives of Australia.—H. P.

PROPAGATING SHOW AND REGAL PELARGONIUMS.

If Mr. A. Young is correct in his assertion that it is wrong to propagate these from the mature wood, one cannot help wondering that the London market growers and some of our leading trade growers should so long have followed this system of increase. The grandly-grown little specimens that are at the present season brought into Covent Garden are mainly propagated in this way. Propagating from young growing shoots is to a certain extent practised, but mostly as a means of getting up a stock of some particular kind. I was lately looking through a market garden where these Pelargoniums are remarkably well grown, and saw some pots of cuttings that were just beginning to root. I inquired of the grower if this was a favourite method with him, and was told that it was practised to a very limited extent, one objection being that there was a greater liability to damping. Many thousands of finely-grown plants were either blooming or coming into bloom, and I am certain that for the size of pots they were in it would be impossible to get them better. I never saw finer specimens in the course of twenty years in Covent Garden, and yet they were nearly all propagated from the ripened wood. Cuttings put in in June and July will become well established in 2½-inch pots by the end of the autumn, and will be ready for shifting into 4½-inch or 5-inch pots early in January.

For market and ordinary decoration these make large enough plants. For very early blooming I have never increased Pelargoniums in any other way than this, and could always get nice compact-habited specimens. If larger plants are desired, it is easy to have them by cutting back hard after blooming. For very early flowering, say in April and early in May, spring propagation may have advantages, as the plants can get their final repotting in time to allow the pots to get filled with roots by autumn. In this condition they bear forcing much better. J. C. B.

Gloxinia Brilliant.—This interesting bi-generic hybrid is quite a break away from the usual type of Gloxinia. It is a cross between *G. Radiance* and *Gesnera pyramidalis* raised by Messrs. J. Veitch and Sons. The result of hybridising the two plants is decidedly happy, the hybrid being of compact and vigorous habit, the leaves very large comparatively, broad, deep green, with mottling of a lighter shade. It is exceptionally free, and the flowers, brilliant self carmine and produced on a rather short, sturdy stem, have quite the expression of those of the *Gesnera*. The whole aspect of the plant is one of extreme vigour, and it should prove not only useful in gardens, but the forerunner of a new and useful race.

Oxalises under glass.—Only a few days before reading the note on these in a recent issue of THE GARDEN I was admiring some pots of *floribunda* which were completely smothered with

bloom. These Oxalises are very effective, last long in bloom and are very easily grown. In a gentle warmth they can be brought into flower early in spring, and they remain for several months in good condition. If liberally fed and well watered, it is remarkable the amount of flowers plants in 4½-inch pots will produce.—J. C. B.

Canna Mme. Crozy.—The note on *Cannas* (p. 416) was interesting, and at this season opportune. The above variety is, I consider, one of the best yet sent out, the flowers of a large size and of a beautiful shade of colour—scarlet edged with old gold, and one of the best to last in bloom. The *Canna* being one of the easiest plants to grow should make it an especial favourite. Some may object to the blooms when cut falling quickly, but if grown near the glass and with plenty of air, there is more substance in the flowers and less dropping. *Cannas* may be had in bloom nearly all the year round when grown specially for the purpose. For the cool house or conservatory they are most serviceable.—G. WYTHES.

Ficus elastica variegata.—Your note on the above useful plant appears at an opportune time, as one certainly does not get a good impression of it as generally seen in gardens. I find it one of the most useful plants for house decoration, and as regards its growth it is quite equal to the type. Although there is no reference in the note in question (p. 416) as to the kind of house the plants are grown in at Edmonton, I presume it is in a fairly warm structure. My plants succeed admirably in a fairly warm structure with abundance of light, but shaded from strong sun. I know some people look upon the *Ficus* as a difficult subject to propagate, but this is not so. When my first plant became shabby it was headed down, the top portion being rooted and the stump placed on a shelf in a light plant stove. Side shoots were not long in appearing, and when these had three or four leaves they were taken off close to the stem and inserted in 3-inch pots, the soil being sandy. These when placed in a propagating case soon formed roots. Cuttings inserted in the autumn and kept in the small pots until the turn of the day are now handsome plants in 6-inch pots, and will soon be fit for using for decoration.—A. YOUNG.

Greenhouse Rhododendrons.—This type of *Rhododendron*, represented by such kinds as *Lord Wolseley* and *Taylori*, are usually grown in pots, but they have never become so popular as one could wish, although seldom out of bloom. In the temperate house at Kew they are planted out in the border, where *R. Dalhousianum*, *Acacias*, and New Holland plants of many kinds are quite at home. *R. Taylori* in particular is a mass of flowers, the colour brilliant carmine, producing a distinct effect at this season of the year. Every shoot is crowned with an umbel of flowers. Those of *Lord Wolseley* are buff-red, but there is a long list of varieties to choose from, the colours varying from white through delicate shades of pink to clear orange. When planted out they are more pleasing even than in pots, and those who have large conservatories to furnish should use them for this purpose.

Climbing Clerodendrons.—*Clerodendron Balfouri* is the most generally grown of the climbing members of the genus, and is, in fact, one of the most useful plants we possess for training to the roof or rafters of the stove; while it may also be grown in various other ways. When enveloping a balloon-shaped trellis, it both grows and flowers freely, and is very popular where large specimen plants are grown for exhibition. In this way it is, however, I think, lacking in the beauty that characterises it when treated as a rafter plant in the stove or intermediate house, that is, if the shoots are not tied in too closely, but allowed to dispose themselves in a natural and informal manner. It will, as a rule, produce such a great number of blossoms that for some considerable time at this season of the year a thriving specimen will be an object of great beauty. The general appearance of this *Clerodendron* is so well known, that it will suffice to note the marked contrast between the

pure white inflated calyx and the bright crimson flower which protrudes therefrom. *C. splendens* is a very beautiful species, but is not nearly so common as the preceding. In this the flowers are scarlet. This is not at all easy to propagate from cuttings, which difficulty may, however, be readily overcome by grafting it on to *C. Balfouri*. A union is quickly effected, and if grafted close to the ground, it will be covered in subsequent repotting, and as the stock does not push up suckers, none of the common objections to grafting will apply in this case. Still, it can be struck from cuttings, though not nearly so readily as the others. Between these two—*C. Balfouri* and *C. splendens*—a hybrid has been raised that is very generally cultivated. This is *C. speciosum*, which is much in the way of *C. Balfouri*, except that the inflated calyxes are of a reddish tint, while the flowers are deep rose. It is very distinct and floriferous, but the marked contrast between the colour of the calyx and corolla, which is so prominent in *C. Balfouri*, is wanting in this.—H. P.

FLOWERING CACTI.

AMONG the showiest of flowering plants at this season of the year a place must be found for some of the *Phyllocactuses*, whose large and bright-coloured blossoms are totally distinct from anything else in bloom. The demand for the best forms of flowering Cacti appears to be on the increase, and it is very probable that before many years they will become very popular. A great point in their favour is their simple cultural requirements, as, given an ordinary greenhouse, they are as easily cultivated as a *Geranium*. Their freedom from insect pests, too, is a desirable feature. An open, sunny position must be chosen for these Cacti, as upon their thorough ripening a good deal of the future display of bloom depends. The various forms claiming parentage from *Cereus speciosissimus* are among the showiest of all, notably such kinds as *J. T. Peacock*, raised by the gentleman whose name it bears, and distributed when that famous collection of succulents was offered for sale at Mr. Peacock's death—about four years ago.—*C. M. Hovey* is another good variety, which was awarded a first-class certificate by our Royal Horticultural Society in 1882. In both the colour of the flower is indescribable, being a blending of vermilion, dazzling purple and violet, while it appears to be of as many different tints as the standpoints from which it is viewed. *Phyllocactus delicatus*, one of Messrs. Veitch's seedlings, was figured in Vol. XXXVI. of THE GARDEN. The flowers of this are rose-coloured, quite distinct from those of the two above mentioned, while a free-flowering and beautiful kind is *Phyllocactus crenatus*, with cream-coloured flowers. Most of our larger nurserymen keep a few of the best varieties in stock, and with a greater demand, no doubt others would take up their culture. These Cacti and their allies will flower more or less during several months of the year, for even in the depth of winter the *Epiphyllums* are very bright and cheerful. They, however, require a stove, or at least an intermediate house temperature to flower them at that season, and the same remarks apply to the pretty *Epiphyllum Makoyanum*, whose beauty at Kew was noted a few weeks since in THE GARDEN. I saw the specimen referred to when at its best, and it formed indeed a charming object. The flowers of this, which are borne in the greatest profusion, are of an orange-scarlet colour. H. P.

MARKET GARDEN NOTES.

CAPE HEATHS.—Several varieties of *Erica ventricosa* are now being brought into Covent Garden Market. The plants are very well grown, although I always think that market growers do not in a general way bring this class of Heath to such perfection as they do the winter blooming kinds. There is one thing I have often remarked in these *ventricosa* varieties, i.e., that they are rather pale

in colour. It would appear that market growers are not acquainted with the method which some experienced exhibitors practise. This consists in putting the plants in the open air just as the blooms begin to open. In fine weather they may remain exposed until the blooms are well expanded, but arrangements are made to allow of taking them in and out according to the weather. With this exposure, the flowers of *ventricosa*, *grandiflora* and *superba* take on a rich tint, that they cannot in any other way acquire. The difference in colour between exposed plants and those that have remained under cover is most striking. When, as is the case in the majority of market gardens where Cape Heaths are cultivated, the plants are bloomed in span-roofed houses it is not of course practicable to give them this exposure, but if kept in frames during their blooming season, it would be easy to put a rich colour into the blooms. Light and abundant ventilation do not suffice; there must be complete exposure, especially to the night air should the weather allow of so doing. *E. Spenceriana* is another kind that shows the same defect in colour. At its best it is not very bright in colour, but being of free growth, very free-flowering, and of compact habit, it finds favour as a market kind. If given a certain amount of exposure, the colour of the flowers is heightened considerably. The yellow-flowered *Cavendishi*, one of the finest market Heaths, does not appear to be affected in the same manner, and in the case of white kinds, their purity would probably be in some degree impaired. Two favourite Heaths in Covent Garden are *perspicua nana* and *ventricosa coccinea minor*. The latter is remarkably attractive, forming charming little compact specimens, which under the best culture are smothered with bloom.

HYDRANGÆA PANICULATA GRANDIFLORA.—Very finely grown specimens of this are now brought to market in spring. Plants in 6-inch pots carrying several highly developed flower-heads find purchasers at fair prices. The ordinary *Hydrangeas*, with the enormous flower-heads that characterise the small plants grown for Covent Garden, are too formal for many, but they are wonderfully effective, and illustrate as well as any plant can do the value of the regular and judicious application of stimulants at certain periods of growth. To bring *H. paniculata* to a high degree of excellence in pots of small dimensions, very liberal feeding indeed must be resorted to from the time the roots touch the sides of the pots, and the supply of moisture must be well maintained in a hot time. In the London market gardens *Hydrangeas* are rarely grown on stages, but on earth beds, as it is then much easier to keep the roots equably moist.

STRAWBERRIES.—The outdoor crop is quite a month earlier than last year, and the long period of hot sunshine has brought in the fruit from forced plants very rapidly. Naturally, the quality of house fruit has been very good, hot sun giving colour and flavour; but if very parching weather prevails all through the swelling period, the berries are apt to be somewhat smaller. Periods of bright sun with dull intervals I find conduce to weight of crop. The Strawberry dislikes being hurried either naturally or artificially, and with a daily temperature of from 80° to 100° the berries have not time to swell to their full capacity. There were few days with me for a term of six weeks that the thermometer registered less than 90° at midday, and frequently it marked 10° more. Not infrequently at 4 p.m. I had 80° of warmth with full air on top and front. The worst of this very hot weather is that it causes a rather too glutted state of the market. In a time of brisk sale this does not so much matter, for the Strawberry is a fine weather fruit, but when, as is the case this year, trade is depressed, more fruit comes in than can be got rid of at remunerative rates. The Strawberry being so perishable, unsold samples of to-day suffer a deterioration of 50 per cent. or more by to-morrow. It is the fruit that remains unsold that sometimes brings the grower's average returns down to a low point.

J. C. B.

TREES AND SHRUBS.

RHODODENDRONS AT DARLEY DALE.

THE best and hardiest named *Rhododendrons*, which I have proved, are the following. There may be other good kinds, but I have never seen better than those I here name:—

Crimson.

Atro-rubrum	Barclayanum
Blandyanum	Broughtoni
Concessum	Cynthia
Earl of Shannon	Geranioides
Hendersoni	John Waterer
Jubar	Lady E. Cathcart
Lord Derby	Lord Palmerston
Michael Waterer	Mrs. J. Smith
Mrs. J. Waterer	Princess of Wales
Queen Bertha	Sir Robert Peel
Brayanum	John Gair
Scipio	Lilian
Crautum	

Scarlet.

Atrosanguineum	Grand Arab
Faulkneri	Bouquet de Flore
Fleur de Marie	John Penn
Eximium	Lady Armstrong
Lady Easthope	Lord Cluyston
Lady Emily Peel	Mammoth
Magnificum	Mrs. R. S. Holford
Mrs. Fitzgerald	Quadron
Stella	Towardi
Sydney Herbert	Vesuvius
The Warrior	Jacksoni
Alarm	

Lilac.

Everestianum	Leopardi
Fastuosum plenum	Old Port
Princess May	Albertus

White.

Blanche Superb	Chionoides
Mrs. Standish	Mrs. Jno. Clutton
Coriaceum	Delicatissimum
Minnie	The Queen
The Bride	Perfection (Mason's)
Sultana	Papilionaceum
Caucasicum album	Princess Alice
Eugenie	

Purple or very dark ones.

Sir J. Whitworth	Rosalie
Blattum	Nero
Ne Plus Ultra	Copernicum

There are many sorts left out. Some of them have poor blooms or do not stand the winter here very well; others have neither form nor comeliness that we should desire them. The best we have just now are the select hybrids; they are really splendid; some equal the named sorts for large trusses and fine form of flower. We have had some nice showers lately, the most rain there has been since the beginning of March; everything looks fresh and green.

C. REEVES.

Conifer planting.—I am glad you are attacking the indiscriminate planting of conifers. To my mind our English landscape is becoming most seriously injured by them. I have for years observed this more and more. I think that the extensive planting even of Larches has done much to disfigure the English country-sides, where these trees are naturally out of place. For instance, the slopes of our beautiful Wiltshire Downs are utterly ruined in many places by square, dense plantations of Larch, which is at home in rugged, broken hill-country, but utterly incongruous and intrusive on the quiet curves of our turf. The thing has been quite a trouble to me.—GEORGE H. ENGLEHEART.

Hydrangea paniculata grandiflora.—Although introduced nearly twenty years back, this distinct and valuable species does not now even command that attention which its merits deserve as a late summer or autumnal hardy flowering plant. In any garden it would commend itself, whether planted in beds by itself or as a fore-

ground to evergreen shrubs with dark green foliage. With such a background to it, the beautiful white trusses of flower are seen to better advantage, the relief afforded being exactly suited to it. This *Hydrangea* should if possible have a moist place, whilst early every spring it should be hard pruned back, after the manner of dwarf Hybrid Perpetual Roses. In this way it is kept in bounds, the result in flowering being also much more satisfactory than under the let-alone treatment.—H.

Weigelas in a mass.—By far the most effective manner of planting this spring-flowering subject is in a mass. We have the varieties *rosea* and *amabilis* growing together in bank-like form on a long sloping border, backed up by a common Laurel hedge. The deep green of the latter contrasts well with the rosy pink of the *Weigelas*. Both sorts are this year flowering at the same time, which is somewhat unusual. The way to get an abundant crop of blossom is to encourage the plants to throw out vigorous shoots annually; instead of cutting them back, allow them to remain their full length, and if ripened thoroughly the growths will be studded with bloom right up to their tips.—E. M.

Golden Heather.—The intensely hot weather and long continued sunshine that we have experienced this spring have caused the foliage of most golden-leaved subjects to be of a much richer hue than is usually the case, and among them is the golden-leaved *Heather*, which is just now, where it has not suffered from the drought, an object of great beauty by reason of its richly tinted foliage. There are two distinct forms, both of which are very beautiful, one, *aurea*, being of a rich golden tint, while the other, *cuprea*, is a kind of bronzy orange. Where a collection of the various hardy *Heaths* is brought together, these golden-leaved forms of the *Heather* must not be overlooked.—T.

The Fire Bush (*Embothrium coccineum*).—Every year our west-country friends send such beautiful flowering sprays of this South American shrub that it makes one long for their delightful climate, for we have really nothing among shrubs hardy in the London district that for brilliancy of colouring can compare with this. In South Devon, Cornwall, and many parts of Ireland it is just at home, and it will thrive near the sea coast. Though in general appearance very unlike its allies, this *Embothrium* belongs to the order *Proteaceæ*, the various members of which were at one time far more popular in gardens than they are at the present day. Though well known, the *Embothrium* cannot be regarded as a common plant. Good specimens are by no means cheap, and at the same time are not easily obtained at nurseries. Complaints have before now been made that it is a very difficult subject to strike from cuttings, but such is by no means my experience, for I succeeded much better with this than with many of its allies, such as *Banksias*, *Proteas*, *Dryandras* and *Hakeas*. I was asked to strike some strong shoots from a plant in the open ground, but, as anticipated, the results were not satisfactory. Then a specimen in a pot was kept under glass, and the weakened shoots there produced struck root without difficulty. They were taken off when half ripened and inserted firmly into well drained pots of very sandy peat, and placed in a close case in a warm greenhouse (in fact treated exactly as greenhouse *Rhododendrons*), with the result that in three months or a little more they were well rooted.—H. P.

St. Dabeoc's Heath (*Menziesia polifolia*).—Happily, the Irish *Heath* in its several forms is not very particular as to soil, and there is little, therefore, to prevent its being planted in a bold, free way either associated with rock plants or in groups with other choice shrubs. In a bed of *Heaths* that have flowers more or less almost through the year this is now the chief feature, and it lasts in beauty many weeks, as the blooms open in steady succession. The bells are much larger than those of any other hardy *Heath*, and a group in flower is decidedly showy. In addition to the type with its rich purple-red flowers, there are at least three dis-

tinct varieties in the group. Perhaps the best of all is that with pure white flowers, whilst another has flowers almost white with a suspicion of pink, deepening into rosy purple at the mouth of the flower.

SHORT NOTES—TREES AND SHRUBS.

A good variegated shrub is *Cornus Spathi*. Its yellow and green variegated leaves are bright in colour, distinct and attractive. It is quite one of the best shrubs of its kind to plant judiciously in the garden.

Ceanothus divaricatus is one of the best of this genus for covering tall walls. We have it in full flower at the present time on a wall fully 30 feet high. When in good health it makes shoots 6 feet long in one season. —E., *Hants.*

Aralia Maximowiczii.—This shrub, that one should see more of in gardens, attains in its Japanese home a considerable height. The leaves are deeply lobed, of a fine green colour, and subtropical in aspect. A mass of it in the garden might be formed on the outskirts of the lawn.

Spiræa confusa.—I grow this *Spiræa* in the greenhouse, never giving it more heat than is afforded in such a structure. It flowers in the early part of April, which shows how easy it is to get it into bloom out of its normal season. Out of doors it opens its blossoms from the middle of May onwards. —E. M.

Cercis siliquastrum (the Judas Tree).—I never saw the branches of this so thickly covered with the brightly coloured flowers as during the past month of April. The peculiar manner in which the flowers push out of the apparently hard bark of the old branches is very strange, yet it is a fact that most of the blossoms are from this part of the tree. —E.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY.

MAY 25.

Orchid Committee.

COMPARED with last year's exhibition there were not so many awards made on the present occasion, but the following may all be considered as acquisitions in their several families.

First-class certificates were awarded to

CELOGYNE DAYANA, of which a singularly unique specimen was exhibited, being at the same time a remarkably fine example of cultural skill, this being the second year successively in which this plant has been produced in such fine condition. It bore no less than twenty-four spikes, many of which were nearly 3 feet in length; compared with the unusual length of the spikes the individual flowers are small, the sepals and petals are narrow, and of a yellowish white shade, whilst the lip is chocolate with beautiful bars and markings. This species is rightly named the Necklace Orchid, and is an exceedingly choice plant. From Baron Schroeder's collection at The Dell, Egham.

CATTLEYA HYBRIDA WILLIAM MURRAY (C. Mendeli × C. Lawrenceana).—A handsome hybrid, the plant a small one with very short bulbs and leaves as compared with those of its parents. The colour of the flower is that of C. Lawrenceana somewhat intensified, the lip partaking of the same parent in form, but of a rich velvety crimson-purple shade; the sepals and petals are as in C. Mendeli, being much broader than in its other parent. When this hybrid gains more vigour it should produce even finer flowers. From Mr. Norman S. Cookson, Wylam-on-Tyne.

Awards of merit were adjudged to

MILTONIA VEXILLARIA PRINCESS MAY, in which the distinguishing characteristic lies in the lip, which has an intensely dark maroon blotch of triangular shape, relieved by a margin of white, beyond which the colour was, as in the sepals and

petals, a pale fleshy pink—a very fine variety undoubtedly. From Messrs. Sander and Co., St. Albans.

ODONTOGLOSSUM WATTIANUM (Hurdy's var.), which one might suspect without being very wide of the mark to be a natural hybrid between O. luteo-purpureum and O. Harryanum. Compared with the latter shown near to it, there was a marked resemblance both in the general contour and the colouring, the lip being smaller, dark chocolate and pale yellow the prevailing colours; the strongest spike bore fifteen flowers. From Messrs. Sander and Co.

LÆLIA PURPURATA NOBILIS.—A richly coloured form in which the lip is extra large and broader than usual, the sepals and petals having a rosy purple shading to a marked degree, a very fine variety of this popular Orchid. From Messrs. Sander and Co.

LÆLIA PURPURATA ATRO-PURPUREA.—The contrast of the intensely deep coloured lip of this with the pure white sepals and petals was very marked, the flowers at the same time being of extra size. From Mr. J. Cypher, Cheltenham.

LÆLIA PURPURATA NIOBE.—Another very fine variety, with deep rosy purple lip and pale rosy purple sepals and petals, the flowers well proportioned. From Mr. J. Cypher.

CATTLEYA WARNERI FORMOSA.—A richly coloured variety of this fine species, the individual flowers of extra size also. From Messrs. Charlesworth, Shuttleworth and Co., Bradford.

CYPRIPEDIUM VOLONTANUM GIGANTEUM, which, although it bore but one flower, gives promise of being a grand form, the flower and growth both possessing vigour in a marked degree, the colouring being also more intensified. From Messrs. Hugh Low and Co.

A botanical certificate was awarded to—

EPIDENDRUM CLÆSIANUM, with pale orange-coloured flowers, larger than those of E. radicans, but of the same section of the genus. From Mr. C. J. Lucas, Warnham Court, Horsham.

Floral Committee.

First-class certificates were awarded to

PRIMULA REIDI, a lovely white species, quite a gem in its class. The foliage is somewhat after P. Sieboldi, but smaller; the flower-spikes are slender, but erect; the form of the flowers is bell-shaped, neither reflexing nor recurving, being three-quarters of an inch in diameter. The specimen exhibited had been grown in a moist, cool spot out of doors, proving it to be quite hardy. From Mr. G. F. Wilson, Heatherbank, Weybridge.

ALOCASIA SANDESIANA NOBILIS.—A fine and well-marked Aroid, with broad marginal bands of a clear silvery colour along the nerves and outer edges of the leaves, the other parts dark olive-green, the sagittate edges hardly so conspicuous as in the species, whilst the faint purplish tinges here and there are the result of injury by exposure rather than real, not being perceptible in the matured leaves. From Messrs. Sander and Co.

ANTHURIUM CRYSTALLINUM FOLIIS VARIEGATIS, in which the variegation is irregular, in some cases half the leaf being of a creamy white colour, whilst the other part is of a dark olive green with intermediate shadings or marblings, just as in the case of *Alocasia macrorrhiza* variegata. This should prove an acquisition if constant. From Messrs. Pitcher and Manda, Swanley, Kent.

ASPLENIUM MARGINATUM.—One of the most distinct new Ferns seen for a long time. It bids fair to be a plant of noble growth, showing, although still young, great vigour and distinctiveness. The colour is a pale yellowish green, the fronds being entire and about 3½ inches wide at the base and more than 6 inches in length, after the manner of, but much larger in every way than those of A. lucidum. From Mr. H. B. May, Dyson's Lane, Upper Edmonton.

Awards of merit were adjudged to the following exhibits:—

HEMEROCALLIS APRICOT, partaking of the character of H. flava, but of considerably darker

colour, the shade of which is denoted by its name. It is a self-coloured variety, possessing more vigour than the species alluded to. From Mr. Yeld, Clifton Cottage, York.

ANTHURIUM PARISIENSE, a new addition to the Scherzerianum group with a pale flesh-coloured spathe, and the spadix some shades darker and of medium size, quite distinct in colour. From Sir Trevor Lawrence's collection.

RHODODENDRON ARIEL.—Another very fine addition to the javanico-jasminiflorum race of hybrids, having rich, clear primrose-coloured flowers fully 3 inches across and of a wax-like substance, the trusses of good size. From Messrs. J. Veitch and Sons.

CINERARIA MARITIMA AUREA VARIEGATA.—A prettily variegated form of this well-known old bedding plant, the rich golden colour and the silvery green blending together very well. If we are not greatly mistaken, this form was exhibited (or one much like it) some years back; whether it be the same we can scarcely say from memory. From both Mr. H. B. May and Messrs. Sander and Co.

CROTON THOMSONI.—A showy variety of robust growth, with traces of the tri-lobate form, the ground colour a rich deep golden shade, with bars of bright green. From Messrs. Laing and Sons.

DRACÆNA LORD WOLSELEY.—A very promising new variety of as vigorous growth as D. amabilis, but possessing the colours of the old D. terminalis. From Messrs. B. S. Williams and Son.

AMARYLLIS LORD ROBERTS.—One of the reticulated forms, very handsome and distinct, the ground colour white with a clearly marked star extending through the petals, the venations being of a purplish crimson shade. From Messrs. B. S. Williams and Son.

VALLOTA PURPUREA DELICATA.—A very pale flesh self-coloured variety of this well-known old plant, quite distinct in colour and very pleasing. From Messrs. R. Veitch and Sons, Exeter.

CARNATION MRS. SEYMOUR BOUVERIE.—A most promising variety with extra large full flowers, in colour a pale shade of apricot with the edges of the petals of a rosy pink; it would no doubt be classed with the yellow ground class; the growth is very free. From Mr. Martin Smith's collection at The Warren, Beckenham.

CARNATION THE CHURCHWARDEN.—This is without doubt a true Malmaison with bright reddish scarlet flowers, very large and full, with a delicious perfume and true Malmaison growth. As compared with this new variety, the one called Mme. A. Warocque is simply worthless, being rarely seen in good condition. From Mr. Martin Smith.

GLOXINIA NETTED QUEEN, which is quite an acquisition and very distinct. The growth is most vigorous and the flowers large with first-rate substance, being supported upon stout foot-stalks; the markings are quite like net-work and well defined. The net-like markings around the throat and towards the edges are pearl-white upon a rosy purple ground. This should prove the forerunner of a distinct section. From Messrs. Sutton and Sons, Reading.

BEGONIA BARON SCHROEDER.—A decidedly distinct and free-flowering variety with rich orange-scarlet flowers, very full, and with reflexed petals, the habit of the plant excellent. From Messrs. Laing and Sons.

BEGONIA MRS. REGNART.—A rich yellow with the guard petals paler, the flowers very full and of globular shape. Stood among other good kinds, this variety was very prominent. From Messrs. Laing and Sons.

BEGONIA LORD BROOKE.—An extra large dark scarlet, very full and of wax-like substance; a fine variety. From Messrs. Laing and Sons.

BEGONIA LADY BROOKE.—A pale salmon-pink (a distinct colour), with flowers of fine form, the plant of good habit. From Messrs. Laing and Sons.

BEGONIA LORD LLANGATTOCK.—A splendid variety, with flowers of extra size, each measuring 5 inches across, in colour a deep crimson-scarlet, very full, the growth sturdy. From Messrs. H. Cannell and Sons.

BEGONIA BEXLEY GEM.—A rose-coloured variety of much promise, very double, extra large, and of good form. From Mr. T. S. Ware.

BEGONIA ELEGANS, which has fringed flowers of medium size, very full, with a white centre, the rest of the petals of a salmon-pink, distinct and good. From Mr. T. S. Ware.

CALADIUM IBIS ROUGE, with foliage of a deep rose colour, veined and netted with carmine, an extra fine new variety. From Messrs. J. Laing and Sons.

CALADIUM MRS. HARRY VEITCH.—A robust variety, the colour a pinkish red on a white ground, with the midrib and veins of a bright crimson. From Messrs. J. Laing and Sons.

ROSE (SINGLE) CARMINE PILLAR.—A rich carmine colour, very free-flowering. The blooms are as large as those of *R. rugosa*. From Messrs. Paul and Son.

ROSE (SWEET BRIER) AMY ROBSART.—A deep rosy pink variety, very distinct amongst several kinds shown with it. From Messrs. Keynes, Williams, and Co., Salisbury.

DAVALLIA FIJIENSIS ELEGANS, which is well defined by its sub-specific name of *elegans*, being a truly elegant form of this fine Fern, with light looking fronds. From Messrs. W. and J. Birkenhead, Manchester.

ATHYRIUM FILIX-FEMINA SETIGERUM.—A beautifully crested form of the Lady Fern, pale in colour and of elegant growth. From Messrs. Birkenhead.

NOTHOCLÉNA MOLLIS.—Quite a dwarf, but very beautiful form of Cheilanthes-like growth, with a silvery reverse to the fronds. From Messrs. Birkenhead.

DELPHINIUM JOHN THORPE.—A noble looking variety, with deep rich blue flowers and well-defined pure white centres thereto. From Messrs. Kelway and Son, Langport.

POLYANTHUS QUEEN VICTORIA.—Said to be an old variety re-introduced. It is a vigorous grower, with large laced flowers, which are disposed to be semi-double. From Messrs. Cocker and Son, Aberdeen.

OBITUARY.

MR. SAMUEL BARLOW, J.P.

THIS well-known Lancashire florist died at his residence, Stakehill House, Castleton, Manchester, on the 28th ult., at the age of 68 years. Some five weeks ago Mr. Barlow accidentally fell down the stairs of his warehouse in Manchester, breaking his arm and receiving a severe shock to the system, from which he never recovered. At the time of his death he was mayor of the neighbouring borough of Middleton and an alderman of the Lancashire County Council, besides filling other public offices. He was the president of the National Tulip, the Auricula, Carnation, and Pink Societies of the north, and a vice-president of the Manchester Botanical and Horticultural, and of the National Chrysanthemum Societies.

The whole lifetime of Mr. Barlow was associated with the garden. Born at Medlock Vale in 1825, the son of a clever Lancashire botanist, who was a contemporary of Horsfield, he became a cultivator of flowers at seven years of age. Going to work at the bleaching factory when quite young, he devoted his evenings to study, and so prepared himself for the high position he afterwards attained in the commercial world. He then had collections of Primroses, Polyanthus, Pansies, choice annuals, &c., and when only twelve years of age he entered upon his career as a Gooseberry grower by planting a selection of twenty-four choice prize varieties. Two years later he had a collection of Pansies far in advance of anything which had been seen in the neighbourhood. Leaving Medlock Vale in 1839, the family removed to Salford, where Mr. Barlow was deprived of the advantage of a garden until he went to Stakehill to reside in 1847, his father having become manager of the bleaching works there. Eventually Samuel Barlow

became the manager and in 1861 a proprietor of the works, which for a long time have been carried on in the name of Samuel Barlow and Co.

At Stakehill he was able to resume the culture of flowers, but year after year doing so under increasing difficulties, owing to the rapid growth of factories and chemical works. The task Mr. Barlow set himself was to show how to reconcile high culture with the requirements of manufacturing industry, and it is only those who know the Stakehill gardens who can understand something of the difficulties he had to encounter and conquer, for in this district the atmosphere is so fully charged with elements hostile to vegetable life, that the surrounding country is almost bare of trees, which have died in large numbers. By bringing science and observation to bear upon his gardening, Mr. Barlow succeeded in clothing the ground with trees and shrubs which defy to some extent the injurious exhalations from chemical works, and he created a floral paradise amid a forest of chimney-shafts. Here he grew a remarkable collection of florists' Tulips, Carnations and Pico-tees, Pinks, Pansies, Chrysanthemums, herbaceous and alpine plants, Roses, &c., and his garden was always open to the inspection of anyone interested in flowers. Mr. Barlow will be sorely missed by a large circle of Lancashire florists and gardening friends. He was one of the most generous and kindly of men, doing good in many unrecorded ways, and much sympathy is felt for his widow and his adopted daughter in their great bereavement.

PUBLIC GARDENS.

The Inner Temple Gardens.—By permission of the treasurer and benchers, the Inner Temple Gardens will be opened to the public from Thursday next until the end of August, between the hours of 6 and 9 o'clock in the evening. This privilege is intended more especially for the benefit of the young children inhabiting the surrounding poor neighbourhoods.

A new public park at St. Helens.—An addition to the means of enjoyment and recreation provided for the people has been secured by the liberality of Mr. Samuel Taylor, who has presented to the inhabitants of St. Helens a park enclosing an area of some forty-five acres. The total value of the donation is estimated to amount to not less than £7000 or £8000. The mayor, on behalf of his fellow townsmen, formally accepted the gift and presented an address of thanks to the generous donor, who in a few well chosen words expressed the satisfaction he felt in being able to be of service to the town.

Royal Horticultural Society.—The next meeting of the Royal Horticultural Society will take place in the Drill Hall, James Street, Victoria Street, Westminster, on Tuesday, June 6. Besides the usual display of flowers, plants, fruits, &c., the members of the London Pansy and Violet Society will compete for prizes offered in the schedule. At 3 o'clock, Sir John Llewelyn, Bart., will lecture on "Hardy Rhododendrons and Azaleas." There was no doubt as to the Temple show being a great success from an exhibition point of view, and it is an agreeable task to be able to record the fact that it was also a financial success. The receipts exceeded those of any previous years.

The weather in West Herts.—The rainfall of the spring now ended has been exceedingly light, rain falling on but seventeen days, and to the total depth of only $1\frac{1}{2}$ inches, or nearly 5 inches less than the average for the same three months in the previous thirty-seven years. During the same thirty-seven years there has occurred in this neighbourhood no other instance of any consecutive three months, in any part of the year, being as dry. The past week was the nineteenth un-

seasonably warm week that we have had in succession. Tuesday night proved very cold, the thermometer exposed on the lawn indicating 5° of frost. Even freshly planted Dahlias, however, escaped injury from this frost. At 1 foot and also at 2 feet deep the temperature of the ground now (Wednesday) stands at 59°. On the same day last year the readings were respectively 63° and 58°. I cut my first Tea Rose from the open ground on Monday and the first Hybrid Perpetual on Wednesday. The Tea Rose came into bloom seventeen days earlier than its average date of flowering in the previous seven years, and the Hybrid Perpetual exactly three weeks earlier than the average. Both dates are the earliest that have yet been recorded here.—E. M., *Berkhamsted*.

Mr. A. D. Webster.—Owing to the death of Lord Derby, we learn that Mr. A. D. Webster, so well known to our readers, has been engaged as wood manager to the Duke of Bedford on his Woburn and other estates.

Oncidium spatulatum.—What treatment do you advise in order to induce this to bloom? I have fine growths well ripened. The plant looks in perfect health, and is now after a long rest beginning to grow again, but for the third year in succession there is no sign of bloom. I have grown it in the intermediate house. Is this right? What treatment do you recommend?—H. MILLINGTON.

Pansy Bella Duncan.—I herewith enclose sample blooms of my new Pansy Bella Duncan. It is turning out a perfect gem. These are from plants that have been in bloom for a month continuously. It is very free flowering, robust and dwarf (6 inches to 8 inches).—M. CUTHBERTSON.

The Water Chestnut.—Can you give me any information as to the treatment and best time of year to start the Horn Nut from California? I have had one given to me, supposed to grow in a glass similar to a Hyacinth in slight heat.—AN OLD SUBSCRIBER.

* * We suppose you mean the Water Chestnut (*Trapa natans*).—ED.

Names of plants.—*G. Bennett.*—1, *Dennstedtia adiantoides*; 2, *Asplenium erectum*; 3, *Litobrochia denticulata*; 4, *Asplenium Hemionitis*; 5, *Davallia pentaphylla*; 6, *Lustrea hispida*.—*Bon Card.*—Cannot name from leaves only; the white Clematis had fallen on its arrival; you should send it to growers of these plants.—*Clanton.*—Yellow form of *Lilium canadense*.—*W. M.*—*Alonsoa incisifolia*.—*C. M.*—*Viburnum plicatum*.—*Wexford.*—*Escallonia rubra* Ingrami.—*T. E. F.*—*Cytisus Adami*.—*F. Doods.*—Please send better specimens.—*M. Milne.*—*Lælia Schilleriana*.

"The Garden" Monthly Parts.—This journal is published in neatly bound Monthly Parts. In this form the coloured plates are best preserved, and it is most suitable for reference previous to the issue of the half-yearly volumes. Price 1s. 6d., post free, 1s. 9d. Complete set of volumes of THE GARDEN from its commencement to end of 1892, forty-two vols., paper, cloth, £30 12s.

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All of our readers who are interested in the improvement of cottage homes are invited to help us to make Cottage Gardening known. It is published at the very lowest price to meet the wants of those for whom it is intended, and copies will be sent for distribution, free, by the publishers, Messrs. Cassell and Company, La Belle Sauvage, Ludgate Hill, E.C.

No. 1125. SATURDAY, June 10, 1893. Vol. XLIII.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—Shakespeare.

ROSE GARDEN.

TEA-SCENTED ROSES.

THE exceeding value of this grand section is more than ever exemplified by their behaviour during the present spring. While the large number and variety of Hybrid Perpetuals are scarcely showing a bloom, many of the Teas and Noisettes are already in full flower. The idea as to these sections being more tender than the Hybrid Perpetuals is now quite exploded; in fact, when grown as dwarfs I believe them considerably the hardier of the two. Even as standards their vitality is greater than that of the Hybrid Perpetual class taken generally. With such a vast number of varieties it is, of course, easy to choose a few from each section which would seem to refute this idea; but speaking of the two sections in the bulk, I believe the Teas to be the hardier. Teas and Noisettes commence to grow earlier than the others, and also keep on later in the season. Under these circumstances they naturally get more frequently nipped, both by spring and autumn frosts, than the Hybrid Perpetuals. This has given rise to the impression that they are tender. Hybrid Perpetuals not only break later, but they ripen earlier as well, and are often fit to dig for transplanting and potting by the end of September, a time when the Teas and Noisettes are invariably in full growth. On April 17 I cut the first bunch of Roses from the open. This is almost a record. The plants were in a sheltered position on a south-west wall and under the eaves of an old house. Since that date the Teas on walls and fences have continued to yield a fair and increasing supply of useful blooms. True, the Chinas are equally early, but they do not possess the same weight and quality nor one tithe of the variety to be found among the Teas and Noisettes. Throughout the whole season this section yields an almost uninterrupted supply of flowers; almost before one crop is realised another is in the bud ready to expand, and while no blooms are upon the plants, the young foliage, when clean and free from mildew, is in itself a charming and satisfying feature. We cannot do without the Hybrid Perpetuals, but we could far less do without the Teas and Noisettes. In the former class we alone find those deep scarlet, velvety crimson, and maroon shades, many of which have a most deliciously cool and sweet fragrance peculiarly their own. But a Hybrid Perpetual, with very few exceptions, will not yield one fourth of the bloom produced by a Tea or Noisette. A further point in favour of the classes now under notice is their freedom from red rust. Although grown side by side and under exactly the same treatment, Hybrid Perpetuals are often entirely denuded of their leaves and bloom while the Teas are in full growth and flower. This disease—red rust—is very puzzling and mysterious. One season it is not at all troublesome; another, and as far as we can judge almost parallel year throughout, we find it so disastrous, as to practically ruin all chances of a second crop of bloom from the Hybrid Perpetuals. Another strange peculiarity is its attacking the so-called Hybrid

Teas, i.e., the results of a cross between a Tea and Hybrid Perpetual—Lady Mary Fitzwilliam, for example. It affects these almost, if not quite as much as it does the true Hybrid Perpetuals.

Of late years there has been a good deal of colour introduced into the Teas. While under the impression that deep coloured Teas considerably detract from the charms of a collection, it is certainly pleasing to see a good prospect of ultimately securing a race of deep red Roses having the useful traits of the Teas and Noisettes, blooming so freely and continuously, with an absolute exemption from red rust.

Nor do we find the great benefits of Teas and Noisettes in the open alone. Under glass they are equally as far in advance of the Hybrid Perpetuals for general usefulness and the production of cut flowers. Indeed, many of our finest Teas and Noisettes are seldom seen to much advantage unless under cool greenhouse culture. Take the grandest of yellow Roses, *Maréchal Niel*, for example. How very seldom do we see this in perfection when growing in the open air. *La Boule d'Or*, *Etoile de Lyon*, and others of similarly double and globular form are also made much more serviceable with a little glass protection. Not on account of tenderness in any way, but because they are so intensely double, that unless we are favoured with such a hot and dry summer as that of 1887 only a small number of these extra double varieties are able to open into perfect blooms. A slight shower or even a heavy dew is quite sufficient to ruin the flower at any point after the bud begins to expand.

Some Teas vary somewhat in colour when grown under glass to what the same variety presents under open-air culture. If forced in any way or slightly over-shaded, we lose the most charming part of their colours, viz., the freshness and depth of bronzy salmon and yellow found in the centre of many varieties when grown in full sunshine and assisted by the cooling influence of night air. Other varieties, *Homère* and *Marie van Houtte* for example, lose the charming rosy tints found on the outside of their petals when grown out of doors, very seldom having these tints under glass. Early in the summer and late in the autumn are the two seasons when Tea-scented and Noisette Roses bring their most useful points more prominently before us. As climbers or pillar Roses they are grand, while for supplying a choice variety of button-holes no other flower, except Orchids, can be compared to them. Far greater improvements have been made in this than in any other section of Roses. A most convincing proof of this lies in the fact of the classes for them at Rose exhibitions being almost annually increased. Looking back a few years, we find two classes only, eighteen singles and twelve singles. Now, the same shows have classes for twenty-four and eighteen trebles, besides many minor classes. The National Rose Society also holds a Tea and Noisette show annually, and at the last metropolitan show, held at the Crystal Palace, there were quite as many blooms of Teas and Noisettes staged as of the Hybrid Perpetuals. Doubtless this is caused by the greater number of good flowers a Tea will produce compared to a Hybrid Perpetual, and this is another point in their favour. We all like to grow and see a good flower, and if quantity can be had combined with quality, so much the better. With a little care in selection this most desirable end is easily secured.

It matters very little what soil the Teas are grown in, they being equally at home in a dry

sandy soil and in almost a stiff clay. The only difference I would make would be to have them worked upon the seedling Brier for light soils, and the cutting Brier, or short hedge Brier, for stiff, clayey soils. It must also be borne in mind that a Rose worked on the seedling Brier and transplanted, necessarily has its roots damaged and cut sufficiently to rob them of much of their seedling and deep-rooting character. In fact, a transplanted seedling differs but little from a struck or cutting Brier stock. Therefore I would prick out the young seedlings where they are to remain and work the Roses upon them, so doing away with the necessity of transplanting at a stage when the roots should really be at a considerable depth in the soil. Depth of root in a light loam is a considerable advantage, especially during such a season as the present. In a stiff and naturally colder soil the roots will do much better nearer the surface, and as cutting Briers have a greater tendency to root in this direction, plants worked upon this stock are the most suitable. I am also very much in favour of the shorter growing Teas, especially if they possess a drooping tendency like *Niphetos*, *Souvenir d'un Ami*, *Mme. Bravy*, and others being cultivated upon the hedge Brier. When these are about 1 foot to 2 feet high Roses do upon them remarkably well, and they are kept just sufficiently off the ground to be clear of dirt during rainy or stormy weather. It is most disappointing to have a fine crop of bloom quite spoilt by what, in every other connection, would be a most welcome thunderstorm. The quality and weight of the blooms will not suffer from the Roses being grown on the short hedge Brier; indeed I have gathered many of my finest blooms from plants worked upon this stock.

Brier is by no means the only stock suitable for Tea and Noisette Roses. The *Polyantha* is coming much into favour. *Dundee Rambler* and other strong growers may also be struck and used as stocks. The *De la Grefferaie* is much in favour with me for *Gloire de Dijon*, *William Allen Richardson*, and *Maréchal Niel*. For such strong growers I find it swell more freely to the Rose growth than the Brier. In all cases when planting these and similar varieties under glass I have found them do better on the *De la Grefferaie* stock and to be considerably less subject to canker. I will close these notes by giving a dozen of the best and most useful Teas for general purposes, followed by six of the best climbers. *Anna Ollivier*, *Catherine Mermet*, *Ernest Metz*, *Francisca Kruger*, *Edith Gifford*, *Innocente Pirola*, *Mme. Hoste*, *Marie van Houtte*, *The Bride*, *Souvenir de S. A. Prince*, *Souvenir d'un Ami*, and *Mme. Falcot*. Climbers.—*Maréchal Niel*, *l'Idéal*, *William Allen Richardson*, *Gloire de Dijon*, *Climbing Perle des Jardins*, and *Celine Forestier*. RIDGEWOOD.

The *Austrian Copper Brier* is among our earliest Roses, and certainly one of the most showy. It invariably flowers well with me, and is a great favourite with ladies. Although rather fleeting, it is much sought after in a cut state on account of its charming and unique shade of metallic-orange and rosy copper shadings. By no means difficult to grow, thriving well wherever Roses are a success, it is strange we do not meet with it more frequently. *Harrisoni*, a semi-double of the Persian Briers, is also nicely in bloom, and a few standards are just now very showy.—R.

Rose Mme. Alfred Carriere.—This very fine Rose has, I fear, been overlooked among the hosts that come and go. I do not know its origin, and whether very old or new. In no English Rose catalogue, or in any of the best French lists is it to be found, but it appears

in Mr. W. Paul's "Rose Garden," and is there spoken of as "a fine climbing Rose." The bush we have is not on a wall, but by its vigour one can see it would soon climb. In this season of early Roses Mme. Carrière has been the most profuse of all, only excepting Lamarque. As a bush it is large and handsome, with a profusion of glossy leafage. The buds are long and pretty in form, of a delicate flesh-white shading to salmon, suffused with pink. When fully open, though somewhat loose and flat, the flowers make a fine display, as they have very large broad petals and measure quite 4 inches across. They are very sweet-scented. The buds are borne singly on long, slender, and almost thornless wood.—A. H.

OWN-ROOT ROSES.

Up to the last two seasons I have not been much in favour of cultivating Roses upon their own roots, and I still think that some stock, so long as it is a suitable one for the soil and the variety of Rose to be cultivated, is far better and more likely to give satisfaction. Many grand Roses would be practically useless unless they had the additional help of a stronger foster parent. Duchess of Bedford, Louis van Houtte, Horace Vernet, and others are all too weak in themselves to thrive satisfactorily upon their own roots. Some Roses do much better on one stock than on another; similarly some lend themselves to own-root culture where others fail. It is unreasonable to expect all to do alike when we bear in mind what a vast number of varieties is now cultivated, their different characteristics and requirements, to mention nothing of the variation in the soil. But the object of these few notes was not a discussion upon the merits or demerits of own-root Roses. My aim was to call the attention of readers to the fact that the present is the best time of all the year for increasing the stock of such varieties as thrive well in this form. Here I would like to mention that almost all Teas and Noisettes, also the extra strong-growing Hybrid Perpetuals and Bourbons, will do fairly well upon their own roots. In the open, unless it be upon a warm wall, suitable wood for propagating is not found so early in the season. Plants under glass, however, are now carrying a grand lot of wood eminently suited for cuttings. By the time a flower has matured the wood beneath it is about half ripened. When this has advanced a little further towards maturity, short lengths taken off with a heel or cut off just below a leaf will root readily if treated as advised.

Prepare a few 5-inch pots, filling them with a compost of half leaf soil and the remainder made up with sharp sand and loam. No manure of any kind should be used. Insert the cuttings firmly and stand in a box on the greenhouse or vinery floor. Let them be thoroughly watered at first, then kept close and partially shaded from direct sun. Choose a box 15 inches to 18 inches in depth, then lay a square or two of glass over it. Or the box may be partially filled with the same compost and the cuttings inserted in this. I prefer pots, because superfluous moisture is not so injurious. When trimming the cuttings do not remove any of the leaves, or at any rate only slightly reduce them. If at any time the cuttings get dry or show signs of drooping, sprinkle them over freely and close up again immediately. It is fatal to allow them to flag. In about two months they will be rooted, and may be gradually inured to the air by removing the glass at night for a few times previous to taking it off altogether. Now pot them off into $4\frac{1}{2}$ -inch pots, using the same compost, taking care that it is of the same temperature. Stand back into the box again and keep them close for a few days, after which they may be treated and grown as ordinary Roses. Such plants may be grown on in pots, or they may be turned out into the open border during the autumn or spring. I advise the latter, as the plants will then have the benefit of a full summer's growth to establish themselves before winter.

It is almost useless to attempt growing weak varieties like Comtesse de Nadaillac, Ma Cap-

cine, &c., upon their own roots. The Roses most suited for this method of cultivation are those resembling Mme. Lambard, Marie van Houtte and Anna Ollivier in habit of growth. Although the strong climbers will thrive fairly well in this form, they are very seldom so satisfactory as when grown upon some vigorous stock. One of the greatest advantages derived from own-root Roses is the fact that all growth emanates from the Rose proper, and there are no doubts in the amateur's mind as to which is Rose or stock. All stocks are liable to produce a few suckers occasionally, and although to an experienced eye there is no difficulty in recognising them, many amateurs are oftentimes in doubt, and sometimes make the unfortunate error of cultivating the stock with great care, needless to say much to the detriment of the Rose itself. This is the sole benefit I see in own-root culture: When worked upon suitable dwarf stocks, many Roses will push off upon their own roots if planted as deeply as they ought to be, viz., about 3 inches above the union of Rose and stock. This is a decided gain, but the plant cannot do without the nourishment supplied by the stock for a long time, and in the majority of cases never. RIDGEWOOD.

Turner's Crimson Rambler Rose.—Permit me to add my testimony to that of others (page 434) as to the unique beauty and most substantial merits of this fine new Rose. I have had the pleasure of seeing it at Slough, Earl's Court, &c., and look upon it as a most valuable addition to the rather limited class of everybody's Roses that are destined to lighten up thousands and tens of thousands of gardens and landscapes with their brilliant beauty in the near future; for no true rosarian having once seen this lovely rambler can rest content until he possesses it in quantity.—D.

Old Roses at the Temple show.—It is a great and decisive step forward to present these (as noted p. 453) in bold masses and there is something like a return to true Catholic taste in treating with equal distinction our oldest favourites and newest Sweet Briers. The York and Lancaster strains, Persian Yellows, Austrian Briers, Moss, Scotch, Damask, Maiden's Blush and other Roses never had a more brilliant, as assuredly they never had an earlier, innings than this year. The Austrian Briers especially have revelled in the drought, the bronze tints glowing with deeper colours. Harrisoni, too, has almost hidden its leaves with its crowded crops of gold.—F.

Rose l'Idéal and the dry early spring.—I have been looking out for this beautiful Rose to equal in vigour and luxuriance such free doers as Fortune's Yellow or Wm. Allen Richardson if ever it were likely to do so. So far what I have seen of it during the drought has been disappointing. Exquisitely chaste and beautiful, it is but a moderate grower. Marie van Houtte has run three weeks ahead of the calendar, but has kept its form and colour good in spite of the drought.—D. T. F.

Lamarque Rose.—I am glad to note that "A. H." Sussex (p. 432), has among Roses in May a good word for Lamarque on a wall. It has been an exceptionally good time for this useful old Rose; but, take it as an all-round Rose, it is generally among the most valuable and useful. It should of course be grown on its own roots, and then, though it may be cut severely at times in early spring or late autumn-tide, it springs up again and grows and blooms as freely as ever. If planted on a rather poor and dry border, it is also much hardier and stands the cold better. This Rose is a standing protest against the theory of acclimatisation. It has enriched our gardens for many years, and is not an atom hardier than the first day it enriched our gardens with its beauty and fragrance. By the way, it almost seems that some Roses, notably the Cloth of Gold, have grown more tender instead of hardier as the years have rolled over them. How else shall we account for the virtual disappearance of the Cloth of Gold?

This ought to have been a spring that would suit it. Has any reader of THE GARDEN good tidings to tell of the Cloth of Gold this season?—CALEDONICUS.

A more free-blooming Rose than Gloire de Dijon.—"A. H." is mostly so careful and correct in his notes on Roses, that one hesitates to correct him. But really I cannot follow him when he says in regard to Emilie Dupuy in particular and other nameless members of the Dijon family (p. 435), that "there are several of the Dijon race more free blooming than the original parent, and not in any degree inferior to it, while some would declare them superior," &c. And this written on the heels of the drought, through which the Gloire de Dijon has been more glorious than usual. Why, any Rose of the Dijon family or any other that was more free blooming than the original parent would be no improvement, but the reverse. And how could "A. H." pack them on, admitting, which I do not, that more flowers were desirable? Why almost every inch of wood has had its flower. How could more be heaped on to the wood or branches of Gloire de Dijon?—D. T. F.

ROSES AND PEACHES IN THE SAME HOUSE.

As an old hand alike at dual and single culture of Peaches and Roses, I read "I. M. H.'s" contribution (p. 434) with care. It has not, however, in any way altered the opinion, forced on me by many years' experience, that these choicest of flowers and most luscious of fruits do best apart. To do Roses under glass to most profitable purpose, the cultivator should have complete control over the plants at all seasons. That consideration alone is fatal to the wisdom of running the two plants abreast from choice in the same house. We all know that that and many other combinations are possible, and the majority of us have had to crowd all conceivable, and not a few inconceivable things into the same house. But that is not the point, but rather whether or not it is desirable and profitable to do so, and in determining that question, it is not fair to assume that the Peach houses are to be unused unless when growing or ripening Peaches. As a fact, glass houses are seldom wholly empty, and not a few use their Peach houses early or late in the season for Roses in pots who would hesitate to plant a crop of Roses permanently out in them.

Roses, Chrysanthemums, Pelargoniums, Begonias, Arums, Salvias and other plants in pots may do little harm to Peach trees and fetter but slightly the liberty of growers; but permanent crops of Roses in the same house are widely different things, and predispose to mildew and fly among the Peaches; whereas the trees return the compliment by unduly predisposing the Roses to thrips and red spider. These are obvious objections to such combinations lying on the immediate surface of the two crops; but in addition to these, there are great temptations to sacrifice the one crop for the sake of the other at different seasons of the year.

And where is the benefit? "I. M. H." will hardly contend that more and better Roses or Peaches, or more of both, can be got from the combination houses than from houses of equal areas equally well and carefully furnished with Peaches and Roses separately. Then where is the advantage of combining them? A well-managed rosery under full control under glass will yield Roses almost all the year round. Peach trees, however fruitful, will yield but one crop a year. True, a few Roses, such as Maréchal Niel, may do little more or better. That may help furnish a logical argument in favour of a further separation of Roses under glass; assuredly none for running Roses and Peaches abreast in the same house under such fixed conditions that they cannot be separated. CALEDONICUS.

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AN OLD TERRACE WALK AT
BERKELEY.

THE venerable and rock-like Berkeley, like most other fine old houses and castles, is not without its lessons to the student of garden design. This rough terrace walk, rising out of the situation, so to say, is garlanded, both walls and borders, with many pretty plants, and has not a trace of the formality which we complain of in the newer gardens made by people who have no sympathy with plants, and care more about their little frivolous designs than for beautiful things.

Nemesia strumosa Suttoni.—This is a valuable annual for growing in pots, and blooming at this season under glass. The plants from Messrs. Sutton and Sons, of Reading, at the Temple show were of note for their brilliant flowers, the prevailing colour orange, but as the season lengthens,

miration and total ignorance of what this new wall screen so unique and pure might be, and discovered all at once it was *Crataegus Pyracantha*, whose coral berries are so well known and greatly admired, but whose flowers were perhaps never seen in such high perfection before.—D. T. F.

CHRYSANTHEMUMS.

SEASONABLE CULTURAL NOTES.

PRESUMING that the bulk of the plants have by this time been placed in their flowering pots, they will need careful attention as regards watering until the roots have finally taken hold of the new soil. I note that there is a tendency in many collections to paleness of the foliage, which, although not absolutely detrimental to the welfare of the plants, is not pleasant to look upon. In nine cases out of ten pale col-

This treatment cannot fail to produce unsatisfactory results, as such water must chill the roots, especially when they are limited in quantity and tender as well. Even where water is plentiful and good, pale-coloured plants are to be found. The reason for this is an excess of moisture at the roots before they can assimilate such a quantity. The remedy is to withhold water entirely from the roots until the leaves actually flag from want of moisture. In the meantime syringe the foliage at least three times during the day with tepid water. This treatment refreshes the plants, enabling them to make satisfactory progress at the roots and induces a better tone of colour in the leaves.

In the case of plants cultivated to give large blooms, the shoots resulting from the formation of a bud at the point of the leader during last month are making rapid progress, needing attention now in securing the three shoots to prevent their being broken by various causes. Many of them are sending out surplus shoots, not only on the branches selected, but from the



An old terrace walk at Berkeley.

greater diversity exists. Those from seed sown now in the open will bloom in the summer, and quite a variety of shades will be obtained, rose, crimson, and many bright and showy tones. To get the plants in bloom at this season, the seed must be sown in heat in February, and the seedlings potted on in the usual way. The *Nemesia* is certainly one of the most showy things that has been introduced of recent years.

Three old useful climbers.—I should like to add my testimony to the usefulness of those mentioned by "H. J. C.," Grimston, page 433, but especially to the extreme fragrance and value of the *Lonicera*. In these days of glitter and glare this and the other favourites named by your correspondent, the *Clematis montana*, and the scarlet trumpet Honeysuckle are too apt to be overlooked. All three have been much in evidence in different towns this year, flowering with unique earliness and profusion through the drought. The white *Lonicera* is charming in bouquets, a few blooms even giving a sweetness more refined than either Gardenias, Violets, or Lilies of the Valley. Another beautiful white climber startled me for a moment in a large town of East Anglia the other day. It covered a huge gable end of a lofty house with a dense screen of white from base to summit. I crossed the street and stood musing in mute ad-

oured leaves are the result of mismanagement in some form or other. It may be that the soil in its natural state is unsuited for providing that amount of chlorophyll necessary to the maintenance of perfect leaf colour. In that case the composition of the soil should be altered to meet the exigencies of the case. Where plants are much exposed to cold easterly winds at night following upon hot, sunny days during the early part of May, when on account of want of frame space the plants are forced to stand out of doors, this treatment will account for the gradual change in colouring of the leaves. The remedy in such cases is to provide temporary shelter until a change to more genial weather takes place. Another source of paleness in the foliage, and probably this is the most common of all, especially during such seasons as the present, is the water. In many gardens there is not sufficient provision made for softening or airing water coming direct from wells and water companies' pipes before giving it to the plants. During such a long continuance of drought as experienced this year in most districts, cultivators have been compelled to use the water direct to the plants.

main stem. In all cases the plants ought to be promptly relieved of this extra strain to concentrate the whole energy of the plant into the selected growths which are eventually to produce the blooms, one on each shoot. Plants grown in bush form should now be set in their summer quarters, where they will receive all available sunlight and not be crowded in any way. The same remarks apply to specimen-trained plants of all forms. If success is to crown the efforts of the cultivator, the plants must have light, air and room for development, so that the growth will mature as it progresses.

I have never seen the plants growing against walls in so promising a condition as at the present time. Abundance of moisture at the root and an occasional washing of the foliage have induced a sturdy and vigorous growth. Where the shoots have been kept fastened to the wall, the plants appear to be in just that condition to give satisfactory results later on. The main branches already show signs of making their first natural break. Limit the number of shoots to the space at command and not to any fixed number, but avoid overcrowding, as this tends to weaken the leaves and shoots and ren-

ders the plants so much more liable to injury from frost in the autumn.

Insect pests are very troublesome, I find, owing to the long spell of hot, dry weather. Black fly is the worst enemy to deal with. Dusting with tobacco powder will in most cases rid the plants of this pest; in stubborn cases, however, recourse must be had to dipping the points in a strong solution of tobacco water. A leaf-mining maggot, similar to that attacking Celery, will very soon be troublesome. I have never known a season when the plants were free from it. As a rule, at the middle of June it puts in its appearance, and quickly disfigures the plants if allowed uninterrupted progress. It is the leaves up the main stem that are first attacked; the maggot secretes itself under the skin of the leaves, quickly destroying the tissues and giving a serious check to the plants. Hand-picking persistently followed is the only efficacious remedy I know; either squeeze the part of the leaf where the maggot is seen or pick it out with a point of a knife. Another pest that Chrysanthemum cultivators are often troubled with is mildew; this is perhaps the worst of all to deal with, and nearly always worst during dry weather. Although sulphur will destroy the germs when it comes into contact with the fungus, I prefer to prevent the pest getting a foothold upon the leaves by constantly using a small quantity of a mixture found most efficacious, and made by boiling for twenty minutes 2 lbs. of sulphur and 2 lbs. of lime, which has not been slaked, in ten quarts of water. The regular dose for syringing on the plants for the destruction of mildew is two wineglassfuls of the mixture to four gallons of clean cold water. As a preventive, use half the mixture in the same quantity of water. It is useless to syringe the plants on the upper surface of the leaves only; every part should be thoroughly wetted. If the plants are thoroughly syringed with the mixture weekly, choosing the evening for the work, that will be sufficient to keep them free of mildew. If dry sulphur is employed, that of a brown colour is best, as it is the least objectionable. E. MOLYNEUX.

NEW CONTINENTAL CHRYSANTHEMUMS OF 1893.

MR. H. SHOESMITH'S interesting and instructive article entitled "Chrysanthemum Raisers," which appeared in THE GARDEN a few weeks ago (p. 307), is a gentle rebuke to writers in the horticultural press who hastily make statements without first ascertaining or verifying the accuracy of them. So far as the article goes, it is a convincing argument that the French growers up to the present are a long way from being played out. Perhaps, with people who assert this, the wish is father to the thought; but they must remember that, although we do not now wholly rely upon Continental growers for our new varieties because raisers of other nationalities have arisen who have sent out large numbers of meritorious new seedlings, yet it does not follow that the percentage of good Continental seedlings is very materially lessened, and still much less that our Gallic neighbours have exhausted their resources. That there has been increased competition both here and in the United States of America these past few years is beyond dispute, but it has rather stimulated the exertions of the French than diminished them, and it may be accepted as an unquestionable fact that every year the choicest examples both of American and English seedlings are diligently added to the collections of Chrysanthemum specialists in France, there to form fresh material upon which to work.

It is not my desire to examine critically Mr. Shoesmith's valuable synopsis, but I may be excused for observing that Meg Merrilies, included

in his list of French seedlings, was one of the late Mr. John Salter's. This, however, does not reduce the number, for, as Sylphide is erroneously classed as an American variety, that should take the place of Meg Merrilies in the French list. The twenty-two French Chrysanthemums enumerated by Mr. H. Shoesmith can be referred to five or six different raisers, M. Simon Délaux heading the list, as he invariably does, with nine varieties. M. Louis Lacroix follows his eminent compatriot with five. M. Rozain-Boucharlat claims two out of the number, and the remaining varieties are attributable to other growers of less renown.

The American list is subject to an important reduction. Mrs. C. W. Wheeler, Gloriosum, Puritan, W. Tricker and Miss Anna Hartshorn are, in reality, varieties imported into America from Japan, most of them having been thus introduced by Mr. Waterer, of Philadelphia.

It will be within the remembrance of the reader that the list which Mr. Shoesmith worked upon was a selection given by Mr. C. E. Shea. What may appear to some growers to be a more thoroughly representative list will be found in the recently published schedule of the National Chrysanthemum Society, where it will be found the society gives the names of the leading varieties staged at their great show at the Aquarium last November, and if that list be submitted to a similar test to that mentioned above, the results will come out almost the same as in Mr. Shoesmith's analysis. Forty-nine Japanese Chrysanthemums are enumerated in the National schedule. Of these seventeen were raised in France, sixteen in England, eleven in Japan, and five are of transatlantic origin. Here, again, M. Simon Délaux leads the way with six varieties, M. Louis Lacroix occupies the second place with four, and M. Boucharlat comes in third with three varieties.

It seems to be pretty plain from two such trials as these that the French do not suffer by comparison, and I cannot help thinking that the result of an examination based upon the actual exhibits at our leading Chrysanthemum exhibition will carry more weight than a selection by any one private individual.

One reason perhaps why some people think the French have been eclipsed by English and American raisers is the very small number of Continental novelties that received certificates last season. Only three French varieties were so honoured as against ten in the autumn of 1891. But this can hardly be considered a sign of decadence, because some of the 1891 varieties are hardly yet in general cultivation. Another very convincing proof that the French still retain a prominent position among us may be found in the N.C.S. supplement to the official catalogue. In the selected lists of all sections there is a total of fifty-four varieties considered worthy of a place as show flowers; twelve of these are from French raisers, a good proportion I consider when we remember that the lists comprise eight different sections.

The aggregate of the Continental seedlings for the present year is certainly not below that of past seasons, especially if we include the early flowering, the hairy, and the ordinary November flowering varieties from the eight or nine specialists who devote themselves to the cultivation of seedling Chrysanthemums. About 300 is as near as can be gathered from the lists. It is noticeable that some of the older raisers are giving place to newer ones. Dr. Audiguier, MM. Macary, Lassali, Baco, and Pertuzés no longer figure in the 1893 lists, but, on the other hand, strong opponents like MM. Calvat, Crozy, and Sautel seem to be taking their places. Such men as MM. Simon Délaux, Louis Lacroix, Boucharlat, and De Reydellet seem determined to maintain their positions, and, indeed, they have long been distinguished ornaments to French horticulture, and English growers of prize Chrysanthemums would have had but little material to work upon but for their active and intelligent labours in the improvement of the popular Japanese Chrysanthemum, labours which have been the cause of provoking florists of other nations into competing with them.

In the annexed list it will be seen that the novelties are almost, as is usual, confined to Japanese. Here and there a pompon or so-called incurved appears, but past experience assures us that if we are to look for anything worthy of our enthusiasm, it must be among the Japanese. As to nomenclature, there are not this year quite so many of the new flowers bearing excessively long names of five or six words each, but there are, unfortunately, several instances of duplicate names being used. This will always be a trouble with Continental seedlings until the N.C.S. catalogue is used as it is in America. Whether this happy event is ever likely to occur in France it would be hard to say, but we will indulge in the hope that the time is not far distant, for it would be a manifest advantage to everybody concerned in growing, raising, importing, or cataloguing the famous November favourite.

A. Grelet (Crozy).—Ochre-yellow, passing to coppery red.

Alice Lefebvre (Crozy).—Long, broad petals, rosy white, tinted amaranth.

Allur (Lacroix).—Japanese; long petals, purple-violet, reverse white.

Andromède (Lacroix).—Japanese; dark red, reverse striped old gold.

Ariane (Lacroix).—Japanese; broad petals, pure white.

Amand Basset (Crozy).—Long, broad petals, chrome-yellow.

Asène Lefebvre (Crozy).—Broad petals, purple-chestnut-red, golden reverse, centre old gold.

Aurore Alpestre (Calvat).—Broad petals, yellow, rose and red, dwarf.

Baron de Sandrans (Crozy).—Broad petals, fine sulphur-yellow.

Bayard (Lacroix).—Japanese; orange-scarlet, reverse old gold.

Bérénice (Lacroix).—Japanese; amaranth, reverse lighter.

Bésilien (Lacroix).—Japanese; long petals, dark golden-yellow, centre lightened flame colour.

Buffon (Lacroix).—Japanese; broad petals, golden-red, centre golden-yellow, reverse chrome-yellow.

Carnesse du Soleil (Délaux).—Pompon; carmine-amaranth, tipped white.

Capitaine P. de Suzoni (Crozy).—Long, broad, drooping petals bright chrome-yellow.

Ch. Albert (Boucharlat).—Japanese; broad petals, terra-cotta-red.

Ch. Daniels (Boucharlat).—Japanese incurved; broad petals, orange-red, reverse dark gold.

Charlotte (Calvat).—Lilac-rose, broad erect petals, dwarf.

Charme Original (Délaux).—Japanese; dark golden-yellow, flamed red, edged dark crimson, reverse vinous old gold.

Comte H. de Chaisel (Crozy).—Incurved; broad concave petals, ochre-yellow, reverse shaded chestnut.

Comte Pierre Chandon (De Reydellet).—Long, broad, incurving petals, golden-yellow, striped orange-red, reverse yellow.

Comtesse de Andigné (De Reydellet).—Incurved; broad petals, light purple, silvery rose reverse.

Comtesse de Galbert (Calvat).—Japanese incurved; rose, tinted yellow, petals broad; first-class certificate N.C.S.

Comtesse de Maigret (De Reydellet).—Incurved; white, tinted yellow, outer petals tinted rose.

Commandant Blusset (Calvat).—Carmine-purple, reverse silvery, long drooping petals.

Consolation Générale Rozain (Crozy).—Broad petals, garnet-red, with lighter centre.

Dr. Charrelleque (Bruit).—Incurved; light carmine, reverse silvery white.

Dr. Delfau (Lacroix).—Japanese; dull red, reverse light buff.

Dr. J. Grange (Calvat).—Broad petals, fine yellow, dwarf.

Dr. Monnier (Hôte).—Japanese; dark red, reverse and tips chrome-yellow, dwarf and free.

Directeur Barnaby (Crozy).—Yellow, edged carmine, passing to carmine-rose.

Dahomey (Lacroix).—Japanese; dark red, centre and reverse old gold, dwarf.

Echo du Vendômois (De Reydellet).—Light carmine, passing to white.

Edouard Pynaert (Crozy).—Semi tubulated petals, purple-garnet-red.

Emile Mahard (Crozy).—Incurved; purple, with reverse of buff and old gold.

Ernest Caille (Délaux).—Anemone; guard petals rosy straw, centre yellow.

Étoile de Feu (Crozy).—Long broad petals, rich flame colour, base and reverse orange.

Étoile d'Or (De Reydellet).—Golden-yellow, shaded green, and rust-red.

F. Weiland (Délaux).—Japanese: dull red, shaded gold, reverse gold.

Femmes de France (Crozy).—Lilac-fawn and carmine-rose, tipped lemon-yellow, reverse rosy-lake.

Feu Follet (Hoste).—Japanese; long petals, orange-red, tips and reverse golden.

Fille d'Honneur (Boucharlat).—Japanese: rather broad petals, pure white, partly shaded rose.

Flore (Hoste).—Japanese; canary-yellow, passing to cream-white.

Fournaise (Hoste).—Japanese; long twisted petals, brownish red, edged and tipped gold.

Fournaise (Crozy).—Burnt carmine, shaded flame colour, silvery reverse.

Général Dodds (Lacroix).—Japanese; long narrow petals, dark red, reverse old gold, striped red.

Gloire de Salles-d'Aude (Lacroix).—Japanese; long broad petals, soft rose, with creamy centre.

Guirlande (Hoste).—Japanese; broad petals, white, striped rose, centre cream.

Henry Jacotot fils (Calvat).—Crimson-red, reverse gold, broad petals.

Hilda (Lacroix).—Japanese; broad petals, lilac-rose, tipped lighter.

Jacques Gobet (Crozy).—Broad-pointed petals, bright purple.

Jeanjean (De Reydellet).—Dark carmine-red.

Jean-René Chandon (Crozy).—Long broad petals, slightly drooping, milky white, lined carmine.

Joany Sallier (Crozy).—Long drooping petals, golden-yellow, tinted light bronze.

Junon (Lacroix).—Anemone, ashy pale rose.

Jules Chrétien (Calvat).—Purple with silvery reverse, flowers as large as Mrs. C. Harman Payne.

L'Aude (Lacroix).—Japanese; soft rose, centre white.

Le Grand Som (Calvat).—Dark old rose, bronzed, broad incurving petals.

Le Ministre Léon de Brugn (Délaux).—Japanese: long petals, canary-yellow, flamed with red.

Le Phare (Bruant).—Dark nasturtium-red, tipped gold.

Le Rhône (Calvat).—Dazzling yellow, broad petals, dwarf.

Le Tétraz (Calvat).—Dark crimson-red, reverse bronze.

Léon Faulquier (Boucharlat).—Japanese: broad petals, crimson-red, shaded purple, reverse light red, shaded salmon.

Léon Tessier (Boucharlat).—Japanese; broad petals, chrome-yellow, partly shaded purple.

Leriaton (Lacroix).—Japanese; long broad petals, dark violet-amaranth, grey reverse.

Louis Mayet (Boucharlat).—Japanese incurved; light purple-red, reverse rose.

Mme. Ad. Chatin (Calvat).—Pure white, broad incurved petals.

Mme. Ad. Giroud (Calvat).—Carmine-rose, darker towards the centre, dwarf.

Mme. Ad. Moulin (Calvat).—Salmon-white, petals long, broad and drooping.

Mme. Alf. Carrière (Calvat).—Pearly pale mauve, slightly drooping, lacinated petals.

Mme. Auban Moët (Crozy).—Long petals, golden yellow.

Mme. Avril (Calvat).—Mauve and pale yellow.

Mme. Boutreux (Boucharlat).—Japanese; broad petals, bright rose, shaded magenta.

Mme. Carbe (Bruant).—Japanese; broad petals, ivory white.

Mme. Catherine Lacroix (Lacroix).—Japanese; long broad petals, pure white.

Mme. Cieutat (Lacroix).—Japanese; amaranth, speckled white, reverse and centre white.

Mme. Chandon (Crozy).—Creamy white, with flesh-coloured base, reverse cream.

Mme. Ch. Bolot (Crozy).—Long broad petals, white.

Mme. Ch. Molin (Calvat).—Pure white, long drooping petals.

Mme. Chouvet (Crozy).—Rosy lavender.

Mme. de Bellegarde (Boucharlat).—Japanese; broad petals, rosy purple, edged rosy white.

Mme. E. Rosette (Délaux).—Japanese; broad petals, rosy white, passing to pure white.

Mme. George Vibert (Délaux).—Japanese; dark dull purple, passing to orange-purple, reverse straw-yellow.

Mme. Grassin-Delyle (Bruant).—Japanese; ruby-red, striped and edged white.

Mme. Gustave Bonnet (Calvat).—Long curly drooping petals, white, dwarf.

Mme. Henry Perret (Calvat).—Indian corn yellow, dwarf.

Mme. H. de Fortanier (Boucharlat).—Japanese; broad petals, ivory white.

Mme. Jacques Boucher (Crozy).—Broad petals, bright amaranth, reverse silvery.

Mme. Jules Gautier (Crozy).—Broad petals, rose, with carmine edge.

Mme. la Baronne d'Enchlat (Délaux).—Japanese: broad petals, red, with old gold reverse.

Mme. la Comtesse Daurignont (De Reydellet).—Japanese; long broad petals, light sulphur-yellow, centre rosy, lighter reverse.

Mme. la Duchesse d'Uzès (De Reydellet).—Long broad petals, pure white, centre greenish, passing to creamy white.

Mme. Laillault (Bruant).—Carmine-ruby-red, reverse glazed silver.

Mme. Léon Bourgette (Boucharlat).—Japanese; long petals, ruby-red and old gold.

Mme. Léopold Delaude (Lacroix).—Japanese; long petals, golden yellow, shaded burnt sienna.

Mme. Louise Drevet (Calvat).—Pure white, long broad petals, dwarf.

Mme. Moitier (Hoste).—Japanese; curly twisted petals, purple-violet, speckled white.

Mme. Patel (Hoste).—Japanese; silvery mauve-rose.

Mme. Patry (De Reydellet).—Long petals, carmine-red, rosy reverse.

Mme. Paquier (Calvat).—Rosy white, passing to white, fine petals.

Mme. Rozain (Boucharlat).—Japanese incurved; broad petals, bright rose, edged purple, reverse pearly white.

Mme. Vigué (De Reydellet).—Japanese; long white petals, tinted rosy cream in centre.

Mme. Zurich (Calvat).—Amaranth, reverse silvery, broad petals.

Mlle. Anna David (Hoste).—Flesh-rose, spotted white.

Mlle. Blanche Rives (Lacroix).—Japanese; long broad petals, creamy white, shaded salmon, centre darker.

Mlle. Elisa Boëlle (De Reydellet).—Light ashy rose, spotted carmine at tips.

Mlle. Jeanne Nonin (De Reydellet).—Broad petals, white, shaded cream.

Mlle. Jeanne Poirault (Bruant).—Long broad petals, bright rose, reverse silvery.

Mlle. Jeanne Rey (Calvat).—Creamy white, passing to pure white, petals incurving.

Mlle. Juliette Lumière (Hoste).—Japanese; broad petals, pearl white, edged rose.

Mlle. Marthe Viguer (Crozy).—Coppery tubulated petals, tipped garnet-red, reverse gold.

Mlle. Pagerie (Délaux).—Japanese; silvery white, shaded rose, edged dark rose.

Mlle. Philomène Claret (Lacroix).—Japanese; broad petals, soft rose, tipped white.

Mlle. Rozy Gallice (Crozy).—Incurved; rich flesh colour, centre greenish.

Mlle. Thérèse Pankoucke (Calvat).—Long broad petals, pure white.

Mlle. Victorine David (Boucharlat).—Japanese; long drooping petals, pure white.

Marie Prost (Boucharlat).—Japanese; bright satin-white.

Marquise Gaspard de Clermont-Tonnerre (Crozy).—Dark sulphur-yellow.

Marquise Gaspard de Clermont-Tonnerre (De Reydellet).—Japanese; light lemon-yellow, base of petals and centre golden.

Martin Cahuzac (Crozy).—Broad petals, bright Adrianople red, shaded purple.

Miss Manda Drorer (Délaux).—Japanese; broad petals, soft canary-yellow, shaded red, reverse golden.

M. Ad. Giroud (Calvat).—Coppery red, broad incurved petals, dwarf.

M. Alex. Trimardeau (De Reydellet).—Globular flower, broad petals, orange-red, tipped gold, reverse yellow.

M. Auguste de Lacvirier (Lacroix).—Japanese; burnt sienna and gold, passing to yellow.

M. Aug. Perrin (Calvat).—Japanese; lilac, pale reverse, broad petals.

M. Cl. Chandon de Briailles (Crozy).—Dark chestnut.

M. de Langle (Délaux).—Japanese; broad drooping petals, golden-yellow, lined dark crimson.

M. de Mortillet (Calvat).—Old gold and crimson, passing to violet.

M. Ferdinand Dragon (De Reydellet).—Red, with reverse of old gold.

M. Joseph Bonnet (Lacroix).—Japanese; broad petals, dark amaranth, reverse ashy white.

M. Lamby (Délaux).—Japanese; dark golden-yellow, flamed red.

M. Maurice Dallé (De Reydellet).—Rose, lighter towards the centre, which is tinted yellow.

M. Norman Davis (Calvat).—Incurved; crimson-red, reverse golden-yellow.

M. Pankoucke (Calvat).—Bright yellow, long petals.

M. Pitiot (Boucharlat).—Japanese; long drooping petals, bright light yellow.

M. P. Nicollet (Calvat).—Lilac, reverse golden, lacinated petals, dwarf.

M. Richard Dean (Calvat).—Soft rose, tipped yellow.

M. Testoud (Calvat).—Red, with old gold reverse.

M. W. E. Boyce (Calvat).—Incurved; yellow.

Notaire Robillard (Crozy).—Broad incurved petals, garnet-red, with golden reverse.

Papa Treive (Crozy).—Bright amaranth, reverse silvery.

Paul David (Crozy).—Mahogany-red, shaded crimson, reverse light chestnut.

Paulinette (Hoste).—Snow-white, dwarf.

Paysagiste André (Crozy).—Purple-garnet red.

Perte Vivante (Délaux).—Pompon; soft rose, centre white, fimbriated.

Petit Délaux (Délaux).—Japanese; rose, reverse silvery white.

Pierre Vries (Crozy).—Long drooping petals, brick-red, shaded crimson, reverse and tips golden.

Piper Heidsieck (Délaux).—Japanese; pure white, centre cream.

Président Antoine Rivoire (Boucharlat).—Japanese incurved; dark blood-red, reverse gold.

Président Dalmas (Calvat).—Dull red, orange reverse, broad incurved petals.

Professeur David (Crozy).—Long, broad, stiff petals, purple-garnet, passing to carmine.

René Gallice (Crozy).—Long petals, buff and chestnut, passing to golden-rose.

Senateur Millaud (Crozy).—Purple-red, lightened flame colour.

Soleil de France (Boucharlat).—Japanese incurved; old gold and red.

Souvenir d'Auberjeon (Calvat).—Crimson-red, with straw-yellow reverse.

Souvenir de Jambon (Calvat).—Crimson-red, with old gold reverse, long drooping petals.

Souvenir de Mme. Bullier (Délaux).—Japanese; broad petals, velvety dark crimson, lightened flame colour, tips and reverse silvery.

Souvenir de Mme. G. Eynard (Délaux).—Crimson, red, tipped golden yellow.

Souvenir de Mme. Paul Chandon (Crozy).—Broad drooping petals, creamy white, passing to pure white.

Souvenir de Petite Amie (Calvat).—Pure white, dwarf.

Soyons Bien (Hoste).—Japanese; bright poppy-red, reverse golden rose.

Triomphe de St Laurent (Calvat).—Bright yellow, broad drooping petals.

Troubadour (Hoste).—Japanese; carmine-lake, striped white, dwarf.

Vésure (Lacroix).—Japanese; velvety scarlet-red, reverse gold.

Willie Drover (Délaux).—Japanese incurved; purple-amaranth centre, silvery ball.

C. HARMAN PAYNE.

ORCHIDS.

LÆLIA PURPURATA VARIETIES FROM BRUSSELS.

I HAVE received from M. Linden, of Brussels, a box containing twenty-eight named varieties of this species. All are bright and beautiful, but space will not permit me to notice all the kinds. Some under different names seen at the last Temple show appeared similar, thus showing the confusion which is likely to accrue from naming all flowers that appear amongst imported plants. Looking at these as a whole, they are exceptionally beautiful, and I could not have thought so many fine and distinct-looking forms could have been found amongst *Lælia purpurata*. I will describe a few which appeared to me to be the best. First of all comes a fine flower called

LÆLIA PURPURATA TRIUMPHANS.—This has fine rose-coloured sepals and petals veined with a

deeper shade of the same colour, lip very large and of a deep shining purple, the tip lighter varied with darker lines; throat yellow veined with deep purple.

L. PURPURATA FORMOSA is a very similar flower with a longer lip.

L. PURPURATA DELECTA is very showy, the sepals and petals pure white with a narrow marginal band of rose; lip deep velvety purple, the apex white flushed with rose; throat light yellow.

L. PURPURATA LOBATA is a large and distinct flower, measuring upwards of 8 inches across, with broad sepals and petals of a soft rose; lip dark purple bordered with a narrow line of pale rose; the front lobe long and pointed, tipped with rosy lilac; throat white.

L. PURPURATA JUNO is a smaller flower, but very attractive, having pure white sepals and petals and a deep purplish crimson lip margined with white with a triangular blotch of white at the tip; throat tinged with yellow.

L. PURPURATA FASTUOSA is a grand flower, having broad sepals and petals, which are rosy purple veined with a darker hue; lip large and of good shape, deep crimson-maroon tipped with lilac, the throat white.

L. PURPURATA MAJESTICA has a very large flower with broad sepals and broader petals, all of a pure white; lip very large, the front lobe very long, deep violet-purple bordered with white, the front white veined with violet-purple.

L. PURPURATA JOHANNÆ is a fine variety, having pure white sepals and petals; lip rich purplish magenta, with a white border, the front having a large blotch of white; throat yellow.

L. PURPURATA PULCHRA is a very attractive flower; sepals and petals rose colour, with darker lines; lip deep crimson-purple, having a triangular blotch of creamy white at the tip; throat creamy white in the upper part, yellow at the bottom.

L. PURPURATA PHŒBE is a particularly charming flower, having flesh-coloured sepals and petals; lip rosy purple, paler at the tip; throat white, flushed with a lively yellow.

L. PURPURATA FASCINATOR is another distinct and handsome kind, with the sepals and petals of a deep rosy purple; lip wholly reddish carmine, throat golden yellow.

L. PURPURATA JOSEPHINÆ is another handsome and large flower, the petals beautifully undulated, and, together with the sepals, white, suffused with rose; lip large, bright rose, veined with purple.

L. PURPURATA PRÆSTANS has the sepals and petals white, veined with rose; lip large, bright carmine-purple, paler in front, through which run numerous carmine veins; throat white.

I have selected the above kinds from the number sent because they appear to me to be the most distinct. I do not say that the remaining varieties are not very beautiful, but they can be more often met with amongst a lot of imported plants. WM. HUGH GOWER.

Cattleya Mossiæ.—A fine spike bearing three flowers comes from Mr. Broome, of Llandudno. It is an excellent variety. The variety in question measures 9 inches across the petals, each petal being slightly over 3 inches, frilled and undulated on the margin, the sepals much narrower, with plain edges, the colour soft satiny rose; lip large and broad, beautifully frilled round the edge, rich orange in the throat and at the sides, the centre of the front lobe magenta-crimson in broad lines and streaks. It is a very fine variety.—W. H. G.

A new Disa in bloom now in the Orchid house at Kew is named *D. kewensis*. It is one of a number of crosses made by Mr. Watson, this hybrid being the first to flower. Its parents are *Disa grandiflora* and *Disa tripetaloides*. The seed was sown two years ago, so that there has not been a long interval before the period of flowering, as with many Orchids. *Disa grandiflora* is the mother parent, and the flowers are something like those of both species, reminding one strongly of those of *D. Veitchii* raised by Mr.

Seden. The flowers have quite the expression, so to speak, of that hybrid, but they are about half the size, similar, however, in colour. The prevailing colour is rose, and we see a distinct trace of *D. tripetaloides* in the colouring of the dorsal sepal, which is white, with spots of rose, the lip also spotted. Each flower is about 1½ inches across, and several appear on the scape, which is fully 18 inches high. It is thus very free, and the aspect of the plant betokens a vigorous constitution. We shall look forward with interest to other seedlings flowering, and in time quite a colony of hybrids will have been gained.

ONCIDIUM SPHACELATUM.

THIS is an old plant which I am asked by "Grower" to give a few hints on as to culture, &c. It is one that I should recommend to the attention of all beginners in Orchid culture, for, independent of its free-growing qualities, it makes a gay and showy display for some months in the year. It is now over fifty years since this plant was first collected by Hartweg, and it first flowered in 1841. A somewhat similar plant was introduced just 100 years ago, and called *O. altissimum*. Indeed, I sometimes have seen this plant growing under the name of *O. sphacelatum*, but it is not so pretty. I do not think the plant has ever been out of cultivation since its first introduction, for the rapidity of its increase and the ease with which it may be grown have long caused its importation to be discontinued. It appears to be widely spread through Honduras, up through Guatemala, and into the southern part of Mexico, but it does not appear to be particular as to the temperature it is subjected to, for I have seen it grow and flower freely when kept in the East Indian house, and I have had the same species do equally well when kept in a stove or intermediate house; but I do not think it likes the cool house in the winter months. It is one of those Orchids which thrive best in the stove with a mixed collection of plants, and for such a position I would recommend it and also the other kinds named here. They should all be potted in a mixture of peat fibre and Sphagnum Moss. The pots should be well drained, because in the growing season the plants enjoy liberal supplies of water to their roots and also overhead.

O. SPHACELATUM is a strong-growing and free-rooting plant, producing oblong, ovate pseudobulbs and somewhat large strap-shaped leaves of a rich green; spike some 4 feet or 5 feet long, erect, bearing a profusion of flowers, which are bright yellow, having the sepals and petals barred with chestnut, the yellow lip being blotched with the same colour. There are several varieties.

O. HASTATUM.—Another free-growing plant which thrives well in a mixed collection. It produces a spike some 5 feet in length and bearing many flowers; the sepals and petals are similar, having a yellowish green ground, barred transversely with dark brown.

O. FLEXUOSUM.—This is another old and well-known species—a universal favourite, from its being so well adapted for personal decoration. It is more slender in its growth than either of the species previously named, but it grows well in their company. The spike reaches some 2 feet or 3 feet in length, much branched, bearing a quantity of bright yellow flowers; the segments variously spotted or barred with bright brown.

O. EXCAVATUM is a robust-growing plant, and good varieties are very beautiful. It has stout pseudobulbs and large strap-shaped leaves, which throw up a large branching panicle of bloom. The flowers are bright canary yellow, variously marked with reddish brown. It derives its name from a

deep hollow at the back of the lip at its base. Some varieties make a very long spike.

O. ALTISSIMUM.—This, perhaps, is the strongest grower and the least desirable kind. It flowers freely, so that it affords plenty of cut bloom; indeed, it is well to have a plant for this purpose, as it prevents the flowers of other specimens being cut. WM. HUGH GOWER.

SHORT NOTES.—ORCHIDS.

Epidendrum vitellinum with double flowers. —From "S. G." I have received a spike of bloom in which are three so-called double flowers. To me they appear to be malformations, and they certainly do not add to the beauty of the plant.—G.

Oncidium concolor.—A fine spike of bloom of this species comes to me from Hugh Black. This usually is to be seen in bloom in the month of April, and now we have it the last week in May. The spike in question carries fifteen flowers, the individual blooms being large and of a good clear yellow. Mr. Black tells me the flowers have been open five weeks. —W. H. G.

Aerides Lindleyanum.—From the Rev. Mr. Way, of Warwick, comes a very fine variety of this plant, having pure white sepals and petals and a rich amethyst lip. It has a delicious perfume. I am told the plant has a fine branching spike. I have frequently received this plant from about Ootacamund, where it seems to be found. Under cultivation cool treatment suits it well. I cannot imagine why this *Aerides* has been so much neglected.—W. H. G.

Orchid flowers from Hinckley.—Messrs. Hurst and Son, of the Burbage Nurseries, send some *Miltonia vexillaria* blooms for an opinion. They all appear to be good light forms, but nothing noteworthy. No. 4 appears to be the best. They also send a flower of *Lælia purpurata blenheimensis*, the sepals and petals rosy purple, the petals much darker; lip large, intense deep purple, the tip violet-rose; throat yellow, regularly veined with dark purple. It is a very excellent variety.—W. H. G.

Lælia tenebrosa.—A very superb form of this beautiful species comes from the Rev. E. Handley's collection at Bath. Mr. Kerslake, his gardener, says he thinks it superior to any that were staged at the Temple show, an opinion with which I quite agree. The sepals and petals are broad, of a deep rich chestnut-brown in colour, whilst the large lip is rosy lilac, heavily stained with deep maroon and veined with the same colour. It is the richest and darkest form which has hitherto come under my notice.—W. H. G.

Viburnum plicatum.—I was interested in the note from "A. H." in THE GARDEN, May 27 (p. 446) on this important shrub. It is not, as far as my observation goes, in the least tender, and I have seen it in both northern and southern gardens. When at the Knap Hill nursery recently it was very beautiful, and the wonder is that such a shrub—hardy, remarkably vigorous and very free—is not grown in even small gardens. A large bed of it on the outskirts of the lawn is one of the finest things one can conceive in the late days of May or early in June. This year, owing, of course, to the warmth of early spring, the shrub is blooming before its usual time, and in not a few instances the globular heads of flowers have been touched by the frost, whilst they are also smaller than usual. This shrub is a native of China and quite unlike the common Guelder Rose, which is, however, far more graceful. *V. plicatum* makes a spreading growth, the shoots wiry and clothed with deep green wrinkled leaves, against which the rich profusion of flowers is in bold contrast; but it so free that when in full bloom it is scarcely possible to see the foliage, which is hidden beneath the surface of flowers. The remark as to the shrub being valuable for walls is quite true, and a speci-

men at Chiswick in such a position is covered with flowers—a sheet of white. Although useful for this purpose, however, it is still finer, spreading out into a bush in the open, where it charms one with a profusion of flowers in early summer.—C.

THE ROCK GARDEN.

WATER IN THE ROCK GARDEN.—IV.

(4) THE POND.

GENERALLY speaking, this form of water in the rock garden is more frequently abused than any

creases their ugliness, but also produces a foul atmosphere.

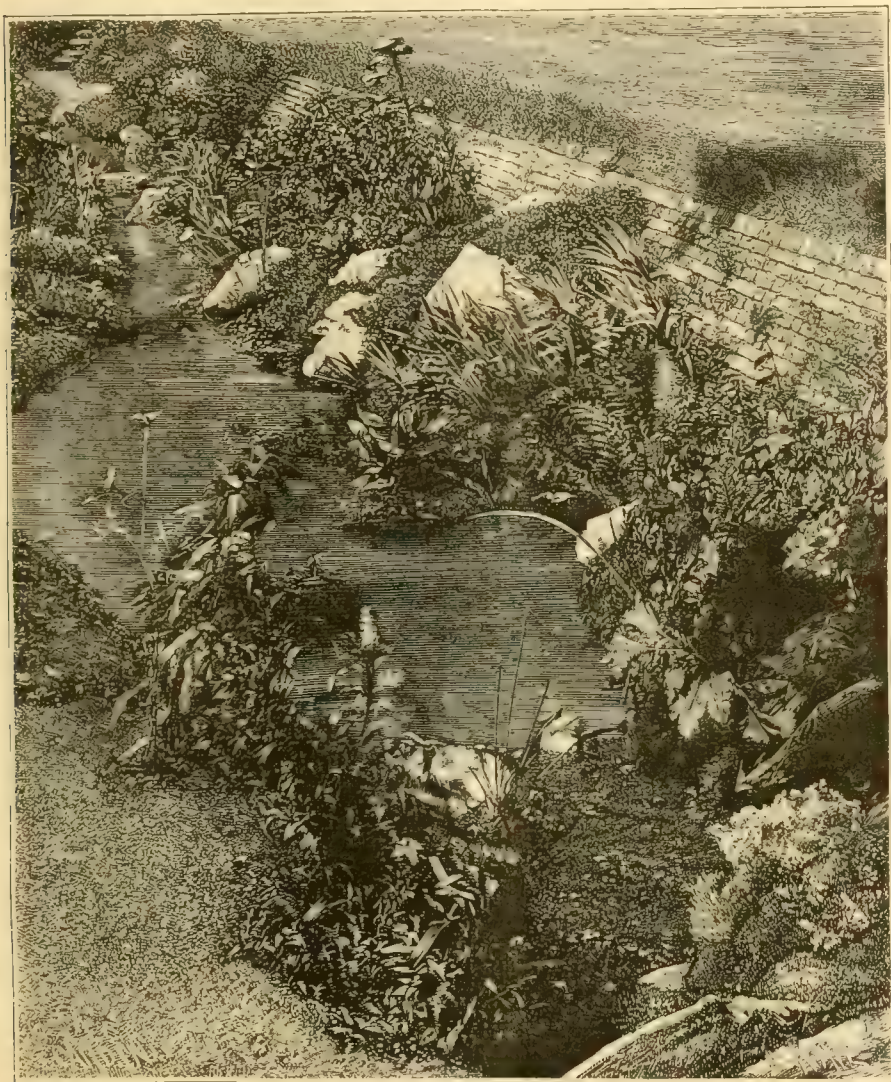
Yet it cannot be denied that a well-formed pond of natural appearance may be made the most useful as well as one of the most ornamental features in a rock garden. A pond so arranged that the overflow is opposite the plainly visible influx will never be stagnant, and will be free from the accumulation of the filth so generally found on the surface of ponds. If the water be clear it will produce a particularly charming effect by reflecting its surroundings of picturesque rocks and banks enlivened with

ings with which it is to harmonise, and we cannot do better than follow Nature and study her laws of the natural formation of ponds and streamlets. When speaking in a previous chapter on the formation of a natural streamlet, I pointed out that, however winding the shape of the streamlet may be, its banks would be more or less approximately parallel, as flowing water diverted from its natural course by coming in contact with a rocky promontory would cause a greater wash on the opposite shore and form a concave outline in direct proportion to the abruptness with which the water rebounded from the other (convex) side. This natural law must hold good with equal force in the formation of a pond, which, after all, can only be considered as a streamlet which has been widened through the parallel curves of the shore-line becoming more relaxed. This we should consider when forming an artificial pond in the rock garden, abiding by Nature's simplicity rather than indulging in all sorts of fanciful shapes, which in Nature would be impossible. The shore-line of natural ponds is an almost certain indication of the depth of the water adjoining it. A flat or gently sloping bank is, as a rule, continued beneath the surface of the water at the same angle and covered by shallow water; while steep or rocky banks will, in most cases, be continued under water with the same abruptness, thus causing a deep depression. For practical use in the construction of a pond in the rock garden, these hints from Nature are of greater importance than might at first appear. They teach us that projections in the shore-line should have steeper banks than the bolder curves of bays and recesses, and in the formation of a pond we will, therefore, do well to face mostly such steep projections or promontories with rocks, leaving the gentler curves of flatter shores to be covered mostly with Grass, enlivened here and there with groups of suitable plants. I now come to the

PRACTICAL CONSTRUCTION OF A POND.

I will strictly confine my remarks on this subject to ponds in the rock garden only, leaving larger ponds or lakes for parks quite out of the question. The ponds here to be considered will, therefore, in most cases be rather limited in extent, which is all the more reason why we should endeavour to make them as effective as possible. The proper place for a pond in the rock garden is naturally at the lowest level of the ground at disposal, and if this is not low enough to enable us to give the banks around it the appearance of sloping towards the water's edge, the soil must be excavated to ensure that effect. Nothing looks more unnatural than a pond on a high level with rocks and banks adjoining it on lower ground. In a rock garden which is to contain a pond the position and shape of the latter must, therefore, be the first thing to be decided upon, for being on the lowest level it forms a fundamental basis for the subsequent operation of building and arranging the various groups of rocks surrounding it. I do not mean to suggest that the parts surrounding the pond should be the first to be completed, but the pond itself should be the starting point from which to proceed with the marking out of the various features of the work.

In marking out the pond, due allowance must, of course, be made for the rocky projections, the thickness of the concrete walls at the sides, &c. But as this allowance would apparently increase the size, it is very misleading in forming an accurate judgment in planning the effect of the surroundings. My plan, therefore, is



Margin of pond in a rock garden.

other. I have already spoken in condemnation of the repulsive circular cement basin with its water squirt, which, however suitable it may be by some be considered elsewhere, is decidedly out of place in the rock garden. Unfortunately ponds of regular outline forming circles, ovals and even squares are as yet by no means extinct, and may often be seen in connection with so-called rock gardens. On the other hand, we may also find ponds whose outline is faulty by going to the other extreme by being unduly contorted and twisted, and therefore just as unnatural in appearance as ponds of a regular outline. Both kinds are most objectionable, particularly so when, as is often the case, they are full of stagnant water, which not only in-

graceful foliage and bright flowers of many hues. With regard to utility, too, the advantages of a pond, however small, among the rocks, should not be under-rated. Not only will the water thus exposed to sun and air be found excellent for the purpose of watering or sprinkling the rock plants, but the continuous evaporation, especially on a warm sunny day, forms the best substitute for the moist atmosphere surrounding the choicer kinds of mountain plants in their native homes, to say nothing of the facility afforded to the growing of choice aquatics or other plants enjoying a free access of their roots to the water.

THE SHAPE OF A POND
should, in my opinion, depend on the surround-

first of all to mark out the exact size and shape of the pond as it is to appear when finished, not marking out the additional excavations required until the principal features of the rocky groups and their distribution in the rock garden have been designed and at least approximately decided upon.

Cement concrete is the only means for securing the sides and bottom of a small pond in a thoroughly efficient manner. Ponds with earthy sides waste enormous quantities of water, and are always more or less muddy. Even if the sides and bottom have been puddled with impervious clay, the result is not always satisfactory, for sooner or later the sides will crumble away, or leakages will be caused by rats and other vermin digging holes in the clay; often, too, in spots which are the least accessible and therefore the most difficult to repair. On the other hand, ponds made of cement concrete will stand for generations without any repair whatever, and as not a vestige of cement should be visible when the work is completed, there will be no stiff and ugly outline exposed to view if my plan is followed. The great trouble seems to be the shore-line at the water-level where the slightest ripple of the water when moved by the wind would cause a wash. To prevent this, many people carry the cement-work above water-level, so as to be plainly visible, which of course is most unnatural in appearance, and has probably led to the widely-spread prejudice against cement-work. But I have often seen another still more repulsive method of securing the shore-line, and that is the paving of the margin with pebbles or small stones. The absurdity of such an introduction of stiff lines into what should be a picturesque rock garden needs no comment.

As my own method of constructing ponds differs from any others that I have seen, and as it has successfully stood the test of many years, a few words of explanation may not be amiss. After the ground intended for the pond has been excavated, taking due care to maintain a winding outline of natural appearance, the sides are sloped sufficiently to allow the concrete to be firmly packed against them. A mixture of five parts of broken stones and sand to one part of Portland cement will be found sufficiently substantial for this concrete. A depth of 2 feet to 3 feet of water will for most rock gardens be ample. The important departure of my method from the general way of constructing ponds consists chiefly in setting back the concrete about 6 inches below the intended water-level, so as to form a step or shoulder 6 inches to 8 inches wide, slightly sloping towards the outer margin. The reason for this shoulder is obvious. It prevents a hard and stiff outline by providing a firm resting place (6 inches under water) for stones and turves used in the formation of the bank, which, thus continued below water-level, will hide every trace of cement-work, and, if well arranged, will be perfectly natural in appearance. This mode of dealing with the shore-line is also a perfect protection against the washing out or crumbling away of the sides when the water-surface is moved by wind into rippling waves. No part of the cement-work should be covered until it has been made perfectly water-tight. When the rough concrete above referred to has sufficiently hardened, it should be covered with a thin coating consisting of one part cement and one part sand until quite smooth and water-tight. The shoulder especially must be carefully cemented, as otherwise a leakage would be likely to occur. Not till the whole cemented surface

has become hard can the work of masking the cement-work be commenced. At those portions of the shore which project into the water this masking is done mostly with stones and soil only, providing during the progress of the work suitable places under water for growing Water Lilies and other aquatics, according to the size of the pond, and above the water for plants of a semi-aquatic nature, and suitable to add natural grace and simplicity to the margin.

A margin of this kind is represented by the illustration No. 1. The wall in the background of the illustration somewhat mars the *tout ensemble*, but when hidden by suitable vegetation, the effect of the whole will be a most pleasing one. At the recesses or bays of a pond, I commence the masking of the cement-work, not from the bottom of the pond, but from the shoulder referred to above, and the principal material used would be thick turves, such as described in a previous chapter under the heading of "Grassy Banks." The Grass should not be neatly trimmed, but should be allowed to assume a semi-wild character, and here and there we might introduce plants whose roots would have free access to the water-soaked soil between the turf and the cement above the shoulder. In this way the water margin is rendered so natural in appearance, that the presence of the cement-work underneath would never be suspected.

Any parts of the smooth cemented surface below the water-level, which, through very clear water, might sometimes be visible can be effectively hidden by covering them in a rough and irregular manner with cement and sand, throwing in some dark colouring matter mixed with stones or gravel while the cement is still wet. The bottom of the pond should be covered with gravel and water-washed stones of all sizes; thus not a single inch of the original smooth cement would be visible, not even if the pond were empty.

Of the plants most suited for margins of ponds or for the pond itself, I will speak in a later chapter specially devoted to plants.

Exeter.

F. W. MEYER.

(To be continued.)

KITCHEN GARDEN.

PLANTING CELERY.

To secure well-formed heads of Celery much depends upon the planting and other details connected therewith. Celery heads should be of medium size and solid. Large heads of Celery are all very well as regards outward appearance, but the experienced cultivator knows that these are very deceptive, mere bulk being all that they can lay claim to, as rarely indeed are these of good quality, the stalks being tough and pithy and also decaying rapidly. The first consideration is the trenches, and in the preparation of these judgment is needed. For instance, on cold soils it would be a great mistake to form these deep, or such as may be considered suitable for light and consequently warmer land. There may not be so much difference noticeable in the case of the earlier crops, but with the main or late batch it is decidedly so. This being planted low down, it is more under the influence of damp, consequently decay is apt to set in earlier. Especially is this the case if the late autumn and early winter should prove to be wet. Of course, I do not advise going to the

extreme in any case, but, according to my experience and observation, Celery trenches are very often prepared too deep, and not only too deep, but the rows are much closer together than they should be, with the result that there is not sufficient soil for earthing. Certainly sufficient might be secured for the blanching, but not enough to keep out frost, and I look upon soil as one of the best protectors of Celery from frost. I leave more space between the rows than is generally recommended, but even with this extra space I only procure sufficient soil for earthing. The intermediate space is never wasted, as along the top of each ridge a row of Lettuce is set out, and these having the advantage of a free circulation of air succeed admirably until far on in the autumn. The space I leave between the rows is 5 feet 6 inches, and where double cropping is not practised, 6 inches or 9 inches less. To accommodate a single row of plants, the width of the trench should be 15 inches. I cannot see any advantage in having wider trenches so as to accommodate a double row of plants, especially where they are to stand the winter, as on account of the wider top this is more open to wet. With single rows, the soil in the process of earthing may be brought up more sharply, so that the rains run off.

The distance apart and width of trenches are only part of the routine, as the composition of the rooting medium has to be taken into account. Now to take out the soil from the trenches to the depth of 9 inches or 1 foot and place it on each side, afterwards forking into the bottom the quantity of manure intended to be used, will not grow good Celery if the sub-soil is of very indifferent quality. Nor is a superabundance of manure of any real benefit. Enough, and no more, for giving the plants a good start is what is required, growth being afterwards encouraged by ample watering when needed, a soaking of liquid manure occasionally and light sprinklings of salt, these latter being a real aid to free growth. Large quantities of manure at the time of planting result in a gross growth. The soil having been taken out to the depth of 9 inches or 1 foot, as the case may be, the bottom of the trench should be first forked over, and over this be laid a layer of solid manure, surfacing this with burnt refuse to the depth of an inch. On top of this place 3 inches of the best soil taken out.

All our Celery trenches are now prepared, the different batches being planted as soon as ready. Overgrown plants, besides moving badly, often receive a very severe check, and if it does not result in bolting, the hearts do not afterwards come well up. Plants that have been pricked out into a suitable and holding root medium always lift well when this operation is not left too long. In taking up the plants, remove all small leaves and incipient suckers clustering about the base, as if such should be neglected it entails a lot of work in removing them whilst the plants are in full growth, and if these are allowed to form they draw off strength from the main heart. Care must also be taken that the balls of soil are well moistened at planting time, this being well seen to over-night. If they should be planted with the balls in a dry state it takes a lot of water to penetrate after planting. Plant rather firmly, putting the plants 8 inches or 9 inches apart, a soaking of water afterwards settling the soil about the roots. A few sprinklings in the evening will also assist greatly in establishing the plants.

A. YOUNG.

Setting Tomato flowers.—I should like to learn whether any readers of THE GARDEN have

ever employed the syringe to assist in the fertilisation of Tomato flowers in the same way that syringing is sometimes employed to assist in the setting of Vine flowers. Much to the surprise of his hearers, the reader of a paper on the Tomato at our gardeners' association stated that it was his regular practice to syringe his plants well before shutting up the house, and that whilst he adopted no other course in assisting to secure fertilisation, yet he always had a first-rate set and heavy crops. This was borne evidence to by some who had seen the plants, although neither the grower in question nor his neighbours seem to have thought that the syringing was helpful to fertilisation. The general opinion seemed to be in favour of keeping the plants rather dry than otherwise, and in tapping the bunches of flowers daily, using a stick on the point of which is tied a piece of cotton wool. This latter practice I have found to be by far the most general, no one grower in a hundred employing the camel's-hair brush, as it is at once tedious and ineffective. Whilst it may be thought that moistening the pollen would destroy its fertilising value, there is no good reason to assume such is the case, except when the moistening is of an extreme or continued character. The tiny streams of water driven from a syringe and striking the pollen cases seem well suited to liberate the pollen, and then it would settle upon the points of the pistils in ample quantity. The chief objection to syringing Tomato plants is found in the tendency of moisture to promote spot and mildew. Still, there is the assurance of the grower in question that he is never troubled with any of these diseases.—A. D.

Prevention of cracking in Tomatoes.—It need hardly be pointed out that cracking in Tomato fruits is a decided blemish either for home use or if for sale; in fact, for this latter purpose their value is lowered considerably. To prevent cracking maintain a buoyant atmosphere, taking care not to damp the structure down in the afternoon, closing it at the same time, this causing a sudden rise of temperature, which, coupled with moisture, causes the fruits to crack.—A. YOUNG.

Sowing Chou de Burghley late.—This is a useful vegetable for spring use when sown late. I find the best time is to sow it during the first half of June, planting the seedlings out as soon as strong enough. My plan is to plant them out on ground that early Potatoes have been grown on. As I make it a rule to highly manure the ground for early Potatoes, that leaves it in the best condition for green crops. Some few years ago I remember, when at Didlington Hall, Mr. Stocking used to grow a big patch of Chou de Burghley, planting it out as above described, and he found it stand well and come in very useful in springt.—J. C. F.

Winter Kales.—I, like Mr. Young (p. 459), am much in favour of a good supply of these Kales for winter use. I do not think they are nearly enough planted simply because they are looked upon as being common and beneath notice. Where possible, sow early and plant out directly they are ready. A long season of growth is then assured and maturity will follow, which is, after all, the essential point in preserving a full stock of plants for winter use. I like to see Cottagers' Kale run up to 3 feet high, as a full crop of succulent sprouts is then assured. I, like Mr. Young, pin my faith to the old variety named, although Ragged Jack is a capital sort for flavour and tenderness, but it lacks the quantity which the other will produce. Except where grown amongst Potatoes, it is not necessary to earth up the plants.—E. M.

Potatoes in deeply stirred soil.—Here, where the Potatoes are growing in deeply trenched soil, but which received no manure, the previous crop being Onions, in spite of the excessive drought experienced here for the last three months, as but 0.79 inch of rain has been registered since March 3, I never saw this crop look more promising. The haulm on such varieties as Windsor Castle, Sutton's Seedling, and Abundance is 2 feet or more high, strong in the stem, while the appearance of

the foliage leaves nothing to be desired. In a field close by where the tubers were planted before those in the garden, the soil not having been more than once ploughed in the winter and again as planting proceeded, the haulm is but a few inches out of the ground and irregular in growth. These defects are due mainly to the method of preparing the soil. I daresay if the owner was told the reason of the lagging growth of the tops he would rather blame the weather than admit that the cultivation of the ground was at fault.—E. M., *Swanmore Park.*

Seasonable note on Beet.—"H. M.'s" notes (page 459) will do much good. Beets, as a rule, are too big and too coarse. There is no profit in having them either, as two small roots may be grown where one bigger one stood. What strikes one most at the co-operative shows at the Crystal Palace is less the coarseness of the Beet than the number of growers and exhibitors. A few years ago only a few of the working classes grew or ate Beet; now it is beginning to run Carrots, Onions and other popular vegetables hard. This marks a great advance forward in the living of the industrial classes. But I write especially to advocate the growth of the Turnip-rooted Beets, for, as a rule, they are the most nutty flavoured. They are also the earliest, most easily grown and cooked, and are less liable to injury through lifting and storing. Not a few Beets are ruined in the last stage through bleeding before cooking.—D. T. F.

FRUIT AND KITCHEN GARDENS IN DROUGHT.

CONSIDERING the cost of good fruit trees and their transplanting, it pays to spend a little labour to guard against loss, not only of the trees, but of a season. Even if young trees during drought do not actually die, they are so much crippled as to take long to recover.

All young trees at the time of planting should be well watered in. Do this in any case, and upon any soil, for it tends to support the trees, and is the means of saving the fibrous roots through settling the soil more closely. Mulch the ground around the trees to protect the roots from drought. The best mulch is farmyard manure, which retains moisture better than any other manure. Old Mushroom beds are excellent. Leaf soil is not so good, there being risk of fungus. It is a good plan, when mulching for the purpose is not to be had, to surface with soil above the roots rather deeper than eventually will be practised as the trees become established. The trees that suffer most during a dry period after planting are Apricots, Cherries, Peaches and Nectarines; compared with Apples and Pears, these are more moisture loving. With a mulching of manure upon the soil it is always possible to water the trees more effectively.

Trees that have been planted a few years will even need attention; so also will older ones where not getting plenty of water. Should any trees promise well for fruit, it will pay to water them. Morello Cherries during the stoning period are very sensitive to drought. In some soils, where deficient in lime, it will be found necessary to have recourse to bone meal or other ingredients which contain a good proportion of this essential product in the case of stone fruits. More especially will this be the case if the trees have, during the past season or two, borne heavy crops without any such assistance being given them. A heavy crop of fruit in any case during a dry season is a severe tax upon the tree.

My kitchen garden is on gravel, and I therefore mulch as far as I can all crops likely to suffer. It does not do to first let them suffer; it is best to be in good time. Upon heavy soils, kitchen garden crops will continue to thrive longer than on light ones. There is one most pleasing feature in the kitchen garden with me this year, it is that of the germination of all kinds of seeds. The plant also looks strong and healthy, thanks again to good culture. Thus far I

have not resorted to mulchings, but intend to do so in a few days. The first will be given to the Pea crop, then the earliest Scarlet Runner Beans, and the French Beans, and if I see any probability of a hot, dry summer, I shall mulch Brussels Sprouts, autumn Cauliflowers, and any crop that can be in this way helped. Asparagus, as soon as cutting is given up finally, should be mulched; it will greatly tend towards better results another spring. This is a crop that does not get nearly so much attention paid it as its merits deserve. After cutting has ceased, the only time often spent upon it is in the way of keeping down weeds. Treat it liberally by waterings of manure water or fish manure, and the results will be all the better. Mulching does not mean much labour, for the manure is upon the ground for the next crop, whilst it is a saving in watering. Strawberries should all have been mulched or strawed down before now, and frequent waterings given upon light soils; otherwise the fruits will not set and swell to a good size.—H. G., in *Field*.

Early Peas.—In answer to query on page 443, our first dish of Peas was gathered on May 21, the variety William Hurst. It was sown on a south border on November 22, 1892. Our soil is a light loam and the position a very sheltered one, practically screened from all cold winds. These Peas have had no water, but received a good mulching of half rotten manure as soon as they commenced to move after the break up of the frost, and this has proved highly beneficial through the spell of dry weather. I think Mr. Young is quite right in his commendation of dwarf Peas, so far as the present season is concerned, they being earlier and cropping better than taller varieties. The shelter, however, is in a great measure responsible for the early season. I generally get in a few rows of Veitch's Selected or a similar first early on the open quarter if possible in November, but William Hurst on a south border always beats them by a week or ten days, and this year just a fortnight.—E. BURRELL, *Clarendon*.

STOVE AND GREENHOUSE.

DECORATIVE PELARGONIUMS.

To attain popularity as a decorative Pelargonium, it is not absolutely necessary that the blooms be marked in any particular manner as in those of the show varieties, but good sturdy habit, neat foliage that is well retained to the base, freedom of flowering, good bold trusses, and decided colours are all points that are taken into consideration. At the recent Temple show a group of this section of Pelargoniums was shown by Mr. Jones, of Lewisham, by whom decorative Pelargoniums are largely grown, and as many of the best varieties of this class were there represented, a few notes taken at the time may be of interest, as well as two or three recently noted elsewhere. Among the best may be mentioned Agnes Cook, lilac blotched with maroon; Empress of India, a very large flower of an orange-salmon tint, with a crimson blotch on each of the upper petals; Sir Trevor Lawrence, deep purplish red, blotched maroon; Blanche, white, except a slight feathering at the base of the upper petals; Jubilee, a pleasing shade of pink, with just a suspicion of salmon, and the top petals darkly blotched. The growth of this is remarkably compact, and the edges of the petals are very prettily fringed. Radiant, bright crimson, darkly spotted; Mrs. Stone, a distinct shade of lilac; Prince of Orange, orange-red; Marie Malet, white, all the petals clearly blotched crimson; Lady Isabel, lilac-rose, with dark blotches in upper petals; Mabel, rose, with almost black spots; Edward Perkins, orange-scarlet, very good; Mrs. Stanley, enormous trusses of bloom, colour rosy lake, with maroon blotch on upper petals; Rose Bard, rosy crimson; Duchess of Fife, the brightest of the Mm's

Thibaut class, the flowers being of a very rich carmine tint, with a narrow white edge and white centre; Miss Weatherall, salmon-pink, with small blotch on upper petals; and Princess May, one of the newer varieties, of a soft salmon-pink, with crisped edges to the petals, were also noted. This last originated with Messrs. Hayes, of Edmonton, so well known in connection with decorative Pelargoniums. Gold Mine, bright reddish orange, with maroon blotch in upper petals, a show flower, is one of the few of this section that are grown for market, another being Martial, deep rich crimson with almost black upper petals. A pretty compact variety is fimbriatum album, with pure white semi-double blossoms with crisped edges, while two other desirable forms will complete these notes. They are Magpie, one of Mr. Turner's varieties, a white flower, except that each petal has a large purple blotch; and Champion, bluish-white, feathered with crimson, very large flowers and immense trusses. In the case of Pelargoniums, as with many other popular classes of plants, a good deal of confusion exists with regard to their nomenclature, as some names especially of prominent celebrities are applied by different raisers to two or more totally distinct forms. H. P.

Ixora Westi.—Most *Ixoras* greatly resemble each other in the colour of their blossoms, but this is very distinct, and on that account alone it is well worth notice. It was raised at Messrs. Veitch's nursery at Chelsea, and was distributed in 1882, so that it is by no means a novelty. At the time it was sent out this *Ixora* was announced as a cross between *I. odorata* and *I. amboinensis*. The flowers, which are borne in good-sized trusses, are large and of a very pale pink tint, becoming somewhat deeper in colour, however, with age. The pale pink blossoms afford a pleasing change from the orange-reds and salmons which are so prevalent among the *Ixoras*. A coloured plate of this *Ixora* was given in THE GARDEN of December 3, 1892.—H. P.

Hydrangea hortensis mandschurica.—There are many different forms of the *Hydrangea* in cultivation, but this is one of the most distinct, not so much from the colour of the flowers as from other features. It is readily distinguished from all others by the stems and leaf-stalks being of a rich blackish purple, while the flowers are in most cases deeply tinted. This variety is also known by the name of cyanoclada, and in one nurseryman's catalogue it is, I see, announced as the true blue *Hydrangea*, which it certainly is not, unless special treatment be accorded it. In any selection of the best *Hydrangeas* it should undoubtedly have a place. Regarded only from a foliage point of view, there are two or three very pretty *Hydrangeas*, notably *H. japonica elegantissima*, whose leaves are freely variegated with white, and the North American *H. quercifolia*. Widely removed from all the preceding is *H. volubilis*, often met with under the name of *Schizophragma hydrangeoides*. This is essentially a climber, and will attach itself to walls after the manner of Ivy. The inflorescence of this is not particularly showy, as nearly the whole of the flower clusters consist of small fertile blossoms, the large showy sterile ones being limited to a scattered few around the outside of the cluster.—T.

Azalea rosæflora.—Some pretty little flowering examples of this in Messrs. Veitch's group at the recent Temple show well illustrated the length of time over which the blooming season of this *Azalea* extends, for it will often produce a few blossoms by November and keep up a scattered succession till the spring, when the buds unopened up to then expand rapidly. The fact that flowers of this *Azalea* may be had for six months in the year, and that the blooms are wonderfully pretty and quite distinct from anything else we have are all great points in its favour. This *Azalea* is naturally of spreading habit and far more effective on its own roots than if grafted. In this latter case, if the point of union is 6 inches to 8 inches above the surface

of the soil, as most Continental *Azaleas* are, this forms a little tabuliform head, which is, however, not nearly so pretty as when the plant assumes its natural habit, besides which complaints are sometimes made of grafted plants dying off suddenly. The flowers of this are double and of a pleasing shade of salmon-pink. Besides the specific name of *rosæflora*, it is also known as *balsaminæflora* and *Rollissoni*.—T.

Manettia bicolor.—A well-grown plant of this is very attractive when in flower, whether it be trained round a few sticks or employed as a rafter or screen plant in a small structure. Another point in its favour is that the flowering season is spread over a lengthened period, which remark will also apply to the other members of the genus. *M. bicolor* is a slender growing twiner, with lanceolate leaves and small tubular-shaped blossoms, a good deal like those of a *Cuphea*, their colour being scarlet tipped with yellow. A well-grown plant of this *Manettia* formed a pretty and now-a-days very uncommon object among the exhibits of Messrs. Veitch at the recent Temple show. There are a couple of other species of *Manettia*, viz., *M. micans* and *M. cordifolia*, both of which are well worth more attention than is at present bestowed upon them. These *Manettias* are of easy culture, succeeding well in a mixture of loam, leaf-mould, a little decayed manure, and sand. Good drainage should be given them, as when growing they may be watered freely, and a constant use of the syringe is necessary to keep down red spider. These *Manettias* should be placed in the cool part of the stove or in the intermediate house.—T.

Potting Cyclamens.—I think the reason why many people fail to grow *Cyclamen persicum* is through not potting the plants firmly enough and also through not using the right material for potting. The *Cyclamen* is a lover of lime, not, of course, in its caustic state, but in the form of old lime rubbish pounded up, or even oyster shells, this being added to the compost previous to potting. In potting, press the soil rather firmly, taking particular care that the surface is made perfectly firm, as the *Cyclamen* abhors a loose surface. This is what I find, and *Cyclamens* succeed well with me.—A. YOUNG.

Erica ventricosa.—I consider the forms of *E. ventricosa* amongst the most beautiful plants for embellishing the conservatory and greenhouse for several weeks from now onwards. There appears to be some confusion with their names. If I send for *E. ventricosa coccinea*, *E. v. coccinea minor* and *Erica ventricosa Bothwelliana*, I can get them; but the true *E. v. magnifica* there is a difficulty with. Of this variety, Mr. Tudgey, when gardener at Henwick Grange, Worcester, used to exhibit a splendid plant. It is not, however, as exhibition plants that I wish to recommend the *ventricosa* Heaths, however well adapted they may be for the purpose, but as freely grown little plants.—A. YOUNG.

Tuberous Begonias.—Very good single *Begonias* will soon be selling in the streets at 6d. each. The hawkers' growers are finding that they are not at all difficult to raise from seed, and as a thousand tubers may thus be obtained at very trifling cost during one season, they are potted and sold the following spring and summer when just showing bloom. In $4\frac{1}{2}$ -inch pots at 4s. per dozen, it is evident that for a time there is a little money in them even for the barrowmen. The great growers who turn out their hundreds of thousands of seedlings every year are finding that the price is now coming down, so many people prefer to purchase seed and raise their own. The planting of these so largely in our public parks and gardens has given a special filip to this demand because myriads of persons who knew nothing of *Begonias* before now see them in great abundance and beauty, and have learned to want them also. Thus it is that market growers find it needful to cater even in the most plebeian way to this popular taste. I do not see after all any variety that makes such a beautiful pot plant as does *Begonia Worthiana*, for it is very free and has an elegant habit of growth. The smaller flowered *Begonias* are better

for market than are the big ones of which some growers seem to be so proud when they boast of their 6-inch flowers. I have yet to learn that beauty, grace, or effect is to be measured by inches.—A. D.

Hydrangeas as small plants.—For blooming in the conservatory or greenhouse from spring onwards throughout the summer months the *Hydrangeas* are most useful, especially considering that good plants in 5-inch or 6-inch pots can be secured under twelve months. To produce these, strong cuttings should be inserted now in $2\frac{1}{2}$ -inch pots, these being placed in a close propagating frame to root. Directly this takes place transfer them to cooler quarters, eventually repotting into the size of pot they are intended to flower in, placing them for the time being in a frame. As soon as established, transfer them to the open air, standing them on an ash bed fully exposed to the sun. I leave my plants in the open until the early part of November, when they are wintered in a cold frame and protected from severe frost. Being grown in such small pots, it is necessary to feed them well directly the flower-trusses show.—A. Y.

Gloxinias at Forest Hill.—A good collection of *Gloxinias* is in bloom now in the nurseries of Messrs. J. Laing and Sons, Forest Hill, and the plants are arranged in a low span-roofed house that shows them off to advantage. The varieties are not named—at least very few, but they represent a great range of colours from quite self to finely margined flowers, that make a rich display. One in particular was remarkably bright, the flower neat, not too large and crimson, with a broad, well-defined margin of white. It is fortunate that we are not burdened with names amongst *Gloxinias*, and one may feel certain to get flowers of bold and distinctive colours in a first-class strain. The whole character of the *Gloxinia* has, so to speak, become changed within recent years, and in the proper direction. The plants are compact in habit, vigorous, the flower-stems sturdy and dwarf, and the colours very varied.

GARDEN FLORA.

PLATE 913.

BUDDLEIA COLVILLEI.

(WITH A COLOURED PLATE.*)

THIS most beautiful half-hardy Himalayan shrub, which, I believe, is admitted by competent authorities to be by far the handsomest and most ornamental member of the somewhat extensive family to which it belongs, came to me some seven or eight years ago from Messrs. Veitch and Sons, who, I understand, raised it from seed, but at whose nursery at Coombe Wood it has not proved sufficiently hardy to live through a severe London winter, though it will doubtless prove hardy in either Devon or Cornwall, as it has done with me. Save in planting it against a brick wall facing south, I have never given it any protection. It has never suffered in the least, and has now grown into quite a good-sized bush. It bloomed with me, for the first time in Europe so far as I know, in July of last year, and produced six bunches of its beautiful pale rose-coloured tubular flowers with pure white throat, one of which is most accurately represented on the accompanying plate. Hitherto this fine shrub has only been

* Drawn for THE GARDEN in Mr. Gumbleton's garden at Belgrove, Queenstown, July, 1892, by Miss Travers. Lithographed and printed by Guillaume Severeys.

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SALVIA ...

known to horticulturists who had not seen it on its native hills by a plate in Catheart and Hooker's "Illustrations of Himalayan Plants," in which, however, its delicate beauties are by no means done justice to, as the ground colour is of a much deeper shade of red, which may, of course, be caused by the more powerful Himalayan sun, but the beautifully contrasting white throat is altogether omitted. It is said by Sir Joseph Hooker to abound near the summit of Mount Tonglo, at a height of from 9000 feet to the top (10,000 feet), and is also frequent in the Lachen and Lachong valleys at similar elevations, even ascending to 12,000 feet above the sea level. I hope now that my shrub has begun to flower that it will do so still more abundantly in years to come. It strikes easily from cuttings, but requires to attain considerable age and size before it begins to bloom.

W. E. GUMBLETON.

Belgrove, Queenstown, Ireland.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

RUNNER BEANS—SUCCESSIONAL CROP.—It is not often that the first or early sowing of runner Beans can be depended upon to last until cut down by the autumn frosts, and as this is such a useful crop for producing a late supply, an extra sowing should now be made. Runner Beans are a useful adjunct to the winter supply of vegetables, as the pods can be gathered and sealed down in earthenware jars. Unless the soil should be inclined to be heavy it is best to form shallow trenches, the manure thereby coming more into contact with the roots, the trenches also being more available for holding moisture. In either case, whether the seeds are sown on the level or in prepared trenches, it is essential if the soil should be dry to well moisten the drills previous to sowing, or the seeds may fail to germinate. As a further aid to quick germination, the seeds should be soaked in water for twenty-four hours.

EARLIER CROPS.—Where the seeds have germinated well and the rows are likely to become crowded if all the plants are allowed to remain, the surplus should be drawn out, leaving those which remain from 9 inches to a foot apart, this number producing quite bine enough to carry a heavy crop. As runner Beans transplant readily, that is, if done carefully in showery or dull weather, the best course if any rows are faulty is to transplant to fill up vacancies. The plants should be lifted with a trowel. As soon as they commence to wire, the staking of the rows must be carried out with dispatch, previously well moulding the rows up, especially where growing on the level. For a single row use upright poles, or they may be even trained to string, and if double rows insert the sticks cross-wise, a stake as a support being run along where they cross, so as to keep them firmly secured. In windy districts this is the best form of staking runner Beans.

SUCCESSIONAL FRENCH BEANS.—To follow closely upon the first batches, which are either sown on south borders or on open sunny sites, a successional sowing should now be made—not, however, right in the open, as if the season should happen to turn out dry and sunny, a cooler site must be chosen. An east border is a good position, as being cooler the growth is healthier, the plants are not so liable to suffer from red spider, and the pods do not so rapidly become old. Canadian Wonder, on account of its vigour, is a capital Bean for sowing at this date, and being a strong grower, the rows should be located not

less than 30 inches apart. The site must be deeply worked and well manured, a dressing of burned refuse being also very beneficial to this crop. Draw wide drills quite 3 inches in depth, well moistening them previous to sowing. If seed is scarce, set out the seeds in double rows alternately 6 inches apart.

PLANTING BRUSSELS SPROUTS.—To secure stout plants with stems capable of yielding a good supply of sprouts, it is now time the plants were set out in their permanent quarters. Select an open plot if possible, with the soil in a fertile condition, but yet not over-manured, or the plants will grow much too gross to produce firm and solid sprouts. The soil should also have been dug some time previously so as to have become fairly firm, as a loose root-run is not desirable. If at all loose, either run a roller over it or tread it down. Plants which have been pricked out will lift readily with a good bunch of roots. Do not pull these up roughly, but ease them with a fork. If the plants are ready it is not of much use to wait for a showery time. In dry weather the roots should be dipped into a puddle formed of soil and water, and if any grubs are present add some soot and lime, this making it distasteful to these pests. It is also best to plant in rather deep drills, as after the plants have become established the soil may be drawn around the base, this helping to steady them. On strong land the rows should be quite 3 feet apart, allowing 30 inches between the plants, although for the weaker growers this latter distance, both between the rows and in the rows, is sufficient. On light land, where the plants are not likely to grow so vigorously, the rows may be 30 inches apart and 4 inches less in the rows.

CABBAGE SPROUTS.—These certainly form a most useful second crop, therefore do not cut the heads too low down. After all the main heads have been used clear out decaying leaves and weeds, and if the soil is of a poor nature, give a top-dressing of rotten manure. If the weather should be showery, a dressing of soot or even a sprinkling of nitrate of soda would be sufficient.

A. YOUNG.

HARDY FRUITS.

APPLES—Although very acceptable rains have fallen in various parts of the country, in but few instances have these been sufficiently heavy to clear the Apple trees in the slightest degree of the swarms of aphides which infest so many of them. Very rarely are the trees seen in such a bad plight as they are now in, and the result most probably will be a wholesale loss of fruit, the injury to the trees not being recovered from this season in any case. As far as large old orchard trees are concerned, it is doubtful if there is any remedy that can be applied on a large scale, mere spraying with insecticides being so much wasted labour. Anything to effectually rid the trees of these troublesome insects must be forcibly driven into the shoots, more especially the points, a garden engine, or, failing that, a syringe, being the best implement for doing this work with. Garden trees being more under control ought certainly to be taken in hand, or not a few of them will fail to swell their fruit to anything like its full size. The first proceeding should be to summer prune, all the shoots not wanted for extension being cut back to the fourth or fifth leaf, and this will remove the worst of the aphides. All the prunings ought to be kept from falling to the ground and be duly burnt. A decoction of quassia chips and soft soap is about the safest and best insecticide that can be used, and this can be bought ready for dilution with water, or can be prepared on the place. Most chemists can supply the quassia chips, and 8 ozs. of these with 4 ozs. of soft soap should be gently boiled for one hour in one gallon of water. After straining off this decoction, use it at the rate of half a pint to three gallons of water as a test. If this is not strong enough, increase the strength till it does prove destructive to the insects. An occasional syringing with clear water will further benefit the

trees and serve to keep down insect pests. Caterpillars, though plentiful enough in some places, have been largely cleared off the trees by birds, the latter being more hard driven for food than usual. It is not yet too late to considerably lighten the crops, and rather severe thinning should be resorted to where the fruit is set in clusters. Manks and other Codlins are large enough to use when about the size of green Walnuts, and this is a very sensible way to utilise the thinnings.

PEARS.—Curiously enough, these do not appear to suffer so much from either drought or insect attacks, the leaf rust being the most generally complained of. For this there is no certain remedy, but its spread may be prevented by a timely removal and destruction by burning of the leaves first giving signs of being infested by it. It is very doubtful if the rainfall has been nearly heavy enough to reach the bulk of Pear tree roots, and these must, therefore, be in a drier state than is good for them and the trees. Where the wall trees, and these are likely to be the greatest sufferers, can be watered this should be done. Either very lightly loosen the surface of the border prior to giving a thorough soaking, or else favour the absorption of the latter by means of numerous holes bored with a pointed iron rod. In many instances it would pay well to whiten the surface of the ground with kainit or some other cheap form of soluble potash, washing this in with the water, or if the borders are not particularly poor, a surfacing of newly slaked lime might perhaps do the most good. The surface of the border between vegetable crops and the wall being bare, follow up the watering by a mulching of strawy manure, or, failing this, with ashes. Many trees are more heavily laden with fruit than at one time thought possible, and the thinning out must be persevered with if fine Pears are desired.

PLUMS—These, in common with Apples, are much infested with aphides, and the longer they are left to take their chance the worse it will be for the present and probably next year's crops. The decoction of quassia chips and soap recommended for cleaning the Apple trees is also one of the best remedies for Plum aphids, though if the syringings with clear water, as advised on other occasions, had been persevered with, the trees would now be nearly or quite clean. Crops are very variable, but some of the trees are heavily laden with well-formed fruit. Particularly is this the case with Coe's Golden Drop, and unless this fine Plum is very freely thinned out at once, superior fruit will not be had. Continue to lay in straight young shoots wherever there are naked stems and blank spaces to fill, and stop or prune the rest at the fifth joint.

CHERRIES—It is not often that Frogmore Prolific is fit for dessert by May 20 and Elton Bigarreau only a week later, but they are thus early this year, and from these comparatively early trees it will not be possible to move the nets in time to protect Morellos from the starving birds, which start on the latter on the least sign of colouring—in fact, are carrying away green fruit. If they would be content to merely thin out the fruit a certain amount of good would be done, as the crops are remarkably heavy, and unless hand-thinned, not a few of them will colour prematurely and drop. If fine fruit is desired no time should be lost in snipping off at least one-third of the present heavy crops with a pair of scissors. The borders, though in the coolest position, may also be found drier than is good for the trees, in which case watering and mulching should be resorted to. There is no necessity whatever for laying in the young shoots at this time of year, but if the trees are infested with aphides, treat them to some of the quassia and soap decoction.

STRAWBERRIES.—This season the earliest beds have ceased to give ripe fruit about the time picking commences in other years, but unfortunately the runners are by no means early or plentiful. It ought to be possible, however, to procure enough for layering much earlier than usual, and this should be a decided gain, especially where much value is rightly attached to the first crops the plants produce. Raised warm borders are the best positions

for obtaining quite the earliest gatherings of fruit, and these being somewhat limited in extent, ought not to be given up to any but quite young Strawberry plants. To be plain, these latter invariably yield ripe fruit a few days earlier than older plants, and ought, therefore, to be fruited once only, and after a sufficient number of rooted runners is obtained, be then dug up, a fresh bed or more rows being planted in July to take their place. This season an early opportunity should be taken of layering the requisite number of runners either into small pots, turves, or fresh soil. When these can be detached and planted, dig up the parent plants and crop the ground with winter salading. Strawberries have to be kept very closely netted over this season, even the hard green fruit being damaged by small birds for the sake of the seeds on the surface.

W. IGGULDEN.

PLANT HOUSES.

STOVES.—NEW PLANTS.—This being the time of year when it is generally the custom to send out new plants, a word or two thereon as to culture may not be out of place. When these have been safely received, there is more often than not an immediate desire to repot, so as to hasten growth and otherwise accelerate their progress. This, it should be remarked, is not desirable in the majority of cases. The nurseryman has already done this work for the time being, so as to ensure as good a stock as possible to send out. It will be found better, on the whole, to let these new plants alone. There will, as a rule, be ample root-room for the present. In the course of a few weeks, as soon as the plants have become acclimatised to their surroundings, then repotting may be thought about probably with advantage. It is, however, a mistake to expect too much from any new plant the first season; therefore, if over-potted, its chances of progress will be checked rather than advanced. Propagation has in most cases been carried on as speedily as possible, this often tending to the general weakening of the constitution for the time being. When, therefore, such plants are over-potted, their ultimate success is far more remote. I have more than once seen this to be the case, the plants, as it were, declining rather than increasing in vigour consequent upon a weak root-action. I prefer a small shift to a larger one for all new plants until it is seen that growth has begun in earnest. Undoubtedly an unfavourable impression is frequently made by injudicious treatment in the early stages of growth from this cause; hence the plant in question does not receive a favourable chance.

YOUNG PLANTS.—Any of these which have been propagated this spring should not be allowed to be starved in cutting pots or small pots if struck singly. As soon as they are well rooted another shift will be desirable, and this will in most instances carry them on through the next winter. If such a stock, say, of *Crotons*, *Dracænas*, *Clerodendrons*, *Allamandas*, or *Ixoras* is allowed to get starved in these early stages and the woody tissues become hardened, the further progress this season will be more remote. Many of these will no doubt be required as decorative plants in small pots; therefore the best possible amount of growth should be aimed at whilst still young; this, it should be borne in mind, does not necessitate extra shifts so much as good attention, as long as starvation at the root is guarded against. The most promising of this young stock will frequently, and that with advantage, take the place of older and stunted plants that are more in their place upon the rubbish heap than occupying room to the detriment of more thriving young ones. There is, in my opinion, more pleasure in growing on the plants than in trying to keep them in a good condition when of larger size, besides which these latter occupy so much more room.

PLANTS FOR THE WINTER SEASON.—Every attention should be given to these in due time, so as to ensure a good progress being made before the autumn sets in with its less favourable period for

plant growth. Unless well rooted and established it is next to useless to expect a good return, and a weakly stock only occupies room to no satisfactory purpose. Continue to propagate *Poinsettias* according to the quantity likely to be required; it is much better to have several batches of lesser numbers than too many of one size and height, as far as their use in a decorative sense is considered. Keep the old stools well exposed so as to ensure sturdy short-jointed cuttings. *Euphorbia jacquiniæflora* may still be struck, but after the end of this month there will hardly be time to make even a small plant presentable. *Poinsettias* may always be continued with longer than the *Euphorbia*. Winter-flowering shrubby *Begonias* must also receive attention; those struck about now will be as serviceable a lot of plants as one can desire without being unduly large. *Eranthemum pulchellum*, a much neglected plant, should also be struck now, such a stock like the foregoing *Begonias* being flowered eventually in 6-inch pots.

The fine-foliaged *Gesneras* are splendid subjects for country gardens, but the fogs of London greatly militate against them. Where they have been found to thrive well, they ought now to be growing freely. Rather than keep them in a stove or heated pit, I much prefer, when growing these plants, to plunge them in a frame or pit without fire-heat for the summer months. A steady bottom-heat in which to plunge them will encourage a free growth; this, with the moisture of such a place, just suits them, the plants being kept as near to the glass as possible. Such plants as are grown on from year to year instead of being annually propagated should now be shifted in any desirable case into their flowering pots. The *Apheleandras*, the *Conocliniums*, the *Thyracanthus* and the *Scutellarias* are all cases in point, cuttings, of course, being taken as well to keep up the stock. The first-named of these require to be grown in a stove through the summer, but the three latter will succeed well in a cooler house during the warmer weather. The *Torenia*s, by receiving an additional shift and by frequent pinching, will make very useful late autumn plants. *Gardenias* for late autumn flowering should, if they have made a good growth by this time, be kept somewhat cooler; a greenhouse will suit them, provided the plants are not overpotted or over-watered. These when re-introduced into heat will form a good succession to those plants that still remain in warmth. In favourable places I have seen the *Gardenias* stood outside for a time during the warm months, winter-flowering being the object aimed at.

JAMES HUDSON.

ORCHIDS.

WE have been having some very hot, stifling days, which suited the East India and intermediate house Orchids very well indeed, but hot, dry weather causes some anxiety to those who have a valuable collection of cool house Orchids to care for. During such weather and the hotter days of June and July, the system of culture has a good deal to do with the well-doing or otherwise of the plants. Sun heat has something to do with the foliage turning yellow before its time, but this and shrinkage of the bulbs are also caused by over-flowering. Observe, for instance, an *Odontoglossum* after a heavy spike of flowers has been extracting the juices of the plant for about six weeks. The leaves, of a healthy deep green before the flowers opened, assume a yellowish green tinge, and the bulb, from the axil of which the spike has sprung, will be wrinkled and shrunk. To give relief, I have advised cutting such spikes off and placing them in water in a cool place, but they suffer much more if, in addition to the weight of the spike, they have to bear a much greater heat than they have been accustomed to, and, added to this, a rush of heated air through the house. It is this current of air that does the mischief, and I find both *Masdevallias* and *Odontoglossums* do much better in hot weather when the

front lights are shut and all the ventilation supplied from the top. *Odontoglossums* soon recover from the strain of flowering if they are well rooted and in good sound potting soil; a generous supply of water is also needed. Some Orchids suffer more than others from over-flowering. *Oncidium macranthum*, for instance, produces its great flower-spikes and the blooms open at the hottest time of the year. It is naturally a cool plant, and needs large supplies of moisture in the atmosphere as well as at the roots, and until its spike of flowers has been removed it should have a fair supply of water at the roots. I like to see the surface of the compost in which the plant is growing covered with fresh green Sphagnum. I do not advise repotting cool Orchids at this season, but it is sometimes necessary to repot some and surface-dress others. I think the best time to repot *Odontoglossum crispum* and *O. Pescatorei* is when they have recovered from flowering and made a start to grow again. Flowers of these two may be had all the year round. Others flower naturally at this season. Of such are *Odontoglossum polyxanthum*, a distinct and very beautiful yellow-coloured variety, the sepals and petals heavily blotched with dark brown, and *O. cordatum*, a very distinct species, the sepals and petals yellowish, marked with reddish brown. Another handsome species sometimes mixed up with *O. cordatum* is *O. maculatum*; the sepals and petals are more spotted than blotched. It flowers in March and April, sometimes as late as May. All the above were well represented at the Temple show. *O. Edwardi* we repotted last week, but it has not long passed out of bloom. I cut the last flower-spike for the Crystal Palace exhibition soon after the middle of May. Any other species that need repotting now may be seen to. *O. Harryanum* is flowering in some collections. It seems to do best in nearly an uniform temperature of about 60° summer and winter, and with it there is a group of *Odontoglossums* such as *O. nævium*, *O. cirrhosum*, *O. vexillarium*, and *O. Phalaenopsis*, all of which may be given the same treatment. They should all be now in the cool house. The pretty white *Masdevallia tovarensis* goes with them, and the species of which *M. Chimæra* is the type. These are grown in baskets suspended from the roof glass of the house, and as they are liable to be attacked by red spider require constant attention. We are also repotting a large number of *Cattleyas*, such as *C. Warneri*, *C. Mendeli*, *C. Mossiae*, and others—in fact, a large number of species and varieties may now be repotted, for when the bulk of the flowers has passed away the house is kept closer with more moisture in the atmosphere to promote growth.

I find many amateurs have but one house which they can set apart for Orchids, and at this season it is absolutely necessary that a growing atmosphere should be kept up in the house. *Dendrobiums*, for instance, must be kept moist and in the warmest, lightest position. These and *Cattleyas* when growing require very much the same treatment, but the tall growing *Lælias* and *Cattleyas* are better on the centre stage; *L. purpurata* is apt to get rather a yellow tinge in the leaves and bulbs when placed on the side stages with the tips of the leaves near the glass roof. We keep *Odontoglossum citrosimum* near the glass roof, and it also may be arranged with the *Cattleyas*. This species delights in a light position and plenty of moisture when growing, and it succeeds best in the *Cattleya* house all the year round. Now is a good time to repot this as the plants pass out of bloom. The potting soil is much the same as that used for *Cattleyas*, and we are using rather more Sphagnum in the compost than heretofore. I have seen a number of small plants of *Cattleyas* made up into a large one for exhibition, and nothing but Sphagnum used to pack the plants together, and when left in this state for a time the roots have run into the Sphagnum more freely than they do into Sphagnum and peat together. It is rather curious that two good growers of *Cattleyas* told me that they also had come to the conclusion that the plants made better growth when a large proportion of Sphagnum was used.

Epidendrum vitellinum majus may well be repotted now. Our plants had not been repotted for two seasons, and they are now flowering very well indeed. I have tried them in the coolest, shadiest part of the *Cattleya* house, but they do far better, at least in summer, in the cool house. They should be placed near the glass-roof. The best lot I ever saw was grown on a shelf near the roof where the direct rays of the sun could not touch them. Before any plants are repotted see that they are quite free from parasites of every kind. Scale is troublesome, and causes the pseudo-bulbs of *Cattleyas* to become quite yellow. The temperature of the cool house ranges between 50° and 55° at night, *Cattleya* house 60° to 65°, and the East India house about 70°.

J. DOUGLAS.

TREES AND SHRUBS.

FLOWERING SHRUBS.

Will any person kindly give the names of five or six good hardy free-flowering shrubs (worth growing), and evergreen if possible, to grow from about 12 feet to 15 feet high, and flower in summer; also state when to plant and best soil? Locality, Ireland.—I.

* * A selection of evergreen shrubs reaching a height of 12 feet to 15 feet and flowering during the summer is not easy to make, as there are very few likely to fulfil these conditions. Perhaps the nearest approach to such as are required would be *Ligustrum japonicum* (the Japanese Privet), a freely-branched bush clothed with deep green leaves, while about June or July the blossoms are produced. They are white and plume-like, and very pretty when at their best, but the flowers have the heavy smell of the common Privet. If your correspondent is situated in the more favourable districts of Ireland, *Escallonia montevicensis*, with deep green leaves and a profusion of white blossoms, would be desirable; while *Escallonia Ingrami*, thickly studded just now with bright red flowers, is a beautiful shrub, though scarcely attaining the desired height. The Fire Bush (*Embothrium coccineum*), that flowers about May and June, is, where hardy, a glorious sight when at its best. *Buddleia globosa*, whose inflorescence is in the shape of golden yellow balls, is very pretty and distinct, but at most it is only sub-evergreen in character, while much the same will apply to the different kinds of *Ceanothus*, of which a good representative one is *Ceanothus azureus Gloire de Versailles*. These with the more vigorous forms of *Rhododendron*, and perhaps *Kalmia latifolia*, complete the list of those likely to be suitable for such a purpose. Even if deciduous subjects could be included the choice would still be a limited one, as so many of our hardy shrubs are spring rather than summer-flowering, while the majority do not reach the required height. A good half dozen would be *Genista elatior*, a free-growing, yet very graceful member of the Broom family, and one of the latest to flower of this class; *Philadelphus grandiflorus*, one of the largest and finest of the Mock Oranges; *Deutzia crenata flore pleno*, which is not often quite so tall as the stipulated height, but is a free-growing, free-flowering shrub; *Spiraea arifolia* is just the thing that is required, being a large bold growing shrub, which in June is profusely laden with plume-like panicles of creamy white flowers; *Spiraea callosa*, which often blooms from midsummer till the end of August, has flat corymbs of rosy red blossoms, but is scarcely tall enough; *Spiraea Lindleyana* forms a mass of ornamental foliage about 12 feet high, and during the month of August when this is crowded with large waving panicles of whitish blossoms it is very striking. The Guelder Rose (*Viburnum Opulus*) is a very ornamental, large growing shrub, which if not too early in flowering would be just the thing.—T.

Berberis nepalensis.—Kindly let me know if (1) *Berberis nepalensis* and *B. Bealei* are synony-

mous, and (2) if not, the mode of propagation of each. Two plants I have are doing well, but are being crowded by others, and I fear they do not easily transplant when old as mine are.—J. JENKINS.

* * The specific names of *nepalensis* and *Bealei* are used indiscriminately, or applied only to slight individual variations of the same plant. The latest botanical authorities I believe regard not only these two, but also the allied *B. japonica* as but forms of one species. The mode of propagation is in each case the same, and that is usually effected by means of seeds, which in some districts ripen readily. When the berries are thoroughly ripe, which will not be till towards autumn, the seed should be taken out and sown at once. The soil used should be principally loam lightened if necessary by a little sand and well decayed leaf mould. Whether sown in pots, pans, or boxes, proper drainage must be ensured, and the soil pressed down moderately firm to within about half an inch of the rim. On this the seed may be sown, and covered with about a quarter of an inch of soil. It may then be placed in an ordinary garden frame, and all the further attention needed will be to keep it watered when necessary till the young plants make their appearance. When sufficiently advanced they may be potted off, and as soon as established in pots planted out, or they may be planted direct from the seed pots. Seeds can, of course, be sown in the open ground, but in that case germination is usually very irregular. Even when protected by a frame, while some seeds will come up during the summer after sowing, others will often not start till the following season. Propagation other than that by means of seeds may, where a plant has pushed up suckers (which it occasionally will), be effected by detaching some of the weaker suckers with a few attendant roots, but this is as a rule not a very satisfactory method, as the suckers seldom have roots sufficient to enable them to survive the check.—T.

Planting Rhododendrons.—Will any person kindly let me know when is the best time to plant *Rhododendrons*, and will I be successful in growing them on good fresh loam (limestone land), or must I prepare a peat bed for them? If so, can I mix the peat and loam together, or must I keep the peat by itself? Locality, Ireland.—IRELAND.

* * The best time to plant *Rhododendrons* is during the latter part of the autumn or early in the winter, yet so compact a mass of roots do they form, that they may be moved if necessary later in the season than many other subjects without injury. Peat is by no means necessary to their successful culture (as many people imagine), and this may often be seen by the splendid examples that are to be met with sometimes even in stiff loam. I should have no hesitation in saying that "Ireland" would be perfectly successful in growing them in good fresh loam as stated, except for the two words limestone land, as the *Rhododendrons* are very impatient of lime in the soil. In this case it is difficult to advise, as though resting on a limestone base, there may be a sufficient depth of soil for the *Rhododendrons* without the roots coming into contact with anything of the nature of lime. Where the soil is heavy, it may be rendered more conducive to the requirements of the *Rhododendrons* by an admixture of peat or decayed leaf-mould, that is where lime in any considerable quantity is not present in the natural soil. Where there is too much lime, a bed must of course be entirely cleared out to a depth of at least 3 feet and made up with prepared compost, a proportion of which should be of a vegetable nature. I do not fancy there would be any difficulty with the *Rhododendrons* if they were planted in the good fresh loam, a little peat or leaf-mould being incorporated with that portion which would come into direct contact with the roots.—T.

Golden variegated conifers.—How remarkably fine in colour this season are the golden *Retinosporas* and *Biota elegantissima* and *B. semper-aurea*. This long period of brilliant sunshine has brought out the coloration of these conifers to an extent that I never remember to have seen equalled

at such an early period of the season. By the middle of April they were already in fine colour. Well placed, these yellow-leaved conifers are a pleasing feature in the garden.—J. C. B.

TROUBLESOME WEEDS.

ALL weeds give trouble, but those that form under ground stems or strong tap-roots, that strike deeply into the ground, are especially difficult to get rid of. Bindweed and Mare's-tail are a great nuisance in some gardens, and where they grow among bush fruit it is almost impossible to exterminate them by forking them out. No matter how carefully the ground may be turned over and examined, some pieces of root will be sure to remain, and these will make strong growth in the freshly-stirred ground. A very much better way of dealing with them is to continually cut off the tops from the time they begin to grow in spring. If this is persisted in, the roots, however strong, must in time die through want of nourishment. Immediately the young shoots appear, a sharp hoe, or, better still, a spade should be thrust as deeply into the ground as possible. Simply cutting off the tops will not do, as in a few days they appear again above ground. A friend, whose garden is tolerably well stocked with fruit trees, was much troubled with Bindweed. He made a practice of working round them and taking out a bushel or more of roots every winter, but there was always enough left among the tree roots to give a fresh crop. I advised him to go round weekly and cut in deeply wherever a shoot appeared. He did so, and the effects were plainly visible the following year, the growth being very weak, and by the third year there was not a trace of Bindweed left. Mare's-tail is apt to infest badly-drained ground, but it will increase rapidly in any soil. It is simply impossible to get rid of it by simply forking out the roots when at rest. The roots and underground stems being dark in colour cannot easily be seen, and in light soils small pieces will come up from a depth of a foot or more. It can be exterminated in the course of two or three seasons by inserting a four-tined fork as deeply as possible under the shoots, so as to bring up some inches of root. This must be continued all through the growing time. The common Thistle is very troublesome in some places, more especially in land that is cropped at times with corn. Ploughing and subsoiling will not rid the land of this; the tiniest morsel of root will form the nucleus of a flourishing colony, and where there was but one patch there will be a score after ploughing or digging for two or three years. It has been curious to note the progress of this pest in some fields here that are cropped alternately with corn, roots, and market garden produce. Ten years ago the Thistles occurred at wide intervals; now they have spread all over the space, forming in places dense patches, which exhaust the ground. Every time the ground is cleansed with plough and harrow the roots are cut into small bits, and thus the work of propagation goes on, for these little pieces are too minute for the harrows to grasp. If, instead of trying to extirpate them in this way, the ground had been gone over three times in the course of the season with a four-tined fork, getting it deeply in under the roots, there would be few if any Thistles there now. The Sow Thistle is more easily dealt with, and it makes one tap root that can be dug out bodily. Woe to the garden or field, however, in which this weed has been allowed to seed. One year's seeding will leave a legacy of labour that it will take years to wipe off. A neighbour once allowed a lot of these Thistles to run to seed, and the wind being just right the down blew over to me for weeks. This happened fifteen years ago, and I am not yet rid of those Thistles. The man who allows this weed to seed in his garden or fields ought to be fined, for he thereby inflicts a permanent injury on all around him. The seeds are so light that the slightest breeze carries them about, and neither walls nor hedges will keep them out. Sometimes Dandelions will establish themselves in lawns. The tap roots go down 2 feet into the ground,

and they cannot, of course, be dug out. The best way of getting rid of them is to cut down deeply with a sharp knife, bringing away several inches of root. This will clear them off in the course of two or three years. Chickweed, which is a great pest in many light soils, and Groundsel, which prefers those of a holding character, should never be allowed to come to any size. They both seem to be able to perfect seed even if pulled up as soon as they come into bloom. If, as is sometimes the case, any quantity should come to blooming size they ought not to go on to the rubbish heap, but be at once burnt. Last spring I had the misfortune to top-dress some beds of seedling hardy flowers with garden refuse into which had been cast a lot of Chickweed that had come into bloom, and thousands of young plants came up through the summer, and more are still coming. Charred weeds make capital top-dressings, being, of course, quite free from seeds of any kind. J. C. B.

ORCHARD AND FRUIT GARDEN.

DAMSONS.

WHATEVER credit may be due to a few individuals who lately took a leading part in the agitation for the extension of hardy fruit culture in this country, it cannot be said they were in the van as far as planting Damsons was concerned. Market growers within an easy distance of the metropolis may be trusted to quickly discover what it is to their advantage to grow and act accordingly. Nor are they ahead of their brethren in the west midland counties, and more especially those located in Worcestershire and adjoining counties. All were quick to note that Damsons would be in great and increasing demand, according as the taste for more fruit as an article of diet spread to the working classes, and as far back as 1878 trees were being bought up and planted as rapidly as they could be placed on the market. At that time the Black Currant was the only other fruit that was so closely bought up, and the millions of bushes planted about that time have proved, in common with Damsons, a very good speculation since. Fortunately, the latter are among the hardiest of hardy fruits, being natives of, or, as one authority puts it, "peculiar to England," and they will, therefore, frequently succeed where other kinds of fruit would not do so well. If ever the Continental practice of utilising the hedgerows, including those alongside the roads, for fruit culture is adopted in this country, Damsons ought largely to be planted in these positions. In my boyhood days Bullace trees were plentiful enough in the hedgerows, along bye-lanes and cottage gardens in Kent and Sussex, but these seem to have disappeared, none being planted or saved to take their place. Now these Bullaces are closely allied to Damsons, and where one succeeds the other will not fail. Both are wildings, and the growth of trees of both the black and white forms of the former was largely fostered by the then more common practice of leaving high shelter hedges surrounding the numerous Hop gardens.

In order for Damsons to become well established in hedgerows, they ought either to be planted with the other live material for forming either low or high hedges, or else be set rather back from any of the former at any intervals that may be decided upon, and grown as standards. Unless given this amount of fair play it is not to be expected that they will make good progress, and unless they do spread considerably when in a comparatively young state, there is not much likelihood of their

doing so in later years, the great productiveness of one variety in particular effectually preventing this. Any trees that are to form part of a high shelter hedge should be treated similarly to their neighbours, all being allowed to spread considerably when of sufficient height to form a good screen. Under such conditions Damsons and Bullaces fail less often than they do in more exposed positions, or where they are more liable to suffer injury when in flower from the "Blackthorn Winter." Those that are dotted along closely-trimmed low hedges should have a good clear stem, and be staked up constantly till the stems are stout enough to support a good-sized head. In Shropshire, where Damsons thrive admirably, there are



Farleigh Prolific Damson.

many trees surrounding small paddocks and in many cases fringing the lanes, but I failed to observe when in the locality any young ones coming on to take the place of the older ones. Yet they pay very well indeed during most seasons, the fruit being largely bought up and sent to Manchester and elsewhere. At one time these Damsons were utilised for the manufacture of a dye, but now that preserved fruit is so much in demand, it is doubtful if that is the use they are put to now-a-days.

Where associated with other trees, as in the home counties, the position usually assigned Damsons is the outsides or more exposed quarters in the orchards, and this for a twofold reason. They are hardy, of somewhat dense growth, therefore affording some shelter to the less hardy kinds, while the extra exposure serves to retard flowering somewhat, and which is sometimes, if not always, a gain. It is spring frosts, and which, strangely enough,

really appear almost certain to be severe just when the Black Thorn is in flower, and bullfinches that Damson growers have most to fear, as it is very rarely indeed that the trees fail to flower well. When there is but little bloom, more often than not this is due to the depredations of bullfinches. The cultural details are of the simplest character. Purchase either trees with clear or feathered stems, the latter being preferred by many owing to the side branches, and which have been trimmed off in the case of clear stems, continuing to assist in the swelling of the stems and also bearing fruit freely till such time as the head overshadows them. Plant in soil sufficiently deep and good to give the trees a good start, and prune often enough to lay the foundation of a large well-balanced head. In after years little or no pruning, beyond thinning out the branches of the Shropshire variety and occasionally foreshortening some of the rest, is needed. They soon arrive at a free-bearing, profitable state, and plenty of ways and uses will be found for the fruit when ripe.

Farleigh Prolific, also known as Crittenden and Kentish Cluster, is the variety that has been much the most extensively planted of late years, this being by far the most prolific sort yet distributed. It is said to be a wilding, its good qualities having been first recognised by Mr. James Crittenden, East Farleigh, Kent, after whom it was named. The illustration accompanying these notes conveys a fair idea of the great productiveness of this variety, and when a tree is similarly heavily cropped all over, it is no uncommon occurrence for some of the limbs to break down. The quality, especially when the crops are heavy, is only second-rate, but that apparently is only a secondary consideration, the prices obtained for it being only a little lower than those given for fine samples of Shropshire or Prune Damson. The latter forms the larger trees, growing very freely in a young state, and only the very oldest trees ever rival the Farleigh Prolific for productiveness. As a rule the fruit is large, somewhat oval in shape, and when fully ripe of excellent quality. Common or Round Damson is smaller than either of the preceding and fairly productive. Very few of it are planted now-a-days, and the White Damson is also becoming scarce. Rivers' Early is said to be early and good, but I have never grown it.

W. IGGULDEN.

Relative merits of early Strawberries.—Whitsuntide has brought us this year ripe Strawberries in good numbers out of doors, and this is worth recording as being something quite out of the common in Suffolk. Now as I write (May 22) I could pick dishes of Noble, John Ruskin, and Vicomtesse Héricart de Thury, all from young plants put out thickly on a south border. Noble was the first to show colour, being two days in front of John Ruskin. The latter, however, has overtaken it, and there is now nothing to choose in the matter of earliness between them. Vicomtesse is a couple of days behind, but each sort has some special advantages over the others. Noble has the finest fruit and by far the heaviest crop, the bed presenting quite a picture, and it is very evident that this variety does best as one-year-old plants. The fruit is very handsome, but a little soft, so should not be grown very extensively for packing. The flavour is not quite first-class, though quite as good as many other favourite kinds. John Ruskin is no better in flavour and its crop is barely half the weight; the fruits are of good average size, conical in shape, and apparently very firm. I believe this was sent out as the earliest of all Strawberries, but the gain in this way is very slight, if any. The good flavour

and other qualities of the Vicomtesse are now so well known, that it is needless to do more than mention them, but those who put flavour before other qualities ought to grow this largely for early as well as general purposes, and in its season I have found none to beat it.—J. C. TALLACK.

Watering Vine borders.—No doubt this is a subject requiring much attention, but in no way can it be satisfactorily done without taking into consideration local circumstances. A border in one locality may require weekly, or at least fortnightly soakings of water, whereas another may not require such a drenching for two months. It is surprising what a quantity of water Vines growing in light soil will appropriate, and with advantage to the crops, but in heavy retentive soil the case is different. Perhaps of all Grapes Muscat of Alexandria is the most variable in this respect; too much water at the roots has an injurious effect when the soil is at all heavy. This Grape is far more partial to sand than any other kind of soil, as anyone may see by putting on a layer next to the surface roots where the border is composed of heavy soil. I have known seasons here when the inside border of the Muscat house was watered but three times during the whole season of growth. The Grapes were even then of good quality.—E. M.

EARLY PEACHES.

THE remarks made in last week's GARDEN respecting early Peaches recall a suggestion broached, I think, last season whether, except in the case of Hale's Early, we had gained very much by the introduction of the early American Peaches. There seemed an inclination to reply in the negative. Our first early English-raised Peach, Early Beatrice, is certainly not A 1 in point of flavour, but it is quite as good, and perhaps a little better than Amsden June, Alexander, or Waterloo. It is a certain cropper under glass, which can hardly be said of two of the Americans. It colours up beautifully with a fair share of sun, and makes a really handsome dish. "Its size will always be a drawback," is a chief argument brought against it, but I am inclined to think we are sometimes partly responsible for this in cropping somewhat heavily in the desire to get as many early fruits as possible. Personally, such has been the case. This year with the prospect of only a moderate demand the tree only carried a thin crop, and I have had some very fair fruit quite as large, allowing for the difference in shape, as Lord Napier Nectarines. Our next, Early Louise, needs no apology; it is most decidedly a better Peach than any of the Americans. I have only seen it occasionally under glass, but it was invariably doing well. Outside it is a handsome fruit of good flavour, ripening with me from ten days to a fortnight after Beatrice and a little before Hale's Early. Early Alfred and Doctor Hogg are two second early Peaches, and it would not be easy to choose between the two; both are very good, Dymond following close behind them. This is unquestionably one of the very best all-round Peaches either for in or outdoor work. Early outdoor Peaches are likely to be a very good crop. Beatrice and Hale's Early are showing well, and so is Early Crawford. The adjective, however, in this case, as with Early Alfred, is clearly a misnomer, Crawford being only a week earlier than Royal George. It is, however, an excellent second early Peach of large size and good quality, a heavy and consistent cropper, and of good constitution. With the exception of Hale's, I have not tried the Americans out of doors. Three trees of Alexander were ordered, but at the fruiting season, after waiting patiently and wondering when the new Peach was going to finish, I found that instead of Alexander I had Alexandra Noblesse. Possibly other readers may have had a similar experience. The earliest Nectarine, Lord Napier, is carrying a fine crop. This, I suppose, will have to play second fiddle in point of earliness to the new Rivers' Early, but for size and cropping qualities it is hardly likely to be beaten; indeed, the dish staged

by Mr. Wythes at the Temple show held its own both for size and general appearance when side by side with Mr. Rivers' latest good thing. The advantage claimed for the latter, however, in point of season should render it a splendid acquisition where very early fruit is wanted. Peaches and Nectarines, in common with all outdoor wall trees that were carrying good crops, received a rather heavy mulching of good manure in April, and, as the weather has turned out, I am very glad it was put on thus early. Without it, trees would have fared badly on our light, dry soil, and there are no facilities for watering on a big scale. Green and black fly are very troublesome, necessitating frequent applications of some form of insecticide. Roses, especially on walls, have also required copious washings to keep them fairly clean. E. BURRELL.

Claremont.

Apple Worcester Pearmain.—I grow a good many trees of this Apple, but not on account of its high quality as a dessert fruit. I do not think anyone can say it stands high in point of flavour, but no other variety that I am acquainted with has such a showy appearance either on the tree or the dinner-table. For its grand looks I think it is mainly grown. Certainly there is no Apple that will command the same price at that time of the year. No matter how plentiful Apples are, the Worcester Pearmain will sell. Last year plenty of fruit of other sorts was being sold for 3s. per bushel, and no difficulty was experienced in obtaining 7s. for Worcester Pearmain. Now-a-days it is more a question of appearance than of flavour. The man that grows for market must study what sells the best. While he is trying to educate the public taste to superior-flavoured kinds, someone else steps in and pockets the cash. Good-flavoured Apples in September are not numerous.—E. MOLYNEUX.

The earliest Cherries.—Writing from Mar-seilles, Mons. Paul Girard states that on April 16 of this year the earliest ripe Cherries gathered there were of the kind named "Guigne Lamaunie." On April 24 ripe fruit of the "Guigne Précoce de Mathère," recommended by Mons. P. de Mortillet, was gathered in large quantities and sold well. At the same date, the "Précoce d'Annonay" was ripening its fruit, the quality of which is somewhat inferior to that of the preceding kinds. To these succeeded the "Bigarreau Jaboulay," the "Guigne jaune d'Orleans" and the "Griotte Belle de Lorraine."—*Revue Horticole.*

Weight of crop for Peach trees.—To a certain extent it depends upon the health of the tree what weight of crop ought to be left on a Peach tree, whether growing in the open air or under glass. A fruit to every 9 inches, or, if extra fine fruits are required, 12 inches, is quite sufficient. A tree which is in good health is capable of carrying the quantity of fruit I have stated, but even if it is desired to leave a less number, there will not be any increase in size. Trees with a light crop of fruit have a tendency to take on a gross or unfruitful habit. Trees allowed to carry a fair complement of fruit may be looked upon to do the same annually. With the trees in good health and also kept amply supplied with water, the fruits should be thinned down before stoning commences, this preventing the unnatural strain upon the trees' health. Of course, a few extra fruits may be left, as when the second swelling commences, it will be seen at a glance which fruits are likely to take the lead. Others which are not so quick in swelling off, even if thinned down to what may be considered the orthodox number, never reach the size of those which take the lead.—Y. A. H.

Strawberry plants.—It is most unusual to see plants in pots fruiting in houses a fortnight after fruits have been gathered outdoors, but those growers who have a superabundance of plants, which they would not otherwise trouble to place under glass, now find their value and are fruiting them to the utmost, because the outdoor crop threatens to be a very short one. Even on stiff,

holding soils the crop must be very moderate, but where close on gravel, then are all old plants giving very indifferent promise. It is not at all improbable that many growers will this season wish they had fewer of these old breadths and more of young ones. It is the latter that are giving, so far, the best results. They have soil that is at once more fresh and fertile, they are more deeply rooted and have stronger foliage, so that they can more easily withstand drought than can the three-year-old breadths. No doubt the putting out of one-half the entire Strawberry plants every year involves some labour, but where that practice is adopted, there are the growers best off now. It does not pay to allow breadths to stand over three years. But the exceeding aggregation of crowns which invariably results in the third year is often more productive of leafage than of fruit; whilst this year it has resulted in the production of very little fruit. Old plants have a tendency also to lose their lower roots and become dependent on those thrown out from the surface, where in very dry seasons they find little nutriment or moisture, for thorough soakings can rarely be given.—A. D.

FLOWER GARDEN.

NOTES FROM A NEW ZEALAND GARDEN.

LOOKING back over some old volumes of THE GARDEN, I find that a good many years have passed since I have troubled its readers with any experiences of mine, and now on reading an article by "F. W. B." (Oct. 4, 1884) indicating his desire to know something about the experiences of Daffodil growers abroad, I am moved to record, if you think well of it, with as much care and minuteness as a somewhat limited leisure may allow, my own experience during the coming season, for I presume Daffodil growing is as interesting now as it was nine years ago. I am going to begin at the very beginning, as you will perceive when I say that so far there is nothing visible in the shape of a Narcissus (April 18) except the grass of the common Jonquil (which began to make its appearance this year in the last week of March) and a few rather weakly blades from a clump of Chinese Polyanthus Narcissus planted out of season some three years ago. But below the ground there is a goodly store of healthy bulbs, which will show their quality in due time. I should not consider anyone a Narcissus enthusiast who does not feel an interest in all stages of the flower. A firm bulb gives me as much pleasure as the smell of the flowers, and the sight of the grass breaking the soil and lifting it up on its back, and of the spear-heads of bloom pushing up an inch a day is hardly less delightful than the sight of the flower itself.

All my experience goes to persuade me that this soil and climate admirably suit most kinds of Narcissus. For an amateur, I introduced myself a good number of new varieties from year to year, and assuming the bulbs I receive from England or Holland to be average-sized bulbs as there grown, I can only wonder at the large size reached by most varieties grown here under anything

like good conditions. Whilst I mention this matter of importing varieties I should like, in the interest of bulb growers on this side of the world, to urge bulb merchants, if our trade is worth having at all, to despatch orders to us as soon as their bulbs are ripe and housed. No doubt the orders of amateurs are likely to be modest in money value, like my own. But if the orders are executed at all, it should be done just as punctually as if they were large orders. If one orders Fritillaries and Erythroniums, which bear transmission badly at the best, why should they be delayed till they are rotten that Tigridias ordered at the same time may be sent along with them? It ought to be clear to bulb merchants that it is impossible to send Fritillaries and Tigridias to the colonies in the same parcel with any chance of growing the Fritillaries successfully. Spring bulbs, except Anemones and Ranunculi, which apparently may be planted at any time over a long season, should be shipped or posted for the Australasian colonies by the middle of September. They would then arrive at their destination about the beginning or middle of November. The chances are that, if well packed, they would arrive as plump and firm as when they left the store, and if at once properly planted, they would probably give a fine show of bloom shortly after planting. Such at any rate is my belief, founded on some little experience. I do not think THE GARDEN often records the views of plant importers in these colonies, and yet I cannot but think that if seedsmen and plant merchants here and in Australia were occasionally to state their experience, it would be found very useful by seed and plant exporters at home.

Returning to the Narcissus, I have only to say that where a spade has chanced to reveal what is going on amongst the bulbs underground I have remarked splendid root formation and beautiful white cones pushing up for Grass. I have done very little in the way of transplanting this year, though most years, by reason of the quick increase, a good deal of transplanting has to be done.

I should like to mention what seems to me an extraordinary development of the *Lilium auratum* in this garden. My stock is all derived from a single bulb and now consists of several clumps. The largest of these clumps has occupied its present position for several years, perhaps five or six. The last two or three years the stems have been very large and strong. Last year there was one stem—a fasciated one—on which I counted over eighty blooms. This year no single stem produced so many blooms, but there were five stems each bearing from forty to fifty blooms. The pips on these stems all opened, though they were very crowded. I cannot say that I altogether approve of these monsters. I prefer a long graceful branch with fifteen to twenty-five blooms, each pip having plenty of room to display itself. I should be glad to know from any of your correspondents whether such growth in the Golden Lily is very common. The clump I speak of has had no manure of any kind

all the year. This Lily is perfectly hardy here, although in some winters the frosts are pretty severe. A. W.

Dunedin, April 18.

Double Violets.—In one of those fields devoted chiefly to the production of hardy plants for market I saw a few days since several thousands of double Violets, in spite of the weather, doing well because kept frequently watered. The sorts are those in ordinary cultivation, white, mauve and blue, and are as much grown to meet the needs of the best class trade as any other. There is little trouble taken in the production, and yet by October next every plant will be stout, strong, full of leafage and bloom-buds—in capital condition for planting on beds or putting into pots. The rationale of cultivation is simple. When the plants are lifted for sale in the autumn they are carefully trimmed of their side shoots or runners. These are then sorted and the best dibbled up thickly into frames, where they remain until April following, and then carefully lifted, so as to preserve the tiny roots, are dibbled out into good ground in rows 12 inches apart. If the weather be, as this year, dry, plenty of water is given until good root-hold is secured. Afterwards they can very well take care of themselves, but frequent waterings, if the drought continues, help to preserve the foliage from the attacks of spider or thrips. The plan results not only in the production of sturdy plants, but also in compact clusters of roots, and these, carefully lifted and preserved, suffer little when sent away thickly packed in shallow boxes by rail. Single Violets receive similar treatment. In foggy seasons Violets suffer severely, and doubles especially would die wholesale were they left all the winter exposed, but through the method adopted of keeping the runners in frames, the stock is preserved.—A. D.

Pink Her Majesty.—This is devoid of the green centre which Mrs. Sinkins has, and it does not split, as does that kind. When Her Majesty becomes better known it will be much sought after. It appears to me to be a good grower, giving plenty of grass. I am afraid it lacks one charm, namely, scent. I notice the blooms now open possess but little. Have other growers noticed this?—J. CROOK, *Forde Abbey*.

Primroses and dry weather.—I am afraid these charming spring flowers are having a sorry time of it. I noticed some Primroses in sunny spots were drying up during April. It will be interesting to notice when next spring comes round how this affects their blooming. Here we grow a large quantity of the bunch kinds, raising some from seed every year. We grow these in almost every kind of situation. This year we found those growing on a north border by far the best. But even these in this cold place we have been obliged to water many times during the eighty days we have been without rain.—J. C., *Forde Abbey*.

Carnations at Coombe Warren.—It does seem to be very remarkable that fully two months prior to the date fixed for the National Carnation Society's show, plants kept in frames all the winter and stood in a greenhouse in the spring without the aid of artificial heat should not only have been blooming for a month previously, but should now have to be turned out to make room for another batch from outdoors, where even it seems difficult to keep the plants in check. So early, indeed, are all outdoor plants at Coombe Warren, that every one bids fair to be in full bloom before June is out, and it looks also as if under no possible conditions could there be any Carnation blooms so late as July 25. The very fine lot of plants which Mr. Woodgate has in pots at Coombe Warren—some 1000 in number—is in bulk propagated seedlings, and of a highly meritorious as well as varied character. All the best have had local names given them, and some day they may become more widely known, but the fact remains

that by first starting with the produce of a few naturally produced seed-pods of named varieties, then later intercrossing some of the best of the progeny, a varied and charming selection of seedlings, selfs, fancies, Picotees, flakes, &c., has been secured. All the largest plants of two years' growth are now over and being turned out doors, planted in good loose soil, somewhat on their sides, and then at the earliest opportunity layered. These of course give very fine-rooted plants early, and are valuable for the successional blooming. Those now in 6-inch pots get a shift later into 8½-inch pots, and so are grown on outdoors until placed in frames for the winter. Fully 1000 plants have to flower outdoors also, some of which are seedlings. Mr. Woodgate treats his Carnations as thoroughly hardy plants in the winter, and as a result suffers little from any disturbing causes.—A. D.

HARDY PERENNIALS FROM SEED.

It is a matter for surprise that seedsmen—especially those who make the culture and sale of hardy plants a speciality—do not issue special seed lists of these things. If we look over any ordinary flower seed list, we find hardy and tender, annual, biennial and perennial plants intermixed, having only the pretext for this arrangement that they come alphabetically. Why there should not be found more exact classifications, according to nature and endurance, such as tender annual and hardy annual, or biennial or perennial, it is not easy to understand. In looking over one of the leading hardy plant lists issued, I find attached to a few things, seed so much, but still to very few all the same. Either many of our hardy border plants do not seed, or it is too much trouble to save it, or else the trader does not care to advertise seed lest it should destroy the sale of plants. Presuming such a notion exists, it is but right that it should be combated by the publication, so far as possible, of lists of good hardy perennials, herbaceous and otherwise, that can be obtained with comparative ease from seed. This subject may well have special present interest, because just now is an excellent time to sow many of these things, and if seed be good, stocks of hardy plants in great abundance may soon be raised. I have made what is, perhaps, but a moderate and a common selection. Others could add materially to this list, especially in relation to varieties not so well known, and of which there are now many.

Of course, single flowers seed most freely, doubles less so, as in the case of Pyrethrums, for instance, but here we have a beautiful family of hardy plants which can be obtained from seed with ordinary care. Whilst few may care to take much trouble to save seed, except growers for that purpose, especially that all flower stems are so much better removed from plants so soon as flowering is over, at least all may purchase seed, and in so doing secure greater, if not better variety than they already possess. Just culling a few plants alphabetically, we start with *Aubrietias*, the best of which, such as *violacea* and *Leichtlini*, and no one wants inferior sorts after these, seed fairly freely. Seed should be sown at once to give strong blooming plants next spring. *Auriculas*, as all know, seed fairly well, especially of the harder border forms. Seed of these should be sown at once in shallow pans, and be kept covered with Moss until germination results. That is always irregular, especially when the seed has been wintered. *Aquilegias*, again, are very free seeders, and are very hardy. Seed saved from some of the best hybrids usually give better results than come from pure species. Sown now in pans or beneath hand-lights, an abundance of plants will soon result. High-class Carnations do not seed freely at home, except where grown under glass. Did the present dry weather continue through the summer, whilst Carnation blooms would doubtless be small, there would probably be a good crop of seed. We can, however, purchase imported seed of various forms or strains, and if sown at once in boxes or pans under glass or out in the open

ground and kept shaded and watered, they will soon be plenty of plants for putting out in August to bloom next summer. Whilst all the forms of *Coreopsis* are charming, those of the perennial type, such as *grandiflora* and *lancoolata*, are of particular beauty and usefulness. These seed freely and should be sown at once. Of all hardy border plants, few are nobler or more effective than are *Delphiniums*—all free seeders. These have the merit, too, of giving from seed as good as the parents—that is, at least, the present condition of the *Delphinium* family; later, perhaps, when perfection has been reached, seed progeny in general may deteriorate. Seed sown now will give plants to bloom next year, and these will endure for a long time after. Did *Delphiniums* not flower, their fine clusters of foliage would still make them useful. Geums of the diverse forms now found furnish seed and are easily raised. So, too, is the *Gypsophila paniculata*—not a striking plant, but when in full flower most useful to all who want to dress vases. I was the other day in a garden where literally hundreds of this plant were being put out, having been raised from seed. I fear there will be some disappointment at the product later. There is a large family of the perennial *Chrysanthemum*, most valuable for border decoration, all readily productive of seed. Such varieties as *maximum*, *latifolium* and *uliginosum* take high rank amongst hardy perennials. Some of the *Campanulas* also, such as *pyramidalis*, *persicifolia*, *urticifolia*, *grandiflora*, *Mariesi*, &c., will come readily from seed, which should be sown at once to secure stock for putting out in the autumn. I find I had overlooked a charming hardy plant in the Prophet Flower (*Arnebia echioides*), which is not half known yet and comes from seed freely also. What a fine family of border flowers have we, too, in the *Helianthus*, *Helenium*, *Rudbeckias*, &c., some of which give seed, though not abundantly. Several forms of the *Lychnis* family also come well from seed, and very lovely they are. The striking *Lupines* all seed liberally and are easily raised. Many of these are just now remarkably effective in gardens, and, once established, will long endure. Then there are all the members of the perennial *Lathyrus* family that can be got from seed. If this be sown now, plenty of plants will result for putting out in the winter, and they will become of great size in two or three years. *Pinks*, *Polyanthuses*, *Primroses*, *Pansies* are all popular garden perennials, and all to be got from seed with the greatest ease. *Pink* and *Pansy* seed may be sown at once outdoors, but *Primrose* and *Polyanthus*, as it is rather late, will be better sown under glass to push the plants on. Perennial *Phloxes* also come readily from seed, almost as good in quality as are the best parents. It is wise to sow seed in boxes under glass and keep it cool and damp, as the shell enclosing the germ is somewhat hard. Poppies of the giant or perennial type are very easily raised from seed, and so also are *Pyrethrums*, especially the beautiful single forms. The fine *Verbascums* also seed freely. These are but a few from a huge list of good perennials that may be readily propagated from seed, and through which aid many an otherwise comparatively bald garden may be rendered beautiful, not merely for one year, but for many. A. D.

Veronica prostrata.—All plants that exhibit a tendency to withstand drought should be made note of. This *Veronica* appears to be worthy of some attention for the profusion of its blossoms under what is to many hardy plants a trying time. At the present time this variety is in full bloom on the rocky, where it has received only its share of the scanty supply of rain which has fallen since the first week in March. From the profuse manner in which the plants are flowering, it would be hard to realise that we have had so little moisture.—S.

Antirrhinums for bedding.—These are deservedly coming to the front, for what can produce such a mass of flower at so little trouble? I have grown for several years a variety with white flowers, very compact in habit and free blooming.

It commences to open its flowers early in May and continues without intermission until the end of October. I am growing this year a charming yellow variety and two others, one dark and the other light red, all from cuttings—a method I find superior to raising the plants from seed, as so much more dependence can be placed on the height the plants grow from cuttings. Far superior in every way are *Antirrhinums* to *Geraniums* for filling beds or borders in the summer, and infinitely less trouble during the winter and spring. If the plants of the white variety are allowed to remain all the winter, they throw up much larger spikes of bloom the following May.—E. M.

NOTES ON HARDY PLANTS.

Vaccinium hirsutum.—This is a North American species, with woody, semi-erect branches. The plant, so far as I have proved it, is but 9 inches or 1 foot high, of a very pale green colour, owing to its hirsute or glandular character. The flowers are disposed in rather long racemes under and from the axils of the leaves. They are white and rather large for the genus; each tubular flower will measure three-quarters of an inch long. It strikes one as a characteristic little shrub suited for the moist places of rockwork. I have found it quite hardy during last winter.

Xanthorrhiza apiifolia is another somewhat shrubby dwarf species adapted for a similar use to the above. In a way it is half shrubby and half herbaceous. It is known by the name of the Yellow Root, as implied by its name, and not only are its roots yellow, but its new shoots, which spring up freely sucker fashion. The foliage is prettily cut, and the plant gains in interest when it is seen to produce dark purple *Ranunculus*-like flowers. Our American friends tell us that this is a very conspicuous plant in the autumn, owing to the change of colour of its leaves to bright orange. Small fruits succeed the racemes of curious brown flowers in the case of fertile plants, and these remain a long time. I have not proved this personally, and I could imagine that a deal may depend on weather conditions, and possibly the plant may never colour or fruit in this country as it does at home in the more Southern States of North America.

Papaver alpinum.—As I believe I have stated before, this plant not only sports in the various colours of yellow, red and white, but it is to be had in shades coming between. Not only has this pigmy species departed from its more typical colours, but the form of its flowers has become more cupped, owing to the imbricated character of the petals. The reader may imagine this little species of but 4 inches or 6 inches high, with flowers of the richest colours, quite the size of a crown piece, and it will be no difficult matter to believe that, grown in groups, it must be one of the gayest of alpine.

Lithospermum purpureo-ceruleum.—This if left to have its own way may be even more than disappointing; it may prove an annoying plant. With such treatment as I have bestowed on it for three years, I find that it responds invariably by producing a grand show of flowers. I believe it is the natural habit of the plant to bloom sparsely, and sometimes not at all. It has the habit of making long bounding stems 2 feet to 4 feet long, their ends becoming rooted and young plants forming. These may be termed stolons or unfertile growths. I speak of these because it is by removing them that I get plenty of blossom on short stems a foot or so in length. Now when you see this plant with a dozen or so of fertile stems all topped with magnificent clusters of deep purplish or almost true blue flowers, you may justly compare it with a large specimen well grown of the rarer *Lithospermum Pastori*. But as already hinted, if you neglect to remove the long unfertile growths the plant will go on in a weedy fashion, forming rope-like stems, and it is only when you take advantage of the vigor of the species by diverting it from the production of foliage to

flowers that you render the plant a really beautiful garden object.

Anemone baikalensis.—This may be but a geographical variety of *sylvestris*, and I have heard many remark that growers fail to find any distinction whatever between the two plants; when, however, they are seen grown side by side there are differences, if but slight. The flowers of this are more paper-white than those of *A. sylvestris*, and outside there are pink stains. On the other hand, they flower about the same time, and they have both the disagreeable habit of making a great amount of sucker growths. This form or the name has been confounded with *A. baldensis*, but the latter is a widely different thing, and a vastly superior flower, and it is much more nearly related to, and in fact is grouped with the *Anemone alpina* section.

Lychnis alpina lapponica.—If you let the seeds of this plant fall on a little soil that is kept free of weeds, a natural group, than which nothing can look more brilliant in early May, will be formed. The plants are better if well thinned out, then each one sends up numerous spikes the second year. The stature of the plant with me is 4 inches when in flower.

Phlox canadensis.—A neighbour of mine has had a plant of this nearly 2 feet in diameter only two years old from a mere cutting. For a month it has been smothered with its clear mauve flowers, and the perfume was no mean feature. I see many alpine collections, but why this is not more commonly included I cannot say. It cannot be, I think, because it is not strictly an alpine, for scores of things in alpine collections are not natives of mountain habitats. A sweeter or showier plant I could not name for the month of April. Last year in these columns I spoke of the plant, and an American correspondent wrote me that he thought from the description my plant was not the true *canadensis*, but *divaricata*. If there is ought in this I should be glad to know what the distinctions are. J. Wood.

Woodville, Kirkcaldy.

Iris spuria A. W. Tait.—This is a very distinct and pleasing variety. It is free, graceful, and the flowers are of a soft lavender colour. An *Iris* well worth growing for its delicate colour.

Alyssum or Vesicaria.—Is not the plant figured in *Botanical Magazine*, t. 139, and alluded to by Mr. Brockbank as *A. utriculatum* at p. 417, better known under Lambert's name of *Vesicaria utriculata*? In general effect the plant resembles *Cheiranthus alpinus* or *C. ochroleucus*, but it grows more freely, and blooms in March or April. It is readily known from most other crucifers by its large rounded inflated or bladder-like fruits. Easily raised from seeds or cuttings.—F. W. B.

Two beautiful Rockfoils shown in the collection of hardy flowers from Mr. T. S. Ware at the Temple show were *S. lantoscana superba* and *S. aizoon rosularis*. The former is the finer of the two and a charming variety, especially when several plants are put thickly together in a large pan. The flowers are pure white, arranged closely together and remarkably pleasing. The *Aizoon* variety is quite as free and dense, but the flowers are not so pure. For growing in pots, these *Rockfoils* may be made special note of, and they are easily grown, requiring a light, thoroughly well-drained soil and a fair amount of sun. It is a pity that more use is not made of such hardy flowers for the greenhouse, where they make a change from the ordinary run of things.

Pyrethrums at the Temple show.—One of the most striking features at the Temple show was the *Pyrethrum*, of which there were many fine varieties. It seems that a reaction has taken place as regards size, the flowers being much smaller than usual, but of decided self colours. It is these that one wants in a garden, not merely big blooms from which all grace has been extracted. A note in *THE GARDEN*, May 27 (p. 432), draws attention to the variety *Jubilee* of Messrs. W. Balchin and

Sons, Hassock's. This was shown well at the exhibition, and it is of the type one would like to see get more numerous. The flowers are not large, but neat, and intense crimson, a rich self colour, peculiarly brilliant when seen in a mass. The exhibit of *Pyrethrums* from Messrs. Harkness was noteworthy. The flowers were, as a rule, much larger than usual, and great similarity existed among them. It is important not to give names to things too near each other to warrant such distinctions. Bruce Findlay, Mrs. Bennett, and Rosy Morn were all of a rose shade—a lovely tone. Several very fine kinds occurred in the large number of stands from Messrs. Kelway and Son, Langport. We singled out three double varieties as especially worthy of notice, these being *floribundum plenum*, rose; Evelyn, of a rosy shade also; and *Aphrodite*, white, a fine double flower, very useful for cutting.

THE BELLADONNA LILY.

(*AMARYLLIS BELLADONNA*.)

THIS is one of the many beautiful bulbous plants which have been introduced into our gardens from South Africa. It was grown in Portugal in 1712, whence it was brought to England and cultivated as the *Narcissus Lily*. In 1804 it was figured in the *Botanical Magazine* under its present name, and Brazil was then suggested as its native country. At that time the plants were grown abundantly in Italy, and sold under the name of *Narcissus Belladonna*. There is no doubt now of the native home of the *Belladonna*, as it is found wild in plenty in the south-west part of the Cape, and in no other part of the world, although it is cultivated wherever gardening is practised. There is considerable variety in the form and colour of the flowers of the plants of *Belladonna* grown in gardens.

There is but one species of *Amaryllis*, and that is the *Belladonna Lily*. All the other so-called *Amaryllises* are either *Hippeastrums*, *Nerines*, *Sternbergias*, *Vallotas*, *Sprekelias*, or *Zephyranthes*.

CULTURE.

At Kew the *Belladonna Lily* is grown in a narrow border at the foot of a wall on the south side of the Orchid houses. This wall gets warmth from the heat inside the houses, and this, no doubt, is greatly to its advantage. The border is 2 feet deep, and is made up of about 6 inches of drainage, with turves of loam covering this, the whole filled up with three-fourths good loam, one-sixth leaf mould, and one-sixth manure. The bulbs are buried 6 inches below the surface, and when first planted they were placed about 9 inches apart each way. Immediately after flowering is the most favourable time for planting fresh bulbs or transplanting established ones. If I had to buy bulbs to start with, I should get them from reliable dealers in July or August, plant them in pots to flower, and as soon as the flowers were over, turn the bulbs out into the border prepared as above. Good flowering bulbs are easily obtained. Large quantities of bulbs are annually imported from Holland and elsewhere for planting in pots to flower in greenhouses in England, and in many cases these bulbs are thrown away after they have bloomed. But wherever there is a warm wall belonging either to a greenhouse or dwelling-house, these bulbs may be planted, and they will make a fine display every October when once they are established. I have never heard of the *Belladonna* thriving out of doors in the north of England, but in the south and west the plants succeed thoroughly under proper treatment. Even here, however, they will not flower if planted in an

open border, however sunny, nor yet against an ordinary boundary wall; they must have the heat of a wall kept warm artificially on the other side, and the warmer the wall the better the plants will flower.

The foliage pushes above the soil early in the year, and as a good leaf-growth is essential to good flowers, the leaves must be protected from frost and cold winds by a covering of leaves or light manure. Whilst the leaves are growing the plants require abundant moisture, and it is therefore necessary to water the border in the event of a dry summer. In autumn the leaves wither and the plants prepare to flower. Should there be heavy rains in July and August, the border should be protected if possible. At the end of September the flower-scapes push up, growing to a length of from



The Belladonna Lily (Amaryllis Belladonna).

1½ feet to 2 feet, and each bearing from three to eight flowers, which last about a week and are very fragrant. The plants do not all flower at exactly the same time, so that in a good border of them there are flowers for nearly a month. Sometimes the latter expand before October.

Some years ago bulbs of the *Belladonna* were received at Kew from the Cape about November. These were potted up at once and placed in a greenhouse where they pushed up spikes of flowers which expanded in January. It is possible that by a little manipulation a succession of flowers might be had from imported bulbs of this plant, but to see the *Belladonna Lily* in all its glory it must be planted outside by the hundred, and if favoured by a sunny, mild October, its flowers make a beautiful picture. I have seen thirty stout spikes of flower springing from a bit of ground not more than 2 feet square.

W.

SUMMER NOTES.

ONE of the most strikingly beautiful plants at the present time is the great common Mullein (*Verbascum Thapsus*). It grows wild, and therefore, I suppose, a weed, and as such many might be inclined to turn away from it. If so, they would make a great mistake. It is too huge to be allowed to grow in ordinary borders, but with me it gives no trouble. I never sow it or do anything to promote its growth or welfare in any way, but of its own accord it springs up in odd corners and waste places and grows rapidly to perfection in its own splendid way. It does not want much sun, but will grow to perfection on a stony, dry piece of ground where scarcely anything else would thrive.

The Foxgloves this year are with me poor and short as a rule. I like to see them tall with large leaves, but the want of rain has certainly told upon them. In a wild state they do best in damp and moist localities. In Cornwall they grow specially fine. In a path through the woods by the side of Lerrin Creek, on the river Fowey, I have walked through rows of Foxgloves on either side rising frequently to a height of 6 feet. But this year they will be dwarfed everywhere, for they delight in abundance of rain. Foxgloves grow plentifully, but not tall or fine in the shady valleys of the Forest of Dean. In gardens the great variety of their colours adds very much to their beauty. In a wild state they seem to be always red.

This remarkable season has given us a new experience in many ways. We seem already to have had a long summer before May has ended. *Iris germanica* has been splendid in the immense quantity of its flowers and the brilliancy of their colouring. There are fine masses of this kind of *Iris* in flower in Kew Gardens, where they seem to attract a good deal of attention, as they may well do. I noticed that the beds of *hispanica* or Spanish *Iris* were, like my own, thin and poor this year. I had not before been aware of the fact that Spanish *Irises* require so much water during their growth, but it is evident that they do. A neighbour of mine had some *I. hispanica* which came up strong and well this spring, but they have dwindled quite away without flowering owing to the drought. My beds will not be nearly so fine as I expected them to be, though the roots are flowering fairly well. This *Iris* seems to force well or to travel well, for they were plentiful in Bath market some weeks ago. It is surprising that we do not see the Spanish *Iris*

more frequently grown in gardens, as it is one of the cheapest things offered in the autumn catalogues. In fact, 100 can be bought for a few pence. Evidently, February rain and subsequent drought are just what *Iris germanica* thoroughly enjoys. I like *Irises* for their sturdy determination to grow under the most trying circumstances. London smoke does not seem to hurt them, nor do they mind the hard, dry, gravelly soil under a church wall. It is all the same where they grow to these accommodating plants, which make up by their readiness to do well anywhere for the cantankerous wilfulness of certain other members of the same family. And how very beautiful some varieties of *germanica* are, especially the *squalens* group, which is beautifully represented at Kew.

Plants of the English *Iris* are suffering, like those of the Spanish *Iris*, from want of rain. The English *Irises* are scarcely so pretty as either the German or the Spanish group, but they are sturdy and grow freely. Few tall flowers are more useful for cutting than *Irises*. Their varied colours

look most beautiful when well grouped in a vase, and their own leaves form the best of foliage to put with them.

The various forms of hybrid *Aquilegia* seem to have been more beautiful this year than ever. Their popularity is evidently increasing. Nor is that to be wondered at, for they have much to commend them; the softness of the colouring in various hues of blue and yellow and reddish brown and the finely cut dark green foliage combine to make these *Columbines* an extremely interesting class of early summer flowers. Moreover, there is something piquant about the long spur and the way in which the delicate flower poises itself upon its stalk. The plants soon come up from their winter rest and are soon gone again, but while they are with us they are among the most delightful of May and June flowers. They are not quite so easily cultivated as the old-fashioned *Columbines* of our woods and hedges, but they are decidedly hardy, and there need not be any fear with regard to frost.

Pæonies, alas, are rapidly going by. They have been gorgeously beautiful this year, and some so-called Japanese *Pæonies* have been most delightfully fragrant. This is a new acquisition in *Pæonies* so far as my acquaintance with them goes, as *Pæonies* in general have a most disagreeable smell, so that it is best to look at them from a distance. The scarlet and white varieties are excellent for church decoration at a time of the year when it is not always easy to find flowers for that purpose.

A GLOUCESTERSHIRE PARSON.

NOTES OF THE WEEK.

Campanula nitida alba is one of the most beautiful of the Bellflowers, and we noticed a very fine form of it in bloom in the hardy plant house at Kew. The flowers are of great breadth and massiveness, pure white, the stamens soft lemon colour. It is far bolder than the type.

Solanum Seafortianum is worth a note for its beauty as a climber to clothe unsightly iron supports. A specimen of it is in bloom in the Lily house at Kew, and such a plant deserves to be better known. It is very elegant in growth, graceful, and the abundant foliage is relieved by clusters, so to speak, of violet flowers, the stamens yellow.

Iris Boissieri is a superb kind for colour. A flower of it was shown in the charming collection of rare *Irises* from M. van Tubergen, Jun., of Haarlem, at the recent Temple show. The flower is not unlike that of a Spanish *Iris* in shape, and deepest purple in colour, relieved by a rich yellow blotch. In the whole exhibition no *Iris* approached it for colour. It is a bulbous species, and we hope easy to grow.

The weather in Durham.—We had a severe hailstorm here on Sunday, June 4, at 3.30 p.m. It came from the sea (E.), although the wind was north. The hail covered the ground, stripping the foliage off the trees and going through the leaves of *Rhubarb* and other plants. It has, however, done good, for the honeydew had become troublesome; in fact, Black Currants would have been a failure.—R. DRAPER, *Seaham Hall Gardens*.

Cineraria maritima aurea variegata.—Referring to your notice of this plant in THE GARDEN for June 3 (page 471), you are quite right in your surmise of its not being new. A similar one was raised by Mr. Fairbairn when he was gardener at Syon House about twenty years ago. It is figured in colour in Hibberd's "Beautiful-leaved Plants." I, however, do not know if it was ever exhibited at any of the London shows.—J. C. CLARKE.

Choisya ternata.—This cannot be too highly spoken of as a hardy plant for a warm situation.

The deep evergreen foliage and graceful and fragrant flowers which it produces in profusion in early spring, and again in September when the weather is favourable, are very pleasing. In these gardens where hardy plants are grown and appreciated we have a plant of this measuring 14 feet by 8 feet on a south wall. Although the last two winters have been very severe, it has had no protection whatever.—J. C. Llangedwyn, *Denbighshire*.

The Cypress Speedwell.—Mr. O'Kell sends us the lovely *Whipcord Veronica* (*V. cupressoides*) with leaves like a *Lycopodium*, and bearing beautiful white and lilac flowers. We hope to publish a paper of Mr. O'Kell's shortly on the New Zealand *Speedwells* with illustrations of plants sent us by him. These plants are of little value in midland districts and even about London, but are charming in places like the Isle of Man, and also in many of our warm shore gardens where they seem quite hardy.

Irises at Kew.—We are pleased to see that large groups of one kind of *Iris* or a judicious mixture have been planted by the side of the lake in the "Wilderness" at Kew. This is just the place for many species, such as *I. sibirica* and its varieties and *I. versicolor*, which is in full bloom. A large number of kinds are represented, and in time this delightful break of *Irises* will form one of the most charming features in the Royal Gardens. It would be well if in all large gardens where there is a broad sheet of water providing a good margin, the sides were thus adorned with beautiful flowers.

Saxifraga pyramidalis is very beautiful in the hardy plant house at Kew. Upwards of thirty specimens are in full bloom, the white pyramidal masses of flowers associating well with most things. Few *Rockfoils* are better known than this, but it is not often in ordinary gardens that one sees it in quantity. Such an effect as produced at Kew would be welcome in all private places, and it may be attained without great expense of time or labour. Even when not in bloom the plants are ornamental, the large rosettes of leaves quite silvery in character. In clefts of the rockery this *Rockfoil* is quite at home, and it is easily grown.

Rosa Mundi.—This *Rose* is usually shown for the York and Lancaster, which is quite distinct from it however, the flowers larger and fuller. *R. Mundi* is a charming *Rose* to form a good bed, the plants making vigorous growth and bearing large semi-double flowers, which are white and red striped, coming occasionally of quite a self colour. We are pleased to see that the old-fashioned types of *Roses* are coming into favour, and they deserve to be well grown. One must, however, have good breaks of them to ensure a good effect.

Late frosts.—Slight frosts occurred here on the mornings of Wednesday and Thursday, May 31 and June 1, and did some injury to the rows of dwarf Beans on a south border and some runner Beans in the open. No trace of injury is apparent in the Potato haulm, or in any other tender plants in this garden, but Potatoes have been cut slightly in several cottage gardens not far distant. No frost was indicated by our outdoor thermometer, so that the low temperature must have been of but very short duration. In the low-lying fields the Grass was quite crisp early in the morning.—W. STRUGNELL, *Rood Ashton Gardens*.

Iris Lorteti.—This beautiful *Iris* was shown in splendid character by M. van Tubergen, Jun., at the recent Temple show, the group consisting chiefly of the large delicately coloured flowers. In the valuable article on "Onocycylus *Irises*," by Prof. Foster (see GARDEN, Feb. 18, p. 132), a long note occurs upon this species. It is named after Dr. Lortet, a French naturalist, who found it in South Lebanon, between Meis and Hounin. The flowers are large, but apart from this or anything else we place first its lovely colours. We know nothing so beautiful in the whole range of *Irises*, and the exhibit of M. Tubergen was admired for that reason. It seems to vary somewhat in colour, but the flowers shown agreed with Prof. Foster's

description of his own plant. The standards were almost white, but there seemed spread over them a soft lilac or violet tone, the veins of a deeper shade, whilst the falls were pale cream-yellow, thickly spotted with velvety maroon. This *Iris* was figured in THE GARDEN of February 18 of this year.

Rodgersia podophylla.—This handsome plant is in bloom now. It is a native of Japan, belongs to the Saxifrage family, and has remarkably handsome leaves. Individually they are very broad, measuring over a foot across, boldly divided, and of a distinct bronze green shade of colour. The sturdy leaf-stalks rise from about 2 feet in height and upwards, the spikes of creamy white flowers being produced at this season. A good mass of it in the garden is of great beauty, and the chief requisites are shade and moisture. It will thrive in quite a moist peaty spot, where the Marsh Marigolds and other moisture-loving things are quite at home. If grown by the edge of the rockery, such a position as this should be found for it.

Earliness of the season.—On May 20 we gathered our first Peas from a line of Dicksons' First and Best, and have had a more than sufficient daily supply from this and a line of Sutton's Ring-leader, which came in three or four days later. These were both sown in the open, and have never had the slightest protection. Last year our first dish of Peas was gathered on June 22. On May 21 we had a dish of Strawberries (about 2 lbs.), mostly Laxton's Noble, and have gathered daily since. On May 31 we gathered Raspberries (white with very few red), and have had a second picking since, while on June 2 Red Currants and Cherries were picked. We began digging Potatoes from the open for regular consumption on May 31. Our garden is situated, I believe, about 500 feet above sea level.—H. W. B. SCHOLFIELD, *Tiverton*.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY.

JUNE 6.

AFTER such an exhibition as that recently held in the Temple Gardens it could hardly be expected that there would be a large display on this occasion. Groups, as well as the Pansies and Violas, which occupied a considerable space, helped largely to make up for a lack of new things. The contributions of *Orchids* were small as compared with previous meetings for months past, whilst no certificates were awarded to new kinds, these being, on the whole, conspicuous by their absence. Hardy cut flowers were present in strong force and of excellent quality, considering the long continuance of dry weather. Of these the most promising were the grand *Pæonies* from Cheshunt, the splendid cut *Roses* from Oxford, and Lord Penzance's seedling Sweet Briers, which whenever shown always create an immense amount of attraction. Cut examples of the beautiful dwarf *Cannas* were again shown in fine condition; these, too, found many admirers. The Pansies did not, on the whole, create so much interest as the other exhibits amongst the visitors in general, but they did undoubtedly do so with the growers of this beautiful spring flower. In the way of fruit the chief exhibits were the Melons, amongst which only one variety received an award. Some fine outdoor Strawberries and well-coloured Nectarines were staged, likewise good Cherries, of which no less than seven kinds came from one source from trees in the open. The lecture upon hardy *Rhododendrons* and *Azaleas* was both instructive and interesting, beautiful examples of seedling *Rhododendrons* to illustrate this being exhibited.

Orchid Committee.

As before alluded to, no certificates were awarded to new *Orchids*, whilst the prize for the best new kind produced, comparatively speaking, no com-

petition, Messrs. Sander and Co. being the only exhibitors of any note. This firm received the silver-gilt Flora medal offered for the best new Orchid exhibited at this meeting for an example of *Lælia hybrida* Maynardi (*Lælia pumila* Dayana × *Cattleya dolosa*) bearing one flower, which in colouring has much of its first-named parent, in some respects more intensified, the lip being of a deep velvety crimson-purple, the sepals and petals a pale rosy purple, the whole flower of much substance, the plant flowering in the manner of *L. Dayana* upon the young growth. Another hybrid from the same source was *Lælia Oweniana* (*L. Dayana* × *L. xanthina*), which has small flowers, the sepals and petals white, the lip shaded maroon. *Batemannia Burti*, with its curious bronzy brown and white flowers, and *Cypripedium macrochilum*, a handsome hybrid of the *C. caudatum* section, but quite distinct therefrom, were also shown by Messrs. Sander and Co., as well as *Physosiphon Loddigesii*, an old Orchid, more remarkable as a botanical curiosity than anything else.

Messrs. Hugh Low and Co. showed a good group composed mainly of *Cattleyas* and *Lælias*—*C. Mossiæ* and *C. Mendeli*, both in good variety, and *Lælia purpurata*, with *L. grandis tenebrosa*, being the best of these; *Disa grandiflora*, *Dendrobium suavisissimum*, *Cypripedium Rœbelinii*, with its pale yellow pouch and otherwise *C. lævigatum*-like flowers, and *Oncidium macranthum*, a golden yellow variety with large blossoms, as well as *Cattleya Schilleriana* Regnellii and an extra fine form of *C. gigas* were also included (silver Flora medal). Mr. Smee, The Grange, Hackbridge, showed a splendid boxful of cut *Cattleyas* and *Lælias*, comprising such fine forms of *C. Mossiæ* as Mrs. Smee, with the lip extra large, the lobes of which possessed more of the golden yellow colour than usual, being at the same time beautifully fringed; *Wagneri*, another form, has pure white sepals and petals, taking after, if not identical with, *C. Reineckiana*; *Schroederiana* has ivory white upon the lip instead of the usual rosy pink and mauve shades, with a golden yellow throat. *C. Mendeli* and *Lælia purpurata* *Schroederæ*, a beautiful pale form, were also shown (silver Banksian medal). Messrs. Lewis and Co., Southgate, showed a small group, comprising *Cattleya Mendeli* and *C. Mossiæ*, with *Lælia purpurata*, also *Oncidiums* and *Cypripediums*, with *Thunia Bensoniæ*, &c., and *Celogyne speciosa* (silver Banksian medal). Other exhibits comprised some splendid flowers, grand in size and colour, of *C. gigas* and *C. gigas* *delicata*, with *Lælia purpurata* *gigantea*, in which the lip is of extra size; *Lælia grandis tenebrosa*, with its rich copper shaded sepals and petals, finer than usual in colour; and *Cattleya granulosa* *superba*, a fine form of this beautiful old Orchid. These all came from Mr. Statter, Stand Hall, Manchester; and from Captain Hincks, Terrace House, Richmond, Yorks, came a hybrid *Masdevallia* (*Veitchiana* × *Estradae*), with pale buff flowers, being a decided cross between these two distinct species.

Floral Committee.

First-class certificates were awarded to—

ABIES ORIENTALIS AUREA, a pale golden form of this species, having a similar dense growing habit. This is another acquisition to the hardy evergreen trees with golden coloured foliage, and at the same time most suitable for planting for colour effect. From Messrs. J. Veitch and Sons.

IRIS LORTETI, likewise shown at the Temple a fortnight previously by the same exhibitor, and notes upon which were given last week in the continued report, is a lovely addition to the large-flowered forms of which *I. susiana* is one of the best known. From M. C. G. van Tubergen, junr., Haarlem.

Awards of merit were voted to—

BEGONIA ERNEST COOK, with large full flowers of a dark velvety crimson shade.

BEGONIA GIGANTEA.—A pale salmon-pink, with flowers of extra size, yet not coarse, but full of material.

BEGONIA RICHARD DEAN.—In colour a bright scarlet, large and full; a distinct shade of colour.

These three fine varieties of the tuberous section were all from Messrs. J. Laing and Sons.

CARNATION SIR CHARLES FREMANTLE.—Another fine addition to the Malmaison section, with remarkably large flowers, very full and globular in shape, the colour a deep shade of rosy scarlet and sweetly scented, the growth very free. From Mr. Martin Smith, Hayes' Common, Kent.

CARNATION ANNIE SANDERS, of which three flowers were shown, but no plant or growth, the colour a bright rose shade, the flowers full, of medium size and prettily fringed. From Mr. Geo. Fry, Lewisham.

GLADIOLUS DELICATISSIMUS SUPERBUS.—This belongs to the *G. Colvillei* or The Bride section, and is a very beautifully marked variety with pure white flowers, three of the petals having large feathery blotches of a rosy carmine shade. From Messrs. Hubert and Mauger, Guernsey.

PÆONY MARIE LEMOINE.—A fine creamy white, of extra size and full.

PÆONY M. BOUCHARLAT.—A large variety with flowers of a satiny lilac-rose shade, deeper at the base, very beautiful.

PÆONY JEANNE D'ARC.—A light rosy pink with straw-coloured centre, prettily fringed, the guard petals pink. These three choice varieties were shown by Messrs. Paul and Son, Cheshunt.

SWEET BRIER (hybrid) *MINNA*.—A pure shade of soft pink, large in size, distinct and showy.

SWEET BRIER MATILDA MARCHMONT.—Of a bright crimson colour, with imbricated petals and apparently a vigorous growth—a striking variety. These were both shown by Lord Penzance, and, with other kinds, were greatly admired.

RICHARDIA AURATA.—Another addition to this family. In this case the colour is a pale straw or yellow, with the dark maroon blotch at the base of the spathe, indicating some affinity with *R. maculata*; the substance of the spathe was also unusually good. From Mons. J. V. Deleuil, Marseilles.

PINK EMPRESS OF INDIA.—A new variety with large showy flowers with a white ground colour, the petals edged with lake, the same colour at the base. From Mr. C. Turner, Slough.

STRAIN OF PINKS, being forms of *Dianthus plumarius*, showing a wide range of colour, the flowers of medium size, freely borne; Beauty, white and dark maroon; Venus, pure white, and Rosy Circle, rose and pink, being three of the best kinds. From Mr. R. Dean, Ealing, by whom they were raised.

Messrs. Paul and Son showed a splendid assortment of *Pæonies* in addition to those receiving awards of merit, and likewise other hardy flowers in season. The best of the *Pæonies* were *Caroline Allain*, pale salmon-pink and white; *Nivalis*, a bright pink; *Duchesse de Nemours*, a fine white; *Lady Carrington*, large bluish white; *La Voluptueuse*, rose colour; and *Belle Douainenne*, pale bluish. *Lilies*, *Campanulas*, *Inula Hookeri*, &c., were included, also some good garden Roses and choice kinds as *Bourbon Mrs. Paul*, *Mme. Pernet*, *Ducher*, *Gustave Regis*, and *Marquis of Salisbury*, a red form of *Camoens*, a richly coloured and showy garden Rose (silver Flora medal). Mr. J. C. Tasker, Brentwood, Essex, again showed a beautiful selection of the dwarf flowering *Cannas*, the best varieties of which were *Mme. Crozy* and *Comte d'Estoule*, the spikes of these and other kinds bearing several flowers, each in fine condition; with these were some good early Roses (silver Banksian medal). Messrs. Barr and Son showed another of their comprehensive exhibits of hardy flowers, which embraced *Pæonies* in variety, *Irises* in variety, with *Funkias*, early *Lilies*, *Poppies*, and other useful things (silver Banksian medal). Mr. A. Waterer (Knap Hill Nurseries, Woking) showed a grand selection of seedling *Rhododendrons*, many of which were distinct breaks in colour; these were not named, but will undoubtedly be so distinguished in due course, being so distinct and choice (silver Banksian medal). Mr. G. Prince, Oxford, exhibited a large quantity of grand blooms of cut Tea and other Roses from the open air, but chiefly against walls; these were surprisingly fine and quite equal to exhibition flowers; the finest

were *Maréchal Niel*, *Princess of Wales* (extra fine in size and colour), *Comtesse de Nadaillac*, *Mme. de Watteville*, *Souvenir de S. A. Prince*, *Niphetos*, *Ethel Brownlow*, *The Bride*, *Cleopatra*, *Catherine Mermet*, and *Gustave Regis* with *Sunset*, the latter two valuable garden Roses. *Clara Watson*, a new early Tea from the open ground, was also shown. This is of much promise both for this property and that of its hardy constitution (silver Banksian medal). Messrs. Cheal and Son and Messrs. Shuttleworth and Co. also showed hardy flowers, each receiving a bronze Banksian medal.

Messrs. W. Paul and Son showed their new Tea Rose *Corinna*, another valuable garden variety of fine form and free habit, pinkish salmon in colouring, and *Lorna Doone* (*Bourbon*), a promising kind, large and full, of the old-fashioned flat shape. Mr. J. Hudson, Gunnersbury House Gardens, Acton, showed *Ixora Westi* and *I. Prince of Orange*. Notes on these appeared in THE GARDEN, December 3, 1892. Mr. Wythes, Syon Gardens, received the first prize for cut *Rhododendrons* with good late kinds.

Fruit Committee.

There was a great number of Melons before this committee, some good Strawberries, Cherries, and vegetables, Peas being largely shown.

Awards of merit were given to the following:—

MELON FROGMORE SEEDLING.—A large white fleshed variety with nicely netted yellow skin, very sweet and luscious, good depth of flesh, and stated to be very prolific. From Mr. O. Thomas, Frogs more.

PEA DUKE OF YORK.—This received three marks when growing last season at Chiswick, and this award was now confirmed by the committee. It somewhat resembles *Duke of Albany*, but is dwarfier and continues longer in bearing. The pods are not quite so large as those of the last-named, but produced in greater quantity. From Messrs. Taber, Witham, Essex.

Mr. C. Ross, Welford Park Gardens, Newbury, staged a good seedling Melon named *Marmion*. This was not quite at its best, and the committee desired to see it again. Very large beautifully netted fruits of a seedling Melon named *Salmon Queen* came from Mr. J. Fitt, Panshanger Gardens, Herts. Mr. C. Ritchings, gardener to Dr. Frankland, Reigate, staged a fine netted seedling of great merit, but over-ripe. Seedling Melons were also sent by Mr. G. A. Bishop, Whitwick, Wolverhampton; Mr. H. Parr, Apsley Park, Bridgenorth; Mr. Bishop, Westley Hall, Bury St. Edmunds; Mr. S. Ely, Joyce Grove Gardens, Henley-on-Thames; and a very fine half-dozen of *Conqueror* by Mr. Myatt, Hextable, Swanley.

A new seedling Strawberry named *May Queen* was sent by Mr. Collis, Acton. This is of remarkably good quality, very early, distinct, and though somewhat like Sir J. Paxton in size and colour, is far superior in flavour and much earlier. It barely missed an award of merit. A new seedling Strawberry named *Whitehouse's Seedling* failed to merit any award. A few fruits of *Auguste Nicaise* of large size were sent by Mr. Tudway, Lower Berkeley Street. Four very fine dishes of Strawberries were contributed by Mr. O. Thomas, the Royal Gardens, Frogmore, the varieties being *Sharpless*, an American variety, nice looking, but lacking flavour; *La Grosse Sucrée*, Noble and Sir J. Paxton, the fruits being well finished and large. Mr. J. Hudson, Gunnersbury House, Acton, staged eighteen grand examples of Lord Napier Nectarine gathered from a tree bearing several hundred fruits. Those sent were splendidly coloured and of nice shape. From Syon Gardens, Brentford (gardener, Mr. Wythes), came seven varieties of Cherries from wall trees, the varieties being *Early Rivers*, *Waterloo*, *Black Tartarian*, *Black Eagle*, *Belle d'Orleans*, *Frogmore Bigarreau* and *Governor Wood*—a nice exhibit so early in the season. A fruit of the *Carica Papaya* was sent by Mr. T. Wilkins, Inwood House, Dorset. This was of large size and quite a novelty to the general public. Mr. C. Prinsep, Buxted Park Gardens, Uckfield, Sussex, sent a collection of twelve varieties of Peas, with dates of sowing, nearly all the varieties

being fit for use. The best were Chelsea Gem, Duke of Albany, Sutton's A 1, Invincible, Empress of India, Magnum Bonum, Telephone, Exonian, Cannell's English Wonder and two unnamed seedlings. Mr. Wythes, Syon House, sent a very fine dish of Duke of Albany, also three dishes of new Potatoes grown in the open ground, not protected in any way, the varieties being Veitch's Early Ashleaf, Early May (a dwarf seedling) and Sharpe's Victor. From the same gardens were sent Bunyard's Novelty Cabbage, a variety of sterling merit for second cutting, and Denning's Cabbage, the latter of splendid flavour and valuable for succession. Messrs. McHattie, seedsmen, Chester, sent a new Cabbage Lettuce, which was too far advanced to secure any award.

There was a numerous company to hear the lecture on hardy Rhododendrons and Azaleas, by Sir J. T. D. Llewelyn, Bart. He said most people were struck with the beauty, long-lasting properties, and long-blooming season of Rhododendrons when late and early varieties are planted. By planting hardy hybrids we have secured a wealth of bloom, and by placing some of the Himalayan species in sheltered nooks, we have obtained a much longer blooming period and grand flowers. The greatest drawback to the culture of these plants was undoubtedly early frost, and though it frequently occurred that severe frost did little harm to the well-ripened wood, it often blackened the blooms or prevented them expanding. The Rhododendron, however, was not the only plant affected, as during April, May, and June even our hardiest trees are similarly injured, as the Oak, Ash, and Fir are often cut or injured just as growth commences. Some of the Himalayan species are less hardy and need more shelter; on the other hand, thorough ripening of the wood is essential. There are now so many seedlings raised from *R. catawbiense*, that it would be impossible to describe them in a short lecture. These hardy Himalayan species found a congenial home in the sheltered gardens of this country. Round Swansea, notably at Singleton, were to be found some grand specimens and splendid varieties. He handed round photographs to show the size these plants attain in suitable soil. One fine plant of *R. ponticum* covered no less than 345 feet, and other choice varieties, though not so large, still covered a large space. Some very fine foliage of the large-leaved kinds was handed round, the leaves being 17 inches long and 7 inches broad, also leaves of different colours to show their various markings and deep brown tints at the back. He had Rhododendron *barbatum*, a beautiful deep glowing crimson, in bloom early in February, but it was cut by frost. *R. Thomsoni* and others of the arboreum type were always great favourites. Those with fine foliage like *R. Falconeri* and *eximium* are always objects of interest on account of their bold habit and very large leaves. He stated that any fairly moist loam, not stiff clay, was suitable for Rhododendrons provided there was no lime in the soil. The hardy Azaleas are more slender in habit and dwarfer. The Ghent Azaleas are remarkable for the sweetness and varied colours of the flowers. *Azalea indica* is not hardy, though in a few sheltered spots in the country it had succeeded. *A. amena* was quite hardy, and a useful plant for massing. *A. mollis* was one of our best known and most useful Azaleas, readily forced and easily raised from seed.

Sir Alex. Arbuthnot asked if peat was not essential for some varieties, and whether cow manure was beneficial, and assisted in promoting rapid growth. Sir J. T. D. Llewelyn considered manure would be advantageous in poor soils, but his soil did not require it. Mr. Roupell thought cocoa fibre could be used to advantage in some positions.

The society intends holding a show at Chiswick Gardens on July 11. Prizes to the amount of nearly £150 are offered besides two silver cups. There will also be a great show at the Agricultural

Hall on August 29, 30, 31, and September 1, at which over £460 is offered in prizes, as well as medals and cups. Schedules of either show can be obtained from the secretary, R.H.S. offices, 117, Victoria Street, S.W.

LONDON PANSY AND VIOLA SOCIETY.

DESPITE the dry, warm weather and the remarkable absence of rain in some parts of the country, this new society must be congratulated upon the success of its first exhibition, which was of much greater extent than might have been anticipated. The striking fancy Pansies were considerably to the fore; they were brought in large numbers from the north, not a few of the blooms being of superb quality, and in size, substance, and brilliancy of colours they contrasted most favourably with those grown further south, where drought and heat are more severely felt. Indeed, had it not been for exhibits from Sunderland and Scotland the contributions to the exhibition would have been of a very limited character. Show Pansies were by no means numerous, and on the whole the quality was good; but while it is impossible not to note an immense advance in the improvement of the fancy varieties, the show section has scarcely made progress in the past ten or twelve years; indeed flowers quite as good were seen twenty years ago. The immense variation seen in the fancy Pansy admits of a much greater development than in the case of the English show Pansies, with their sections of selfs, yellow grounds, and white grounds, and as these types have to be kept within certain well-defined lines, the area of improvement is considerably limited. But they are all beautiful when fresh—stout and smooth in petal, bright in colour, and the several parts well defined. Tufted Pansies were shown in enormous quantities. The present practice of setting up Viola blooms in neat and effective bunches, backed by their own foliage and arranged on sloping stands covered with black, sets off the different varieties to the best advantage, but in the rage for the production of new varieties a large number of flimsy ineffective flowers are staged, the petals of which curl as if of the thinnest tissue paper. In the rage for variety many eccentric blossoms are included that appear to be unfitted for one of the principal uses to which Violas can be put—effective display in the flower garden. Thin-petalled Violas are of very little use indeed in the south in such a dry, warm season as that we are now experiencing. Flowers that curl up in an hour or two after being cut can have little value.

Open Classes.

Taking these first, the principal one was for the best exhibit of Pansies and Violas. Here Messrs. Dobbie and Co., florists, Rothesay, were first with nearly 100 bunches of Violas arranged in their usual admirable manner, having as a foreground 18 dozen superb fancy Pansies, arranged on the usual green stands. The Pansies were not named, but the Violas were, and of dark varieties the best appeared to be Archie Grant, Tory, Crimson King, of a good hue of crimson-maroon; Max Kolb, deep purple; Ravenswood, maroon, shaded with cerise. Of yellow shades, Bullion, Royalty, Prince of Orange, deep in colour; Wonder, pale yellow; and Lemon Queen. White varieties: White Flag, Snowflake, Mrs. Kennard; and Countess of Hopetoun, pale blue; Ariel, Favourite, and Duchess of Sutherland; and of flowers having combinations of colours: Edina, maroon, blue and silvery lilac; Blue Cloud, edged with blue; W. Niel, pale silvery pink; Hyacinth, dark centre, edged with silvery grey; York and Lancaster, striped; and Annie King, soft silvery mauve. Second, Messrs. William Paul and Co., florists, Bridge of Weir, who staged about forty bunches of fancy Pansies, backed by their own foliage, and in addition twenty bunches of Violas. There were four exhibitors of forty-eight fancy Pansies, and Mr. John Smellie, Busby, Glasgow, was first with a very fine collection. Second, Mr. A. Bailey, Jr., florist, Sunderland. Third, Mr. A. Lister, florist, Rothesay. There were five collections

of twenty-four varieties, Mr. John Smellie being again first, varying in very fine character David Rennie, Lord Hamilton, very distinct; Maggie McPhail, Mrs. R. Thomson, Mrs. W. Watson, James Campbell, Mr. Lawrence, Mrs. R. Niven, and some seedlings of promise. Second, Mr. A. Lister. Third, Mr. M. Campbell, florist, Blantyre. There were five stands of twelve varieties, and once again was the first prize awarded to Mr. J. Smellie. Second, Mr. A. Lister. Third, Mr. A. Bailey, Jr. There were five stands of twelve fancy Pansies of one variety. Mr. A. Lister was placed first with Tom Travis, having large glossy dark blotches, margined with white, the upper petals purple, shaded with white. Mr. M. Campbell was second, and Mr. A. Bailey third, both with David Rennie, bright chrome-yellow and rosy purple. With twelve distinct seedlings, unnamed, Mr. A. Lister was first, Mr. J. Smellie second, and Mr. A. Irvine third.

SHOW PANSIES.—In the open class for twelve varieties there were four competitors, Mr. John Smellie being placed first with dark selfs, Dr. Inch, Harry Paul and a seedling; yellow self, W. J. Hunter; primrose selfs, Miss E. Bolton and Winnie Irvine; yellow grounds, P. C. D. Boswell, John Barrowman and G. C. Gordon; white grounds, Mrs. Brown, Mary Campbell and seedling. Second, Mr. A. Lister. Third, Mr. M. Campbell. A special prize, offered by Mr. W. Sydenham, of Tamworth, for two blooms each of Emmeline, Tamworth Hero and Tamworth Fancy, Pansies of his own raising, brought but one competitor, Mr. John Smellie, who was awarded the first prize. The best fancy Pansy in the exhibition was a bloom of Lord Hamilton, shown by Mr. M. Campbell. It has large dark blotches, edged and margined with mauve and lavender.

TUFTED PANSIES.—The best twenty-four sprays, nine blooms in each, came from Mr. J. Nicholson, gardener, Sewardstone, Herts, a very good lot indeed; second, Mr. A. Bailey, Junr. There were three exhibitors of twelve sprays, Mr. John Smellie being first with Stanley, very handsomely striped; Wonder, yellow; York and Lancaster, striped; and others. Second, Mr. A. J. Rowberry, South Woodford. Third, Mr. A. Bailey. With six sprays of rayless Violas, Mr. G. W. McLeod, Chingford, was the only exhibitor, taking the first prize with Rose Queen, deep pink; Sylvia, primrose; Blush Queen, deep blush; Violetta, white; G. W. McLeod, yellow; and Sylvia's Rival, primrose.

Amateurs' Classes.

FANCY PANSIES.—Of twenty-four varieties, Mr. E. J. Pethers, Walthamstow, was the only exhibitor, and was awarded the second prize, the flowers showing the effects of the heat. There were five exhibitors of twelve varieties. Mr. A. J. Rowberry, Walthamstow, was placed first with good blooms of Mrs. J. Downie, Lord Hamilton, David Rennie, G. Crome, Dan. Gray, Neil McKay, W. Dean and Mrs. Browell as his best blooms. Second, Mr. A. H. Needs, Woking. Third, Mr. H. A. Hitch, Waltham Cross. There was but one exhibitor of twelve fancy Pansies in one variety, viz., Mr. A. McWilton, Leytonstone, who had Neil McKay. In the class for six blooms of one variety, Mr. A. J. Rowberry was first with Tom Travis, Mr. H. A. Needs being second, and Mr. Bruce Cook third with Neil McKay.

SHOW PANSIES.—There was but one exhibitor of twelve blooms, namely, Mr. A. J. Rowberry, who was awarded the first prize with dark selfs.

TUFTED PANSIES.—There were two exhibitors of twelve sprays of these. Mr. E. J. Pethers, Walthamstow, was first, the flowers effectually set up on a reversed heart-shaped stand, Mr. A. J. Rowberry being second. With six sprays Mr. Bruce Cook, Chingford, was awarded the first prize, being the only exhibitor. There were three entries with six sprays, three blooms of each. Mr. E. Fuller, Kelvedon, Essex, was placed first with Crimson King, Duke of Fife, J. B. Riding, Beauty, Snowflake and W. Niel. Second, Mr. A. McWilton, Leytonstone. Third, Mr. G. H. West, Chingford. Mr. B. Cook was the only exhibitor of six sprays of Duchess of Fife, Countess of Hope-

town, and Countess of Kintore. Mr. A. J. Rowberry was the only exhibitor of six rayless Violas, having *Violetta*, *Blush Queen*, *George McLeod*, *Sylvia*, *Princess Beatrice* and *Countess of Kintore*. The presence of the last-named should have disqualified the stand.

Messrs. Dobbie and Co. offered special prizes for twelve sprays of tufted Pansies, four new varieties of their own raising to be included. The best came from Mr. A. J. Rowberry, who had *Duchess of Fife*, *Annie King*, *Rosina*, *Golden Flash*, *Beatrice*, and *Bullion* as the best. Second, Mr. E. J. Pethers.

The best fancy Pansy in the amateurs' classes was *Tom Travis*, shown by Mr. A. J. Rowberry.

First-class certificates of merit were awarded to—

FANCY PANSY ALICE BOLTON, having large dark blotches margined with gold, the upper petals purple, large, and stout. From Mr. A. Lister, Rothesay.

FANCY PANSY PRINCESS, white, with slight margin of bright rosy cerise. From Mr. M. Campbell, Blantyre.

FANCY PANSY BEAUTY, dark blotches, with edges of fiery crimson margined with gold, the upper petals crimson and rosy cerise, very fine. From Mr. A. Bailey.

Awards of merit were made to a glossy dark self show variety named *Rev. R. McAllister*, and to yellow ground *John Watt*, six blooms of which were shown; both from Mr. M. Campbell, Blantyre. Of miscellaneous collections, Mr. A. Lister had sixteen dozen blooms of fine fancy Pansies; Mr. J. Smellie, four dozen, all very fine; and a similar number from Mr. M. Campbell, also very good. Some seedling Violas were sent by Dr. Stuart, Chirnside, N.B.; and a hundred bunches of Pansies and Violas from Messrs. Dicksons and Co., nurserymen, Edinburgh.

PUBLIC GARDENS.

WATERLOW PARK.

I HAVE lately seen this park and been somewhat shocked at certain things in it. Many tons of common spoilt bricks are used in the belief, no doubt, on the designer's part that they form a very fitting rock garden for a public park! This rubbish is used by cottagers near brick-fields, but even the gardens of these are made hideous by it. These wretched bricks have a little dusty soil thrown on them here and there, where sickly alpine flowers starve, sometimes in the shade and sometimes in the sun. A more deplorable use of a base material could not be seen. There are five or six gates to the place, which is not much bigger than a large London square, and people may well imagine the wastefulness and cost of this when they consider that it means five or six keepers who have no serious work to do save on four or five days of the year. It is not only the cost of the keepers so extravagantly used, but every gate not absolutely necessary spoils much of the possibility of good gardening in its vicinity. One of the prettiest lawns in the park is thrown into terraces in a harsh way to form tennis grounds. An open space near at hand, like *Hampstead Heath*, would be the best place for playgrounds, and a place like this would be better kept as a beautiful garden. How is the County Council to meet the wants of London as to playgrounds and public gardens if simplicity and economy

are thrown to the winds? To get a pretty piece of ground and cut it all to pieces for any frivolous pretext can only end in an ugly "tea garden." If each year sees as much needless eating up of the surface of this park as the past few years have done, what is to become of the beauty of a naturally pretty piece of ground?—W. R., in *Times*, May 26.

Popularity of the parks.—It was reported by the Parks Committee that for the purpose of ascertaining accurately the extent to which the Council's parks were used by the public they had the number of persons entering the parks on Whit Monday counted. The result was as follows: *Battersea Park*, 109,783; *Brockwell Park*, 57,598; *Clissold Park*, 68,223; *Dulwich Park*, 33,607; *Finsbury Park*, 89,881; *Kennington Park*, 40,001; *Myatt's Fields*, 8,546; *North Woolwich Gardens*, 28,485; *Ravenscourt Park*, 20,597; *Southwark Park*, 91,074; *Victoria Park*, 303,516; and *Waterloo Park*, 49,255. The total number for the twelve parks was 900,566.

Millbank Prison site.—An influential deputation from Westminster waited upon the Housing of the Working Classes Committee at the office of the London County Council recently to advocate the formation of a recreation ground on that part of the Millbank Prison site which will not be required for Government purposes. The Earl of Ilchester introduced the deputation, which was headed by Archdeacon Farrar, Mr. Burdett-Coutts, M.P., Canon Blackley, and the Rev. the Hon. J. S. Northcote, and included delegates from all the schools and institutions in the district, as well as from the Westminster Vestry. Archdeacon Farrar pointed out that in the immediate vicinity of the site there were 40,000 people in a very small area, and that some of the schools were absolutely without space for playgrounds. The erection of artisans' dwellings would only add to the overcrowded condition of the district; whereas the laying out of nine or ten acres as a playground would secure an open space that would be an incalculable boon to the thousands of poor children who had now to spend their playtime in the streets. A delegate stated that the Westminster Vestry had offered to contribute from the rates a fourth of the cost of ten acres, to raise another fourth from other sources, to bear the cost of laying out the ground, and to maintain it afterwards. A member of the committee stated that the land had been offered to the Council by the Government exclusively for the housing of the working classes; the Council must use it for that or have nothing to do with it. The chairman promised that the prayer of the memorial should be considered before the committee reported to the Council.

The Ramondias are very beautiful on the Kew rockery, and the position in which they are placed exactly suits the plants, which revel in the moist fissures in this sheltered and shady nook. At the Cumberland Gate end of the rock garden there is a recess occupied chiefly with *Meconopsis nepalensis*, bursting into bloom, and *M. Wallichii*, whilst hardy Ferns of many kinds, the Royal Fern in particular, luxuriate. On the wall, so to speak, of the recess the *Ramondia pyrenaica* is thoroughly established, and the purplish violet flowers of the type are in perfect accord with the surroundings. The colours range through rose to almost pure white, but not absolutely pure. The *Ramondias* are sometimes grown in pots, but to see them in full beauty they should be so grown that the spreading rosettes of leaves show to advantage.

The weather in West Herts.—During the past week the days have been warm, but on several nights some low readings were registered. Indeed, on Wednesday and Friday nights 6° and 4° of frost were shown by the exposed thermome-

ter. In my own garden no damage whatever was apparent, but on *Berkhamsted Common*, about 150 feet above it, most of the Bracken was killed, and in the valley below Potatoes and other delicate plants were in places blackened. Notwithstanding these two cold nights the mean temperature of the week was above the average; consequently this has been the twentieth week of unseasonably warm weather that we have had in succession. During Tuesday night rather more than a quarter of an inch of rain fell. A sharp squall from the west, filling the air with thick clouds of dust, passed along the Berkhamsted valley shortly before two o'clock on Sunday afternoon. A little light driving rain afterwards fell, but not sufficient to be measured by the rain-gauge. The temperature of the ground at 1 foot deep is now 65°, and at 2 feet deep 60°. On the same day last year the readings at these depths were respectively 63° and 58°.—E. M., *Berkhamsted*.

Rhiza orientalis.—Can any of your readers tell me what are the natural order and habitat of a very distinct plant which I saw on the rockery at Kew under the above name? It was not in bloom (though showing colour) on May 5 when I saw it, but probably is past its best by this time.—J. C. L.

Sawdust as a mulch.—Too much cannot be said in favour of mulching in hot weather. Almost anything can be used with advantage. This year I have been using sawdust with good results to many vegetable crops. My method is to give a good watering with manure water, then apply the sawdust, and it is astonishing how long the soil will keep moist in this way.—J. CROOK, *Forde Abbey*.

Rosa spinosissima.—Can you tell me the name of the Rose I now send for identification? I found it on a very bleak place on the east coast in full flower. It is very pretty and grows from 1 foot to 2 feet high, sweet scented. It is wonderful how it grows so freely on so exposed a place, as for some months during the winter the salt spray is driven over it. It seems to root deeply on the limestone between the rocks.—R. DRAPER, *Seaham Hall*.

** The so-called Scotch or Burnet Rose (*Rosa spinosissima*).—ED.

Names of plants.—A. W. Wittingham.—2, *Saxifraga cespitosa*; 3 and 5, *Saxifraga muscoides* vars.; 6, *Saxifraga hypnoides*.—C. H. Chadwick.—1, *Cerasus Padus*; 2, *Syringa Emodi*; 3, not recognised; 4, *Hydrangea* sp.; 5, *Weigela Lowii*; 6, *Pieris floribunda*.—Henry Buckley.—Iris; send better specimen.—F. Reuz.—1, *Viburnum Opulus*; 2, *Kalmia latifolia*.—W. J. Novell.—*Heuchera sanguinea*.—Jas. Brockbank.—1, *Spiraea Bumalda*; 2, *Ragged Robin*; 3, *Antennaria tomentosa*; 4, *Chelone barbata*; 5, *Tilia trifoliata*; 6, not recognised.—Rose.—*Rosa spinosissima*.—M. M.—Impossible to name from such a scrap.

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No. 1126. SATURDAY, June 17, 1893. Vol. XLIII

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—Shakespeare.

ORCHIDS.

CYPRIPEDIUM SPECTABILE
AT HOME.

I BELIEVE that many of the failures in cultivating this Orchid in England are due to its being literally killed by kindness. The account of its vagaries given by J. Wood in THE GARDEN of February 18 did not increase my confidence in its good behaviour when in a foreign land, especially his allusion to the general failures when growing it in the open—the very method of cultivation on which my faith was based. Few people like to find a pet theory on the verge of destruction, and it is with a feeling of positive delight that I find in THE GARDEN of March 11 the description of T. B. Field's experience with the same Orchid. I am, perhaps, the more gratified by his success, since it not only demonstrates the fact that the plant can be easily grown in England with proper treatment, but because his mode of culture is that which, knowing the *Cypripedium* in its native home, I should consider likely to produce the best results. There can be little need of cold frames, hotbeds, greenhouses, or any of the paraphernalia required for the protection of tropical plants, as this hardy Orchid is able to defy a temperature of 30° below zero in winter or 120° above in summer, the simple covering for winter furnished by Nature from the Grass and faller leaves being all that is necessary. It might fall a prey to dampness in the confined air of a frame or the unnatural conditions of a greenhouse, the stagnant dampness—if I may coin a term to describe the want of air in constant circulation which exists in any enclosed place—tending to produce the rotting crowns which have so often proved fatal alike to the plant and the hopes of its cultivator. As this Orchid is, however, a native of peat bogs, swamps, and low-lying forests, it ought to endure unharmed the humid air of England. The varieties of climate in which it flourishes, consequent upon the vast area over which it is scattered—from Maine on the north to the Alleghany Mountains on the south, and from the Eastern States to Michigan—in conjunction with the capriciousness of the American climate in general, should fortify the *Cypripedium spectabile* against any atmospheric peculiarities which it might encounter in the British Isles if Mr. Field's manner of entertaining this "fresh-air child" of America be strictly adhered to. That it demands little care when once established is not strange, since it will in a wild state live many years. I remember a specimen which appeared on a bit of ground, rarely, if ever, submerged, though in the midst of a bog, the Grass among which it grew and a little bush in close proximity slightly sheltering it from wind and sun. Here this lonely plant, the only one of its kind perhaps within a radius of several miles, lived for a quarter of a century or thereabouts, increasing little, if any, in size, but sending up its lovely flowers year after year to brighten its dreary abode. This *Cypripedium* doubtless requires a little shelter from the wind, but may not the

wholesale breaking of young shoots, of which J. Wood writes, be caused by a soil too highly fertilised, resulting in a forced, and consequently tender, growth of the stalks, as surely England is not swept by fiercer blasts than those common to America? While great improvements are wrought in many plants by the efforts of the gardener, there are instances in which he can only hope for satisfactory results by closely imitating that most skilful horticulturist—Nature. That this is a case in point is proved by the success of Mr. Field, which is evidently due to the fact that his culture of the plant closely approximates its natural conditions. I venture these suggestions concerning the *Cypripedium spectabile*, hoping they may direct the attention of a few who have possibly failed to read it to the article by Mr. Field describing its culture and induce them to seek a closer acquaintance with this beautiful flower whose wants are so simple and easily gratified when once understood.

E. LANEY.

Hoosick, New York.

Masdevallias from Streatham.—These plants seem now to be flowering very freely, and I am glad to find that there are now many growers of them. I have just received three beautiful flowers from Mr. Ransome, gardener at the above place. One appears to be *M. Denisoni*, or the Bull's Blood form of *M. Harryana*. It is of a remarkably rich shade of colour, being a deep purplish crimson, having the points of the lower sepals turned inwards. A flower of what appears to be *M. Veitchi grandiflora*—but the plant producing it would appear to be weak, as it wants size—is also sent. The upper sepal is densely covered with crimson papillæ, which are continued on the outer half of the two lateral sepals, the inner part of both being clear orange-scarlet. I shall be glad to see this again another season. Another form which, seen between the two vivid flowers noted above, appears somewhat dull, being pink with carmine veins, is a fine variety, the whole being shaded with a delicate heliotrope shade. For this I propose the name of *Helena*.—W. H. G.

Cattleya gigas.—J. Deacon, gardener to Mr. H. J. Harris, of Bowden Hill, Chippenham, sends me a very good flower of this variety of the labiate section; it measures 8 inches across, with broad sepals and petals of a dark rose colour, the lip being large and of a rich deep purplish violet, beautifully frilled and undulated, and having the usual two eye-like spots at the throat.—W.

Masdevallias from Sheffield.—From J. Hutchinson come three kinds for names. No. 1, which he says has twenty-seven flowers open, is very bright and showy and must be extremely handsome. It is quite like the variety of *Harryana* known as *miniata*, having good-sized flowers of a bright vermilion-scarlet, with streaks of a deeper colour and a rich yellow throat. No. 2 is *Shuttleworthi xanthocorys*, which is the yellow-flowered variety of *Shuttleworthi*, now made a form of *M. caudata*; and No. 3 is *M. rosea*, which is a very handsome flower, the sepals rosy carmine, the tail-like points red and the long upper sepal of the same colour. This plant is a native of the mountains about Laxa at considerable elevations, but it succeeds well enough with the other plants of the same genus, such as *M. Harryana* and *M. Veitchi*.—W. H. G.

Cypripedium bellatulum.—From J. F. Wilkinson, of Minchinhampton, comes a flower of this species. It is certainly the very finest that has come under my notice, the petals being 2½ inches in length and 1½ inches broad, having the ground colour white, heavily spotted with dark chocolate-purple; the dorsal sepal is streaked and dotted with the same colour, leaving a broad, pure white border, the lip, which very much resembles a plover's egg in shape, being white, freely dotted with chocolate. Judging from its stem, one can-

not say very much for its yet getting up, and I advise Mr. W. to try the plant in nearly all old mortar mixed with a little loam, using old mortar for the drainage material. A flower such as this would have an elegant appearance if set upon a stem clear of its foliage, and in such a condition we have not yet seen it in cultivation.—W. H. G.

Cattleya Sanderiana.—A superb bloom of this variety comes from Mr. Broome, of Llandudno. The flower measures 9 inches across, the sepals and petals being broad and of a rich rosy-purple, the lip large and prettily frilled round the edge, of a rich violet-purple, which is continued up the centre of the throat, and which forms the eye-like spots which are such a marked feature in this variety. This one and that shown by Baron Schröder at the Temple are certainly the two finest varieties I have ever seen.—W. H. G.

—Mr. Wilkinson sends a much smaller flower than the one noted above from Mr. Broome; the sepals and petals, of a light lilac, are comparatively narrow; the lip, however, is of a very rich deep colour. It is a very fair variety, but nothing unusual.—W. H. G.

Epidendrum vitellinum majus.—William Parsons says: "You have so frequently said that this plant requires moisture and shade, that I two years ago determined to give you plan a trial, and this year the result is quite astonishing. I send you a sample of what I now have in abundance." The spike was very fine, much longer than is usually the case, and had twenty-three flowers of good size. This is well deserving the attention of my friends who find a difficulty in growing this plant and having it flower from year to year. It is one of the most cheerful and showy plants known, and it only requires to be kept cool and to have constant shade with any amount of moisture in the atmosphere.—W. H. G.

LÆLIA WOLSTENHOLMIE.

FLOWERS of this plant come to me with numerous others from A. Dunbar, who says this has flowered from amongst a lot of *L. elegans*, and asks what it can be. There is no doubt about its being the above-named plant, and very beautiful it is. I do not agree with those who class this with *L. elegans*, neither can I accept the theory that it is a natural hybrid between *Lælia purpurata* and *Cattleya guttata* Leopoldi. The form of growth is not that of *L. elegans*. The stems, A. Dunbar tells me, are clavate, and in various plants which from time to time have come under my notice, they have become wrinkled and furrowed with age. The scape bears five and six flowers when the plant is strong. The flowers now before me each measure upwards of 7 inches across. In the shape of the lip also this plant differs much, and this organ, I have observed, authors pay particular attention to, more especially when they want to make a distinction. In the true form of *Lælia elegans* the side lobes of the lip are rolled over the column, the front lobe being oblong, but in the case of the flowers now before me the lip is large and indistinctly three-lobed, the side lobes turned up and forming a tube over the column, the front lobe being continuous with them and spreading. The flowers marked Nos. 3 and 5 have the lip of the same shape, and belong to the plant that Reichenbach called *Lælia Schilleriana*. One, I should say, comes near the form figured by Warner as *L. Warneri*, which is but a good coloured form of *Schilleriana*, having the sepals and petals pure white, and the whole of the front lobe of the lip deep rich purple.

The other flowers are ordinary forms of *Lælia elegans*, and in these my friend says the growths are "long and slender." In the plant now under consideration we have, however, a stouter growth and more clavate stems, and the flowers measure upwards of 7 inches across, the petals twice as broad as the sepals, white in the centre, passing into a soft rosy purple at the margin; the lip of about the same colour in the tubular part, the front lobe having a blotch of rich deep purple at

the base, while the same colour is continued down the white throat in a central stripe, the margin being of a rich rosy purple. Such is the colour of the flowers now before me, and I do not think it differs much from that of any varieties of *L. Wolstenholmiae* I have seen before, nor from that of a plant of the original form which flowered with Mr. B. S. Williams when I was with him, and which was named in honour of the sister of Mr. John Day, of Tottenham, in 1865.

This plant, being found growing with *Lælia elegans*, naturally requires the same treatment, that is to say, it likes the warm end of the Cattleya house and a nice moist atmosphere. I would by no means recommend the use of the syringe overhead. In the winter, too, these plants require a slightly warmer temperature than such as *Cattleya Mossiæ* and *C. Trianae*. They like more the treatment of *Lælia purpurata* and *L. tenebrosa*, and to be potted in a similar manner, using for soil good brown peat fibre mixed with chopped Sphagnum and a little sharp sand.

WM. HUGH GOWER.

STENOGLOTTIS.

UP to within the last five years the only species known to belong to this genus was *Stenoglottis fimbriata*, a charming little Orchid which has on more than one occasion been referred to in these pages. About 1888, however, a new species—*S. longifolia*—was imported from Natal to Kew, and has proved to be as pretty and as easily grown as the older one. These two plants, whilst they cannot be classed among the showier Orchids, are well worth cultivation for their neat habit and handsome foliage as well as their numerous brightly coloured, if small, flowers. In their natural state the *Stenoglottis* are often found growing on rocks near watercourses, also on the ground in moist, shady positions, and it is on these conditions that their treatment under cultivation should be based. A compost of rather sandy loam, leaf soil, and silver sand suits them well. Growing them in shallow pans where the roots have plenty of space to develop horizontally rather than downwards is not only in accordance with their natural style of growth, but by enabling a group of several plants to be grown together, a much better effect than when they are grown singly in small pots is produced. After potting, tufts of Sphagnum should be placed here and there on the surface, as this improves the appearance of and helps to keep an equable moisture about the plants. During the growing season an abundance of water is necessary, and even in winter when they are nearly or quite devoid of leaves the fleshy roots should be kept plump. They may be grown at the cool end of the intermediate house or even in the cool house if the warmest place be given them.

S. FIMBRIATA.—The leaves of this species are 3 inches to 4 inches long, dark green, handsomely spotted with inky purple blotches. They are narrow oblong, with wavy margins, and by spreading outwards close to the soil, form a charming little rosette. It has no pseudo-bulb, the reserve material being stored in the thick fleshy roots. The flower-spike is quite erect, 6 inches to 1 foot in height, with the flowers congregated in great numbers on the upper part. The flower is of a pale rose-purple, its chief feature being the three-lobed lip, which is purple spotted. The species is a native of Natal, and has been in cultivation in this country since 1871.

S. LONGIFOLIA.—The leading characters and style of growth of this newer species are the same as in *S. fimbriata*. It is, however, superior to that species in the size of its flowers and leaves. The latter are 8 inches in length, but differ in being of a uniform dark green without the purple markings which add so greatly to the effectiveness of the

smaller kind. This is compensated for by the much finer flower-spikes, which are 18 inches high. The flower, besides being larger, differs from that of *S. fimbriata* in the lip being five-lobed. Both species flower during autumn and remain for many weeks in beauty. B.

Dendrobium Dalhousianum.—The fine plant of *Dendrobium Dalhousianum* recently exhibited by Mr. Douglas at the Crystal Palace was truly a handsome one. I forget exactly how many spikes of flower it had on, but I think upwards of thirty. A plant such as this is rarely if ever seen, it being one of the most difficult of Dendrobies to flower freely. This plant Mr. Douglas has had to my knowledge upwards of twenty years. This Dendrobe, grown in a high temperature, makes stout pseudo-bulbs upwards of 5 feet in length, but to flower it freely it must be well ripened and rested. This latter is most essential, or the buds will not form, but remain dormant. As it blooms annually from the older growths, these must not be removed until they decay.—A. YOUNG.

—Mr. J. F. Wilkinson, Minchinhampton, sends me a raceme of five flowers of this grand species; the sepals and petals and also the front lobe of the lip are of a much paler creamy-yellow than usual, whilst the two maroon blotches at the base of the lip are of a bright crimson, the whole flower rather smaller and rounder. It is a very pretty variety of this, a plant of which I once saw with Captain Shaw, of Blackburn, with considerably over 400 blossoms open.—W. H. G.

Lælia tenebrosa (J. F. Wilkinson).—The flower you send is of this species, and although a very nice one, I yet must say it is somewhat inferior in colour to some I have recently had; the petals are narrow, not broader than the sepals of some flowers which have come to me, and the lip, which is stained very heavily in the throat, has the front lobe pale lilac. It is a very pretty flower, but I cannot say it is a fine form of the plant, which at one time was considered to be the true *L. grandis*, but which is now considered to be a distinct species.—W.

Cattleya Mossiæ.—A remarkable and superb form of this variety comes to hand from Mr. Broome, who would appear to have fine varieties of nearly all the species which he possesses. The flower is very rich and deeply coloured, the sepals and petals being broad and deep rosy purple, side lobes of the lip of the same colour, rolled over the column; front lobe long and spreading, deeply frilled and undulated round the edge, where there is a pale marginal border of lilac, the whole centre being of a rich deep crimson-magenta, which is carried well up into the throat, and having a rich tawny orange stain running down from the side lobes. It is one of the very best forms of *C. Mossiæ* which I have seen.—W. H. G.

Dendrobium moschatum cupreum.—A superb raceme of this variety bearing thirteen of its bright and elegant flowers comes to hand from Mr. Wilkinson. This spike was sent to me under the name of *D. moschatum*, but it has neither the size nor the colour of that kind. It is really the plant that used to be grown in gardens by the name of *D. Calceolus*, but the name of *moschatum* being the older must take the precedence. The flowers are of a rich apricot-yellow, the lip having a coppery orange blotch on each side at the base. The flowers of this plant, although so beautiful, do not last a week before they show signs of distress.—W. H. G.

Lælia crispa.—Although an old Orchid, this ranks amongst the finest of the genus, it being no uncommon occurrence to see seven or more flowers on a scape. Following on after the forms of *Lælia purpurata*, it is extremely valuable, and if it had been a newer introduction it would be much sought after. Like other Orchids, it is variable, some of the varieties being rather poor, while others are extremely handsome. One form I have now in

flower is extremely handsome, the lip being broad and of a rich purple, the edge margined with white, which gives it a beautiful appearance. It is generally grown in the Cattleya house, but I find it grows with greater vigour when given more warmth. On being first imported it may succeed well enough in the Cattleya house, but after a time the plants degenerate, the growths are smaller and there are fewer flowers.—A. YOUNG.

A DUBLIN GARDEN AND GARDENER.

MANY readers will learn with regret that Mr. Mr. Welsh has retired from the management of the gardens at Mount Merrion, near Dublin, a few days ago, after a service there of thirty-six years. Mr. Welsh is a great lover of plants and a sound practical gardener, and at one time the gardens at Mount Merrion could show some of the best gardening in Ireland. His work in Ireland commenced at the Vice-Regal Gardens, Phoenix Park, in their palmy days, and as foreman there under Mr. Geo. Smith, the cultivation of stove and greenhouse plants, Ferns, Palms, Orchids, and the flower gardening of the time were perhaps the finest in the country.

Mr. Welsh was much respected by all his garden friends near Dublin, and I have spent many pleasant hours with him amongst his pet plants and flowers. Fruits and vegetables, however, were never neglected, for Mr. Welsh had enjoyed his early training in good old Scottish gardens, where "work and not words" was the rule forty years ago. Grapes, Peaches and hardy fruits were admirably grown at Mount Merrion, and under his care it obtained quite a name, for, as at Straffan to-day, the work in every department was thoroughly well done.

Twelve or fourteen years ago the gardens at Mount Merrion were a treat to see, and many a pilgrimage has been made there to view the rare plants he grew so well. The choicest Orchids, Nepenthes, Sarracenias, Cephalotuses, and Darlingtonias, together with Ferns and fine-leaved exotics, could then be found there in perfection of health and beauty. The grassy lawns and the fine trees, Holm Oaks, Beech, Elms and Scotch Firs, were ever a joy to see. To walk up the avenue of great Elms seemed an approach to a royal palace, and a view from the hill above the little wood behind the old mansion, looking over Dublin city and over the bay towards Howth and the islands, on a clear and sunny day reminds one of the Mediterranean.

Of late years herbaceous plants and hardy flowers were extensively grown, and rare shrubs here attained to a size, freshness, and beauty not often seen in less well-favoured places.

But a change came over the place; plant-growing was not so much encouraged, and the rare plants had to make room for more profitable crops. The pet plants, mostly the gifts of congenial friends, disappeared slowly but surely, and, worst of all, the health of their devoted guardian also gradually failed. Ill health and a great domestic sorrow at last proved too much for his staunch and faithful spirit, and Mr. Welsh, unable longer to face the work of hot plant and forcing houses, retires to rest in his native land, carrying with him the hearty good wishes of all who had the privilege of knowing him.

He did many things well, but his skill in the culture of the Californian *Darlingtonia* was phenomenal. He had several fine examples of this rare plant from time to time (originally a gift from the late Dr. David Moore, of Glasnevin), and one of the finest examples ever seen was described and illustrated in *THE GARDEN* (Feb. 15, 1890). It had from thirty to forty pitchers, the largest being 3 feet 9 inches high, and the whole plant was the perfection of good health and vigour. It is doubtful whether the pitchers of this great Fly-trap ever attain to like dimensions even when at its best in its native habitat. B.

The English Flower Garden.—Design, Vines and Plants. Third edition, revised, with many new illustrations. London: J. Murray, and through all booksellers.

KITCHEN GARDEN.

SAVOY CABBAGE.

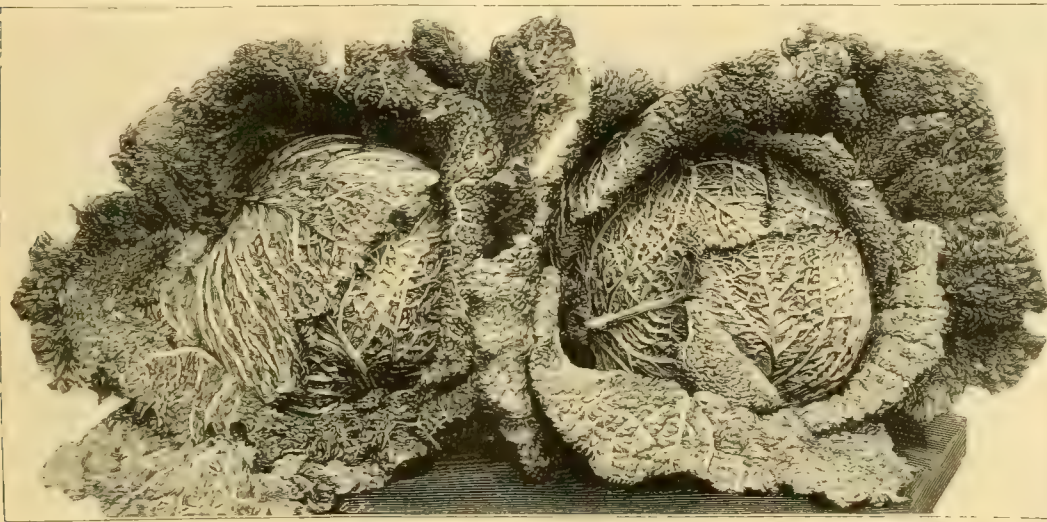
NEXT winter's prospects are none too rose coloured to those who look ahead and are cognisant of what is going on in private and market gardens. Never before probably has there been so much difficulty experienced in rearing plants in the open of the various members of the Brassica family. What early seedlings came up, thanks to frequent waterings, were quickly cleared off by the Turnip fly, and later sowings have fared nearly as badly. Those who early realised the difficulty they were likely to be in ought to have at once utilised spare frames for raising what plants they required, this being a good plan up to the second or third week in May, after which it is doubtful if it will work well. Brussels Sprouts being usually raised under glass and got out early, are not likely to be scarce, autumn Cauliflowers and Broccoli also being fairly plentiful, but main-crop and late Broccoli, Borecoles and Savoy are not.

too early, leggy plants, or, it may be, if the planting is done early enough to prevent this, early hearting in, no matter where planted, is the outcome. If the seed is sown late in April or during the first week in May, this is quite soon enough for most places, the plants being ready by the time the ground is fit for their reception. They ought to have fairly rich, moderately firm ground. With me they form a good succession to Leeks without any further preparation beyond levelling over the surface after the previous crop was cleared off. This season early and second early Peas will be off the ground quite soon enough for Savoy, and seeing that the latter do not last long after midwinter, these sites, if not wanted for Broccoli, may well be utilised for Savoy, especially if the latter were raised unusually late. There is no necessity to dig ground cleared of Peas or other early crops for Savoy, but after the weeds and rubbish have been got off and a surface hoeing given, drills may be drawn with a heavy hoe, filled once or twice with water, or, better still, liquid manure, and the planting be then done. I have had remarkably good

varieties I have already named, 12 inches each way being ample for either of them. Should the weather continue hot and dry, it will be found a good plan to give the plants in either seed or nursery beds a good soaking of water a few hours previous to moving them, and also to replant in drills previously well moistened. Plants that have been pricked out should always be lifted and transplanted with a trowel, but those drawn from seed-beds can best be replanted with a dibber, the soil being made firm about the roots in either case. Every second evening or so till the plants are growing strongly the drills about them ought to be filled with water, after which the ground may be levelled, or, better still, if the stems are long, soil can be drawn up to these from each side. Later on, if the plants present a blue, starved appearance, the furrows between them should have liquid manure freely poured along them, and this will soon alter the colour.

Those who have too few plants to put out and cannot well procure them elsewhere should try a plan that has frequently answered capitally in the case of Borecoles as well as Savoy, viz., that of sowing the seed late where the plants are to remain. The early and second early varieties are to be preferred for this experiment, the seed being sown thinly in drills drawn 1 foot apart and watered in advance of sowing. Keep the seedlings dusted over with soot and lime to ward off slugs and Turnip fly, and only lightly thin out. Should the autumn be favourable to late growth, large quantities of neat and very acceptable hearts will be available next winter, and even green tops will be appreciated.

W. I.



Savoy Drumhead. Engraved for THE GARDEN from a photograph sent by Mr. Norman Blake, Bedford.

Broccoli can be and is very often dispensed with, but not so Borecoles and Savoy. It is the latter species that would be missed most during the early part of winter, and which also would in my case be ill spared, owing to their being preferred on the dining table to Brussels Sprouts.

Savoy, if not too well grown, are of mild flavour and very tender when cooked, and none more so than the small early forms such as Tom Thumb, Early Dwarf Vienna, and Golden Globe. To these Early Dwarf Ulm forms an admirable succession, this variety being also excellent when cooked. Then come Dwarf Green Curled and Gilbert's Universal, the latter being the superior in point of quality; and the former, not requiring much room, also proving moderately hardy, is still worthy of general cultivation. Drumhead, of which a remarkably well executed woodcut accompanies these remarks, is indispensable on account of its lateness and hardness, but, all the same, is the coarsest of the lot.

Savoy generally succeed well on somewhat cool borders, and, in fact, these are the best sites for them in most southern localities, as they are apt to heart in long before they are wanted if given warm quarters, many being spoilt accordingly. Seed is often sown much

and exceptionally hardy Savoy from ground newly cleared of Strawberries, but these sites, being the likeliest to produce hardy Broccoli, are most often given up to the latter crop—rightly so too.

If large Savoy are most preferred, then by all means plant on heavily-manured, deeply-dug and only moderately firm ground, also allowing the different varieties plenty of room; but who cares for large Savoy? As before stated, it is the neat, close, but not solid hearts that are much the best when cooked, those great solid much-blanching and bursting hearts very often seen being more fit to go with Cow Cabbage. The illustration of Drumhead partly conveys what I mean, these not being overgrown and not too solid, and white in the centre. This variety must form a certain number of strong outside leaves, or it will fail to heart in properly, but if the plants are put out 18 inches asunder in rows 2 feet apart that is ample room. Supposing these are arranged at the back of a border or quarter, Dwarf Green Curled and Gilbert's Universal should come next, 18 inches apart each way being plenty of room for these, and rather more than they often get with me. Next plant Dwarf Ulm, allowing this variety 15 inches each way, and finish off with one or more of the early dwarf

so special, so that extra qualities, if such they possess, are not made up with extra and special treatment. The Pea under notice is of dwarf robust habit, the pods somewhat resembling those of Chelsea Gem, but differing in colour, English Wonder being a deep green. It is an immense cropper, and from seven to nine Peas are to be found closely packed within the majority of the individual pods. There will soon be (if in ordinary weather English Wonder proves as good as it has done with me this trying season) a great demand for it, and it will quickly become a universal favourite.—H. MARKHAM, *Mcworth Castle*.

Veitch's Perfect Gem Lettuce.—One of the best summer Cabbage Lettuces I am acquainted with is the above. Its colour is most distinct and of the deepest green, the hearts being perfect in shape and very heavy when fully grown. Those who have not yet grown Perfect Gem have yet to learn what a valuable variety it is for sowing during the spring and summer months. I commenced cutting splendid heads on May 20 from a spring sowing made in a rough frame March 15, protected only until the seedlings had formed their first pair of rough leaves. For a season such as we have experienced this cannot be considered other than satisfactory. The plants were grown on a narrow east border which is shaded after midday by tall trees and a lofty wall, which may have proved advantages rather than hindrances to their early development, particularly at the time of planting,

when the sun was bright and the ground unusually dry. Water could only be given a few times after planting, and the value of the afternoon shade was clearly apparent in the early establishment of the plants. It is some years since it was introduced by the Messrs. Veitch, and with so many sorts in cultivation it may not have been chosen so frequently by planters as its merits deserve. It is, I consider, fully deserving of the name it bears.—W. STRUGNELL.

Cabbage Enfield Market.—It was pleasing to read the words of praise bestowed upon the above excellent Cabbage both by "J. C. B." and "M." (p. 460). Bestowing too much praise on any very early variety, such as Ellam's, for instance, is apt to prove misleading to those cultivators who have had but limited experience and who turn to the gardening press for information. They may consider that this highly-praised variety is good for all purposes, and that no other need be grown. But they must remember a succession is needed to follow on the earliest cutting. Some varieties will give a succession from the secondary growths, but Ellam's is not well adapted for this purpose. Enfield Market, besides being a good second early, is good also for forming Cabbage sprouts. Nonpareil is another excellent variety for this purpose, and to my mind the most useful of all for affording a second crop of small heads. Unfortunately, it is rather given to bolting, but if not sown before the 21st of August, this will be considerably lessened. For secondary sprouts in the autumn from seed sown in May, the variety Etampes is also an excellent kind, the flavour being delicious. Another good old, but little-known variety is Winnigstadt. The value of this variety is its hardness. Sown at the same time as Etampes, I plant it for early winter use. Last winter or spring I had a somewhat singular experience with it, as "J. C. B." had with Enfield Market. After the main planting, the smaller plants being left in the seed rows were put out later to fill up an empty plot of ground, thinking these would be but little behind the main batch. They did not come on very fast, but they produced nice hearts fully three weeks earlier than Ellam's.—A. YOUNG.

MUSHROOMS IN CELLARS.

CELLARS are among the best positions that can be named for Mushroom culture. In some instances they are had good and in plenty from these places during eleven months out of a year, which cannot be said of any other sites not underground. The temperature of many cellars, in common with the famous Mushroom caves around Paris, never reaches injurious extremes, being comparatively cool in summer and genial in the winter, these conditions being most favourable to the production of good crops. It must be understood, however, that there are cellars and cellars. Area cellars are not as a rule so suitable as are those less exposed to the vicissitudes of the outward air, but all the same they can be made to answer well. For several years a friend of mine in Bath was very successful with Mushrooms in an area cellar, and would not have discontinued growing them had not the sanitary inspector discovered what was going on and forbidden similar proceedings in the future. Has "R. H.," who hails from a northern town, taken into consideration that forming Mushroom beds in a cellar means bringing a considerable quantity of decaying manure together under the street of a populous city, thereby most probably infringing sanitary laws which now-a-days are rigidly enforced? Personally, I believe that what effluvia there may be from horse-droppings properly prepared prior to being placed in a cellar is not worth noticing, being, in fact, very trifling compared with what is going on all round. All the same, officious inspectors are apt to make themselves disagreeable, and for this "R. H." must be

prepared if he starts forming Mushroom beds in his area cellar. Cellars that cannot be reached without entering a dwelling house are certainly not fit places for Mushroom beds, but there is no good reason why fairly deep boxes should not be firmly filled with well prepared manure, and after being spawned and soiled be duly transferred to cellars generally.

Most area cellars could be made to hold four good beds, these running from the entrance to the back wall. The width should be 4 feet or more, this allowing for a fairly wide pathway through the centre. Two of the beds should be on the floor and the others raised 3 feet or more above them. The wood-work to support them should be of a durable character, more especially the front uprights and the bearings. The front boards should be of deal, stout, or not less than 1 inch in thickness, and not far short of 12 inches in depth, while the flooring of shelves need not fit closely together nor be nailed down. Having several sites for beds admits of a long and close succession of Mushrooms being kept up during all but the very coldest and hottest parts of the year, those on the floor being formed first, one being made or spawned early in August and the others at intervals of about three weeks, or as the material can be collected and prepared. It may be "R. H." does not contemplate growing Mushrooms extensively at present, and being inexperienced in the matter he will do well to try an experimental bed before going to the expense of fitting up the place with raised benches. In this case all he has to do is to utilise either the back or one side of the cellar, the bed being kept well up together by means of a deep front board placed inside of a few stout stakes.

Beginners need to be told that very much depends upon the quality of the manure used for Mushroom beds and the way in which it is prepared. What is wanted for flat beds or such as are usually formed in cellars is plenty of droppings from horses in full work and fed solely upon hard and dry food. When they are being fed upon green food, and in particular largely upon Carrots, or are receiving physic, then the droppings are unsuitable, and if used, failure will almost be inevitable. A little of the short stained straw, or, say, to the extent of one-sixth of the bulk, may well be included, the whole being kept in a dry, open shed, or otherwise protected from saturating rains, premature fermentation being also guarded against till enough has been collected to form a bed. Supposing a shallow heap 8 feet long, 4 feet wide, and about 18 inches deep has been collected, this most probably would be sufficient to form a bed of the same length and width and about 12 inches deep. Commence preparing this by first throwing it up into a heap to ferment, which it will do in hot weather in about four days. Before it becomes violently hot turn the heap inside out, and repeat this every second day for another eight or ten days. Should the manure be found in a dry state when turned, and it is certain to become so if prepared during July and August, the former month being soon enough to commence the work of preparation, water it through a rose on a pot, otherwise the requisite steady fermentation will cease, and the manure, directly decay ceases, becomes practically spoilt for Mushroom production. On the other hand, if it becomes badly saturated with moisture, the superfluity must be got rid of by means of extra fermentation, or the vapour later on will destroy the spawn. Properly prepared manure should be only just moist enough to hold well together when pressed, but not wet enough for moisture to run out of it, and the smell ought also to

be inoffensive. If "R. H." has no facilities for properly preparing the manure before it is placed in the cellar, he ought to try to procure some that has heated slightly in a rather moist position and not the small bins connected with many small town stables, the manure in which quickly becomes over-heated, dry and musty. To this, somewhat fresh manure, out of which all long straw has been forked, should be added some dry loam or fresh garden soil to the extent of one part of soil to one of the manure. The latter absorbs the ammonia, and, in addition to preventing any strong smells, is also a safeguard against over-heating. In any case the bed ought to be made in layers, any lumps of manure being separated and a good trampling or beating with a mallet or the back of a manure-fork also given. Proceeding in this way till a height of from 12 inches to 15 inches is reached at the back, with a slight slope to the front, a good solid bed will be ready for spawning. Unless beds are thus solidly formed, it is not many Mushrooms that will be produced.

When completed, one or two trial sticks should be thrust well into the bed, and in the course of about three days these ought to be drawn out and felt in the palm of the hand, this being repeated in succeeding days. When it is found that the maximum heat has been reached and a downward tendency is apparent, wait till the plunged portion of the stick can be borne comfortably in the hand, the temperature of the bed being about 80°, and the time for spawning has then arrived. In anticipation of this, fresh spawn—a bushel or about eight bricks being sufficient for a surface equal to 10 square yards—should have been procured from a reliable source, it being a great mistake to buy cheap or stale spawn. Break the bricks into lumps near the size of a hen's egg and insert these flatly with the hand and just below the surface about 9 inches apart all over the bed, smoothing over the manure and beating it down firmly with the back of a spade. If there is any likelihood of the heat increasing if at all confined, delay casing over with soil for a week or longer, but it may in most cases be done at once with advantage. If fresh fine loam, obtained from under turf, cannot be had for soiling over the bed, then substitute good garden soil, preferably dug 9 inches below the surface. Not less than 2 inches thick of the soil should be applied, this being beaten down firmly, but not watered. Still keep the trial sticks plunged in the bed, and when the heat shows signs of having declined considerably, place a thick covering of soft straw litter over the soil, this serving to conserve both heat and moisture. Without any further trouble Mushrooms ought to be had in quantity in about six weeks from the date of spawning the bed. During the summer the warm outer air should be excluded as much as possible from the cellar, and when colder weather arrives, the same care ought to be taken to exclude cold air. M. H.

Tomatoes failing.—I send you fruit, also tops, of Tomato plants. I am at a loss to know what the disease is. The plants look like as if they had been burned. I have nine plants in one house, and six are badly affected and the others are going off also.—H. M.

* * This is a very bad and, happily, very rare form of disease, the exact name of which I am unable to give, but in its action it much resembles the fungus that attacks the leaves of Peaches and Pears, and known as a Roestelia. It is distinctly a fungoid attack, but being a form of disease that spreads rapidly beneath the epidermis or outer skin of the leaves, as well as that of the skin of

the soft stem and young fruit, it is beyond the reach of remedies that are sometimes effective against other diseases of a fungoid nature. No other disease so quickly wrecks the plants, the stems, leaves, and fruits becoming of a rusty colour, badly stunted and swollen, eventually presenting something of the appearance of "the curl" in Potato haulm. I should advise H. Millray to clear out and burn the rest of the plants, and also to thoroughly cleanse the house, and, starting again with healthy plants, the chances are he will never again have the same difficulty to contend with. This season, with its exceptionally strong sunshine, oftentimes accompanied by searching easterly winds, seems most favourable to the spread of diseases and insect pests, and not till a more genial state of affairs prevails will much headway be made against them. Sulphur in some easily applied form is most effective against fungoid diseases, especially during hot and dry weather, and by way of a preventive of a fresh attack of a similar nature to the last, "H. M." will do well to spray his Tomato plants occasionally with sulphide of potassium, using this at the rate of half an ounce to the gallon of water, the surroundings also being wetted by it each time.—W. I.

FLOWER GARDEN.

A TOWN GARDEN AT BOURNEMOUTH.

WHAT a wonderful year! Tea Roses in full bloom at the commencement of the month of May, Hybrid Perpetuals all out in the first week of June. Rhododendrons all over. Everything here and elsewhere proves that this year is the most wonderful one ever known. And I would now try to describe to you another wonderful thing—a town garden, situated within one minute of Landsdown, within five minutes of a great railway station, and yet a garden which surpasses anything I have seen for beauty and the variety of flowers and shrubs.

The name of the house is Weston Grange, and it is situated in the great Christ Church Road, an artery of traffic, ever resounding with the roll of great omnibuses and huge carts. Yet immediately you enter the front door the noise and rattle are lost, and you might be in the midst of the country. The house is a simple villa, but there in the large drawing-room are foretastes of the delights in store for one. Large specimen Fuchsias are on separate tables. From a window in this room we walk on to the lawn, and what a lawn, so large that at least two, if not three sets of lawn tennis can be played there; and this lawn, which borders the high road, is so sheltered with huge trees and flowering shrubs and conifers, that not a glimpse of the road can be seen. We pass from this into the first beautiful garden, which for want of a better name I would call the Italian, although the owner will not acknowledge the name.

Here in numerous beds are magnificent collections of Roses. I know (or used to know, perhaps some of my old competitors who read these lines may say) something of Roses, and I must say I was perfectly amazed at the growth and the healthy condition of these Rose trees. The Bournemouth sand is the very worst possible soil for Roses, and I have hitherto (in two seasons) failed to make them grow. But here they grow just like they do in Herts or Herefordshire. Amongst these are dozens of lovely bulbs, such as Spanish Iris in full bloom now, of all shades of lilac, yellow, blue and white. Beds of Begonias and some rare herbaceous plants are to be found here.

The south and west fronts of the house are covered with climbers, Roses, Jasmines, Escal-

lonias, &c. Strange to say, the Banksian Rose refuses to bloom well here. It appears to me to require the climate of the south of France, and to refuse to bloom in perfection here. No Cloth of Gold is, however, to be found here, the lady who owns this lovely garden having tried and tried in vain to bloom this shy Rose. There are here Roses that I never saw elsewhere. Amongst others, lovely blooms of a Tea Rose called Dr. Grill, which resembles very much Comtesse de Nadaillac. From the Italian garden we pass through a great wall to the old English garden. Ah, what a wealth of colour! Herbaceous plants of every kind are growing here luxuriantly, and flowers of every shade are in bloom. I have never in my life seen such Pæonies, and such Larkspurs. And not only those in bloom, but those that have yet to come on are here in abundance. Phloxes of every kind, Hollyhocks, Dahlias, Gaillardias, are all looking well. "You are never without flowers here?" I ask. "Scarcely ever; only in the very worst snow is the garden quite denuded." Here are to be found splendid specimens of Burning Bush (*Dictamnus Fraxinella*), of Eryngium Oliverianum, and of that new and beautiful Broom, *Genista Andreana*. The lady herself is the head gardener, but her lieutenant-colonel is a most intelligent man, who has raised a most beautiful Columbine, which he has named *Aquilegia chrysantha alba*, as it partakes of the form of *chrysantha*, although the flowers are much larger. It would weary your readers were I to give a list of all the beautiful herbaceous plants in bloom, so I will pass on. At the bottom of this garden are a most beautiful rockery and fernery, excavated out of the soil. The history of that rockery is very simple. "We wanted gravel for our walks; we excavated it here, and, instead of filling the hole up with rubbish, I made a rockery of it." And here hundreds of *Cyclamens* will in autumn and spring put forth their lovely blooms; every kind of rock Rose and other rock plants are to be found. Close by is what looks to be a huge bush, but it is not a shrub at all. It is *Alstroemeria aurea*, which grows in such profusion that it appears to be a shrub.

The garden is, by the way, large as it is, getting a little crowded. Pæonies are choking Bearded Iris, and other flowers want room. "What will you do for room?" I ask. "Oh, every year I commit a petty larceny; I steal a few yards from the Potato beds. You see I can buy Potatoes." "Yes, and you cannot buy these flowers." So each year there is a little addition to this charming garden.

There is very little glass in the garden; there are no grand flowers here, only those which everyone who loves flowers may buy and grow. All is simple, but all is lovely. At the end of this lovely old English garden is a beautiful grove of Pine trees. Here in the weather the most torrid, complete shade is obtained, and as one wanders amid these trees, the question again arises in one's mind, Is it possible that we are close to a large town, that if I pass through those doors I shall be able to hail an omnibus? Here in this wood the birds are singing, the insects are buzzing over the flowers and the air is heavy with perfume. Once more have we the proof that through enterprise, care and love, and yes I suppose I must add money, a lovely garden—a garden that makes my mouth water as I think of it—may exist in the very outskirts of a large town. JOHN B. M. CAMM.

Knole Lodge.

Herbaceous Pæonies.—A collection of the best varieties when in flower is really beautiful, the flowers being large and of different shades of

pleasing colours. It seems strange that whilst some varieties are deliciously scented, others have the old Pæony odour. This season, although the weather has been so dry, they have still maintained their effectiveness. To succeed really well, the soil must be deep and moist and the plants left alone. After being first planted it takes quite three years for them to become fully established. That portion of the garden where Pæonies are grown in large masses is apt to be dull after they go out of flower, but to obviate this I plant clumps of *Gladioli* amongst them.—A. YOUNG.

Iris culture.—"C," on p. 455, in his notes on Irises, writes thus about the German Iris: "It is a mistake to disturb the roots often, and few plants resent interference more than this class of Iris, and when transplanted through overcrowding it is quite two years before they commence to bloom again satisfactorily." This difficulty may be got over (1) by dividing a big clump into several smaller ones of two or three breaks each, and (2) by doing this and replanting immediately after the flowering season is over. July and August are the best months for transplanting German Irises. They make habitually two growths in the year, and if disturbed after the second growth will flower poorly, if at all, the next season; but if transplanted in midsummer they make good autumnal growth, get well established, and flower freely the following summer from strong growths. We do not think this is generally known by Iris growers.—WALLACE AND CO., Colchester.

NOTES ON HARDY PLANTS.

Dodecatheon integrifolium.—This is perhaps the smallest of the better-known varieties, but to my mind it is by far the most beautiful, excepting perhaps the white variety of *Meadia*, but which is not a common variety. Like many other primulaceous plants, the beauty of this largely depends on the conditions under which it is grown. It may grow and blossom under ordinary conditions, but to be seen at its best it should have a damp half shady position, with its roots in light, rich vegetable soil. It may be rapidly increased in many ways—first, by seed sown as soon as ripe; secondly, by cutting away large crowns from the roots and dividing the granular crowns when in a dormant state; and third, by rootlets, such as are left in the soil when the granular crowns have been severed from them. The handiest way to do this is to cut away with the crowns about half an inch of roots, leaving the lower roots *in situ*. In a short time if done, say, at midsummer, these soon bristle with verdant points and develop into little plants that are perhaps better left until spring, when they may be divided into little tufts and set where intended to remain. The crowns that were removed with their bits of root form ready-made plants for either pots or the open. The only thing to avoid with *Dodecatheons* is root-disturbance in the depth of winter. Either deal with them in midsummer with a view to their becoming established before winter, or leave them alone until they are pushing in the spring.

Dracocephalum grandiflorum.—Flowers of the richest blue, plant of a low stature and cosy habit; the best by far of its genus. It is said to be difficult to grow, but I disagree with this. It may be difficult to keep slugs away from it, but if you can do that, the plant may be expected to thrive under ordinary conditions. If you want to help it, you may do so by working in burnt loam amongst its roots, and the same may also be placed about its crowns. Old plants are apt to go off, but the better plan is to take offsets in June or July after flowering. These will be found to have few or more roots, and they grow freely when transplanted. Not only do these young plants last in good form for three or four years, but they give the greatest quantity of flowers.

Lewisia rediviva.—Take no notice of the leaves shrivelling up when the plants are flowering; at least, if you do, have no fear about the plants

dying. It is natural for the plants to disappear when the flowers are past, and, figuratively speaking, the sun of this bright little species sets when in its fullest splendour. The bright shining blossoms are usually the last sign of life. If the plants are left alone they will be seen to push into life afresh before Christmas. The mistake is often made of removing the roots, supposing them to be dead.

Gentiana pyrenaica.—This has flowers of a reddish purple, though I daresay the purple shade varies according to character of soil and degree of moisture. It is certain that, like *bavaria*, it enjoys a wet soil, and if you give it this, it is all the better for a maximum amount of sunshine. But do we not sometimes make mistakes when we think that because a plant loves moisture and we have given it that accommodation by either watering it freely or causing a supply to reach its roots when all the surrounding or immediate parts of the soil are left in a dry state? If we have given a plant plenty of sunshine and plenty of moisture, we have only succeeded, I think, in giving the requisite conditions when we have made all damp for a considerable distance around, for it only needs a moment's reflection to realise the fact that sun and moisture-loving plants in a wild state must have not only their roots kept constantly cool, but the hot and dry atmosphere largely tempered by the constant evaporation from the immediate locality.

Alyssum alpestre.—I feel certain that the value of this plant is still far from being appreciated. It has been a piece of the brightest yellow for many weeks this spring. The peculiar habit of the plant is commendable in a high degree. Its shoots lie flat on the surface and the leaves all face upwards like those of the creeping *Nemularias*. The flower-stalks spring up erect for a few inches and literally cover the plant with glistening lemon-yellow flowers. I am pleased to say that it is growing in favour and it is being more planted even by those who already possess it. For slopes and for stony ledges, be the positions dry or moist, it is admirable.

Galax aphylla.—Flowers of this are extremely abundant this year. They are very pretty and lasting, but it is well known that its leathery round leaves that become so charmingly tinted in the autumn constitute its most decorative feature. Now that we know so well how to grow this choice plant, and seeing that, unlike many other American plants, it shows its rich autumnal tints in this climate, why should we not employ it largely as a permanent edging plant to dwarf shrubs or in other such ways? We find, now that we have better learnt its culture, that it is really a fast-growing plant and one that can be freely increased by root division. Some of my friends have told me that *Shortia galacifolia* is much superior. This I know to be the case in reference to flowers, but the *Shortia* is not the prettier plant from July to Christmas. I consider them two distinct things, and I would advise every lover of choice dwarf plants to cultivate both.

J. WOOD.

Woodville, Kirkstall.

The Japan Primrose and its varieties are beautiful in the wild garden at Kew. A colony has established itself at the base of the mound near the Cumberland Gate entrance, and there in the shade of neighbouring trees and cool moist soil the plants bloom for many weeks, one tier of flowers opening after another, maintaining a display of great beauty. Such a spot as this exactly suits the Japan Primrose, which throws up strong stems and produces large, robust leafage. Great variety in the colour of the flowers exists, varying from pure white to intense crimson, with many intermediate shades; but the more showy are those of a crimson hue. A charming kind has white flowers with salmon eye, and in the rock garden the plants can be grouped together with advantage. By the side of a lake or stream it may be planted with the best effect, and will in time get quite naturalised. The Japan Primrose

is one of the easiest of hardy plants to grow and can be raised readily from seed.

Yellow tufted Pansies.—The contents of the flower hawk's barrow afford a pretty sure test of the popular fancy, and I have remarked how prominently the yellow varieties of the tufted Pansy figure in them of late. Yellow flowers appear to be increasing in favour, and it must be admitted that such varieties as *Queen of the Yellows* and *Ardwell Gem* are very effective in the spring sunshine. In a general way I am not in favour of planting hardy flowers in lines, but for edging small beds on the Grass, these yellow *Violas* are better than many things used for that purpose. If a bordering of any kind must be employed, tufted Pansies are certainly preferable to *Crocuses* or any other bulbous flower, which to one seem out of place under such circumstances. It is difficult to say which is the best yellow variety, but *Queen of the Yellows* will be hard to beat, the colour being rich and the habit good. *Bullion* is very good, and will, I think, be a favourite for lines and edgings. —J. C. B.

HERBACEOUS PÆONIES IN THE CHISWICK GARDENS.

A LARGE collection of the finer varieties of the herbaceous Pæony is grown in the Royal Horticultural Society's gardens at Chiswick. This representation of the herbaceous Pæony is important, and we have made a few notes of the best varieties as a guide to those who wish to know the names of good Pæonies. A glance at the collection shows that there are too many rose, rose-purple and allied shades of colour, and to get the more decided tones, it is not necessary to have a lengthy list of kinds, as too many rose-purple flowers in a garden produce a monotonous and unsatisfactory effect. A danger exists, too, in getting varieties with flowers that are touched with magenta just sufficiently to mar the bright shades one desires so much in beds or borders. Although much good work has been accomplished with Pæonies during recent years, it is no exaggeration to say that the old double crimson and blush have never been superseded in their line of colour. The deep, perfectly double flowers produce splendid effects impossible to achieve with three-fourths of the modern acquisitions. It may be urged against the very large-flowered varieties that the stems are sometimes too weak to carry the heavy blooms, and a sharp storm of rain, as we have often experienced, levels the plants to the ground. It was invariably the big-flowered kinds that were thus laid low, and therefore practically spoilt. Visitors to Chiswick will find the Pæonies planted together, and it is possible to make comparisons as to the best varieties. Considerable diversity exists, not only in the colour, size and formation of the flowers, but in the habit and character of the leafage. In these notes we have briefly alluded to the salient features of each kind, and avoided a long list of flowers that are too much alike in colour to have a place in the same garden.

It must be remembered that Chiswick is not one of the best places for Pæonies, this once comparatively rural suburb being now covered with houses, enclosing the gardens on almost every side; but the plants are blooming well and show the good results that may be accomplished within a few miles of the metropolis. They have for the most part got well established, and two years at least after planting elapse before they are in perfection. In the culture of this early June flower the soil must be thoroughly well prepared by liberal trenching, deep digging and incorporating with it a good supply of well-rotted manure. It is wise also to mulch the surface after planting, and in

summer, if the weather is very dry, give abundance of water. Pæonies delight in shade and are seen to advantage in woodlands, by drives and sheltered corners, but such positions are not essential.

In the following notes only those varieties are mentioned that possess distinct character, and it is hoped that they will prove useful to those who wish to know of the finer varieties, but cannot make a selection from long lists in catalogues. The varieties that have rather formal petals are the more effective in the garden, the notched, irregular flowers making in comparison a poor effect.

Amongst the white-flowered varieties or those in which there is the least trace of rose, bicolor is of note; the flower is very large and of robust aspect, perfectly double, and cream-white with pure guard florets. *Lucrece* is exceptionally free, and the plant is a good grower, the flowers not too large, neat, quite double, the guard florets with the barest suspicion of pink, and the centre lightly touched with lemon. It is not everyone knows the Pæony is very sweet-scented, more powerful in some kinds than in others, and the flowers of *alba plenissima* smell not unlike the Rose. They are large, the centre very full, white, and the guard florets delicate rose. A kind that we prize highly is *Marie Jacquin*. The plant is very dwarf, compact, and bushy, the flowers practically semi-double, pure white, which intensifies the golden yellow stamens. It would be a good kind to make a group of on the outskirts of a lawn or similar position. *M. Duroffe* is another compact and bushy kind, the flowers white and the stamens yellow. *Formosa alba* is a good double Pæony; the flowers are neat in shape, white, and appear freely above the base of deep green foliage.

It is amongst the rose and rose-purple varieties that the greatest discrimination is necessary, but the following are of importance. One wants good foliage as well as flowers, and this combination is obtained in *lilacina plenissima*, the foliage deep green, bold, and spreading, the centre petals white with pink guard florets. A handsome kind is *prolifera tricolor*, the plant although of fair height being very compact in growth, and the bold flowers, deep yellow in the centre, with guard florets touched with pink, are effective when a good clump is secured. Pæonies are not effective unless they are permitted to grow into very large masses, and they are averse to disturbance at the roots. It should be the aim of everyone who grows Pæonies to get quite bushes; then a wealth of flowers is produced that makes a distinct effect in the garden. *Comte de Paris* is conspicuous for its Rose scent, and the flowers are practically without guard florets, full and distinct, the colour rose-carmine. A very striking flower is *Comte de Nanteuil*, the flowers rose with deeper coloured guard florets. Such varieties as *Pysche* tell well in the garden; the flowers are not too bulky, but of medium size, very neat, and with a double primrose-coloured centre, the guard florets touched with rose. *Faust* is a type we care much for. There is a shade of salmon-pink in the guard florets, whilst the centre is almost white, with a few rose petals amongst them. *Triomphe de Paris* is an irregularly-shaped flower with bold guard florets, but it is a handsome kind, the colour soft yellow. A very effective variety is *marginata*. The flowers are of regular and neat shape, not too formal, however, and the colour brilliant rose, the guard florets bold and handsome. The *Queen* has flowers of sweet fragrance, and they are of a fine rose colour, whilst a note may be made of the variety *Mme.*

Ducel, which has full, rose-coloured flowers intensified by the deep green leaves. A very regular flower is Achille, the centre rich rose, very double, and the guard florets broad, forming quite a basin. Such kinds show up well in the collection. Emilie has the centre florets touched with a salmon shade, the outer ones rose. A striking shade of rose is seen in Duc de Cazes, the flowers rosy pink and the guard florets are broad. A dense flower, very double, is Marie Louise, the colour rose. Mme. Vil-morin is also of note for its fine rose-shaded flowers. We like those kinds in which primrose and pink are associated. Such a variety is Mme. de Galhou, the flowers large, double, primrose in the centre, the guard florets of a pink tone. Carnea elegans is too well known to describe. Very distinct is one named Walneriana, the flowers double, yellow in the centre, and rose guard petals—an effective, not to say striking variety for its good colour. Belle Chatelaine is beautiful for its shade of rose, the centre lemon colour and the guard florets rose.

The greatest care is necessary as regards selection with those varieties that have flowers of crimson-purple colour, or shades of it. If used too freely they produce an objectionably dead effect, as the colours pass to a dingy tone as a rule when their freshness is past. Still, we may mention a few that deserve notice, and one of the finest in the collection of many varieties at Chiswick is named superbissima, which is well worthy of a place in every garden. The flowers are very double and intense crimson-purple, a peculiarly bright and telling colour. Deep crimson in colour is Maréchal McMahon, the flowers large and effective. As regards compactness of growth, Prince Prosper is of note, and if the flowers are not very full, the colour is brilliant purple-crimson, the yellow stamens in deep contrast. Edouard André, crimson-purple, yellow stamens; Etendard du Grand Homme, rose-magenta, large, full, and fragrant, and the deep rose-purple Abel de Pujol may also be mentioned.

The single varieties are for the most part over, but anemoneflora alba and the type were beautiful, and we admire these charming single kinds when the colour is clear and decided. We advise, however, before any other kinds are planted to first secure the old double crimson, the blush coloured kind, anemoneflora and the feathery tenuifolia, a graceful plant. When these are in the garden then the list may be extended, selection being made from any of the varieties we have mentioned as conspicuous in the large and interesting collection in the Chiswick gardens.

Phacelia campanularia.—Plants raised from seeds sown in March are now in glorious bloom. There is no blue-flowered annual I am acquainted with that is so rich in colour and at the same time so free. As the seeds are small it is well to sow in a frame or in a cool greenhouse, pricking the young plants off into boxes, inuring them to exposure, and then planting them out in prepared ground, leaving the plants 9 inches apart in the lines, and the latter a foot to 15 inches apart. When treated in this way the plants form compact bushes and bloom finely. To sow the seeds in drills or patches in the open, and then allow them to grow up together thickly, is not treating this beautiful annual as it deserves to be. Amid subjects looking much the worse from the effects of the drought, *P. campanularia* has stood to all appearance little distressed. Presuming the plants have a good start, I think a dry season suits it, adding to the lustre of the flowers.—R. D.

A useful blue bedding plant.—The good old *Agathæa coelestis* does not appear to attract

so much notice as might be the case were its merits better known. For bedding there are several ways in which it may be turned to good account. As a carpeting to such tall growing plants as *Acacia lophantha*, *Grevillea robusta*, or the green-leaved *Dracænas* of the greenhouse section, this Daisy-like flower of a beautiful mazarine shade of blue is particularly well suited. It should not be planted in too rich a soil, otherwise it grows too freely and does not flower. It is also a very pretty mixture for white *Violas* or the double pink Ivy-leaved *Pelargoniums*. Being easily grown and at the same time tolerably hardy, this dwarf plant should receive more notice.—GROWER.

BILBERRY-LEAVED KNOTWEED.

Polygonum vacciniifolium is one of the hardiest and most enduring of rock plants, and one of the best for bold masses of rock where we want broad effects and much quiet colour.



Polygonum vacciniifolium. Engraved for THE GARDEN from a photograph sent by G. S. Symons, Chaddlewood, Plympton, Devon.

We noticed it very nicely used at Batsford along the rocky water margins, and it is always easily grown and pretty, though one does not thoroughly enjoy it unless it is seen in sufficient quantity to tell at some distance. The plant we figure is one of a series of excellent photographs sent us by Mr. Symons, Chaddlewood, Plympton, Devonshire, showing excellent cultivation of alpine flowers.

Papaver orientale and its varieties.—This magnificent herbaceous Poppy is just now magnificent. Strong plants which stood for two or three years are sending up large numbers of noble flowers, prominent being the large crimson variety named bracteatum, with the huge black spots at the base of the petals. Nothing can be grander in the garden at the present time than this splendid form, and plants do remarkably well in a good loam. Such varieties as Blush Queen, immacula-

tum, Prince of Orange, Royal Scarlet, Salmon Queen, and semiplenum vary both in size and colour, adding variety to the hardy border; but if any would grow but one, it should be bracteatum. Sown now and the seedlings well looked after will produce plants that will bloom next season, but they will flower much finer the following year. This glorious perennial Poppy is sometimes shown in a stand of six or twelve bunches of hardy perennials; three or four, or if large bunches are employed, make a striking bunch. Some cut their flowers when fully expanded, with the result that the petals will fall sometimes before the judging is accomplished. The best time to cut the blooms is in early morning just as they emerge from the calyx, and if placed in water they rapidly increase in size, and are in their best form at noon.—R. D.

Sweet Williams.—A small collection of Sweet Williams in the Chiswick Gardens is interesting, as it represents a fine type or strain of this old-fashioned flower. The individual blooms are large, quite circular in outline, and the colours, as a rule, decided. But raisers of new varieties should be careful not to aim at mere size, and in one or two instances the flowers were absolutely spoilt. It is important also to avoid speckled colours, which are very poor in comparison with the bright well-defined shades that abound. The most distinct and beautiful kind has a bold, well-shaped flower of intense crimson colour, set off with a thin white margin, the eye or centre also pure white. A good mass of this would be a distinct gain in the garden. White flowers with a veining of purple-rose or bright rose, the margin pure white, are effective, but none are richer than the deep crimson colours, either self or margined with white. There is much beauty in a fine strain of Sweet Williams, and the more pleasing and bolder types can be selected for growing in quantity.

TUFTED PANSIES AT WESTMINSTER.

THE great interest that has been awakened in tufted Pansies during recent years, and the recognition of their value and beauty for gardens large or small, have doubtless been the chief factors in the movement which has ended in the formation of a southern society that seeks to extend the culture of the flower. If a flower is to commend itself to many and have a wide circle of admirers, it must have some special value for gardens. Of all the types, strains, or varieties which can be grouped under the name Pansy the most commendable are those we call the tufted kinds. Whilst the society recognises them all, it will be wise to encourage the tufted self-coloured kinds, which are so easily grown, so lasting and pretty in the garden.

All those who were present at the show thought a very good beginning had been made, and we may reasonably look forward to great things in the future. Although the northern and trade growers' exhibits made up the bulk of the display, now that we have a society in our midst there should soon be something forthcoming from southern growers. Surely, if somewhat slowly, we are bringing our flower gardens more into harmony with times and seasons by planting them with seasonable flowers, and of these one of the best for the spring and early summer months is the tufted Pansy. Much more can be done to encourage their culture.

Looking through the larger collections at the show, there would appear to be a need of some weeding out. There is no denying that the best are the selfs, especially when we look at them from the all-important point, their effect in the garden. The nearer we keep to them the better. All Pansy lovers will be truly grateful for what Dr. Stuart has done in this direction. He has brought us as near to the self type as it is possible to get, first with *Violetta*, and happily with a growing family of the same high merit. Not only in flower, but in habit and tufted growth the advance is great, and Pansies of the *Violetta* race promise to become true perennials. In the latter days of May I took up a tuft of that lovely kind *Sylvia*, washed it carefully

out, and divided it easily into twenty-five young healthy plants, each having enough roots to start it on its new career. Some of them are now in flower. Of the many good Pansies the best exhibition in the show was the stand of Violetta kinds from Dr. Stuart. The parent itself was all through the show in every lot of selfs, and the newer acquisitions will without a doubt as speedily obtain the popularity they deserve. Especially noteworthy were Albino, a pure warm white, and Blush Queen, of the colour implied by the name. Aurea luteola and Christiania were yellows of slightly varying shades, but here there appears to be a danger of overnaming. They come near Sylvia, and when flowers are so near in colour, other minor points of distinction hardly justify new names. Queen of May comes very near Sylvia, while Canary Bird did not appear to differ materially from Violetta. Grand Lilas and Blue Gown in shades of mauve-blue looked promising. Mary Scott and Border Witch are not selfs, and looked like kinds that would be very inconstant. George McLeod figured well in one or two exhibits. It has a small flower, which is rayless and of a deep rich yellow hue. It is possible to give quite a long list of tufted Pansies that are useless for producing any effect in the garden. The first in this lot is, by the way, one of the newest, namely, Peter Barr. It was announced with such a flourish of trumpets as the most distinct kind ever introduced, that the stock was unequal to the demand. It was shown in many stands and varied a great deal. It certainly is most distinct, but the much-vaunted margin of violet round the yellow centre is a very dreary hue, and in some instances was a mere streaky dirty brown. After all, the way in which it achieves distinctness is only an approach to the form of colouring of what are classed as show Pansies. It may appeal to popular fancy, but never to good taste. York and Lancaster is quite what the name implies—a blotched and spotted thing that in most gardens would vary with each week and hardly ever be true to its real character. Not so bad, perhaps, are the shaded bordered and belted varieties. They are sometimes pretty, but not constant, as, for example, Skylark should have a belt of blue around its petals, but after a hot week I have had a large group upon which none of the flowers showed a trace of the belting they should have. Vernon Lee, Rob Roy, Sunrise, Dawn of Day, and others are good examples of inconstant kinds, which will doubtless have some admirers, but the multiplication of such sorts will only confuse and divert attention from the really good things.—A. H.

—It will be no matter for surprise to learn that the recent exhibition of these pretty hardy flowers at the Drill Hall led to the impression that there are already far too many of them. That estimate would, of course, be made in reference to the uses of these plants for bedding. That they have in themselves, apart from any such purpose, much that is pleasing and even beautiful, there can be no doubt. So far as relates to their capacity to make a pretty display at a flower show, there is no question. Too much so, indeed, are they there seen at their best, because every flower is set face outward in a somewhat stiff or formal fashion, and each bloom is specially selected for its form and the freshness of its colour or markings. But when we get these sorts into the garden and grow them either in masses or as edgings, as carpeting plants for other things, or in good-sized clumps in borders, we are then rather apt to regard these flowers, as they give what we term effect, and it is in that respect that it seems probable the verdict generally is "too many." What seems evident is that of late the efforts of raisers have rather been directed to the production of what may be classed as fancy or quaintly marked flowers than to those of striking self tints, and pretty as are these fancy forms when exhibited, we have to acknowledge that in the warm south they are so uncertain, that little dependence can be placed upon them; whilst the self-coloured flowers are always reliable. It may not be so in all cases, but nearly always these

Pansies are grown in gardens in a mass or some similar effective use, hence the greater favouring of self flowers. Now with regard to these, I do not see that any show material advance on the best of ten years ago. There may be one or two new shades or colours introduced, it is true, but when we see almost everywhere the old Bluebell still grown in great quantities, it is very easy to understand how moderate must be the advance, because even finer flowers and richer in colour have not always been associated with a stout, tufted, sturdy habit and freedom of flowering. Now of those shown in great profusion at the Drill Hall, I noted of whites the best to be Countess of Hopetoun, Snowflake, and White Flag; primrose: Lemon Queen, a pleasing soft tint; yellows: Prince of Orange and Bullion; soft reddish pink: W. Niel; heavy red with maroon-blotched centre: Princess Beatrice; pale blue: Ariel, a charming soft tint that merits all admiration; mauve: Duchess of Sutherland, which seems to be the same as a variety grown under the name of Mrs. Turner; lavender-blue: Favourite and Striata azurea; deep blue: Blue King, Chelsea Belle, Max Kolb, and Archie Grant; plum or purple: Ravenswood and Crimson Bedder. Neither of these seem so good as the old Mulberry. Some of the varieties named are hardly of the tufted class. Without doubt some of the spotted, blotched, or shaded varieties are very pretty, the best being Countess of Kintore, blue, shading to pure white; Edina, deep blue, shading to white, and a seedling unhappily not named, one of the best of the whole section, deep maroon shading to pure white. In any case the list includes a score of the very best varieties shown at the Drill Hall, and if in all cases their habits are as good as the flowers, they should constitute a capital selection.—A. D.

PINKS AT CHISWICK.

AN interesting feature in the Royal Horticultural Society's Gardens at Chiswick is the collection of Pinks from such well-known growers as Messrs. C. Turner, H. Hooper, R. Dean, T. Laxton, J. Lakin, and J. Forbes. The plants are in full bloom and worth notice, as they comprise not only the white varieties, but a large assortment of the best laced kinds that are now getting popular.

It is not necessary to say much concerning the culture of Pinks, as many notes have appeared in THE GARDEN on this point, but to get rich, well-defined lacing in what are termed the florists' varieties as distinct from the border kinds, the plants must be in a thoroughly good soil and well attended to. Often one sees on old specimens flowers that fail to show characteristic lacing, and to bring out this charming trait in its fulness, a fresh stock should be always on hand. Take the pipings this month and plant them out early in September.

At Chiswick the white border Pinks and the laced varieties are planted together, and we will refer first to the white border kinds. A great fault is conspicuous in almost every variety, and that is the prevalence of split flowers, more so in this respect than in the worst of Carnations. Some kinds are great offenders, and Her Majesty, a fine, bold, white-flowered variety, had scarcely a bloom intact, the calyx so burst, that if the weather were wet the effect of the plant would be entirely destroyed. It is evident that insufficient attention has been paid in the raising of seedlings towards getting varieties that bear flowers quite intact, not with the petals tumbling about as if they had been split open with a knife. The laced varieties, on the other hand, are not such offenders, and in a few of the kinds the flowers are not in the least split. Mrs. Sinkins is too well known to need description, and we shall not condemn the variety Her

Majesty, the flowers of which are of a good white, large, full, sweetly scented and produced with great freedom. Some plants of it are a mass of bloom, but the unfortunate "splitting" mars their usefulness for cutting. Raisers of Pinks should certainly turn their attention to getting varieties that will not burst their calyxes. In very wet weather one can in some measure put up with it, but not in a dry and sunny season, as the present. A very fine white Pink is Mrs. Lakin, and we made special note of it as a good garden variety. The flowers are flatter and smoother than those of Her Majesty, the petals broad, and it is not a "pod-burster"—at least not in such a pronounced degree as other kinds. Mrs. Welsh bears handsome flowers that split very little and the petals are smooth, whilst the growth is vigorous and remarkably free. Stanley is also a good white, but splits. Passing on to the coloured varieties, one of the more important is Souvenir de Sale, the flowers large, split considerably, however, fringed and of a very tender rosy colour, shading to white at the base of the petals. It is distinct and pleasing for its charming shade of colour. Many interesting seedlings come from Mr. R. Dean, and amongst them some good garden kinds, but as they are under numbers, we cannot refer to them individually. One named Hetty Dean is of value, the growth robust, and the neat, fringed rosy purple flowers borne on sturdy stems. A variety called Fascination is a good garden Pink; the flowers split considerably, but they are pure white, fringed, and the base of the petals crimson. The old white is, of course, included in a list of border Pinks, and besides those white-flowered kinds we should add also in a small collection Souvenir de Sale. Others may be included when a complete collection is desired.

Those who care for laced Pinks will find the collection here of great interest. We hope that this charming class will be more seen in gardens than is at present the case. The flowers are as a rule very sweetly scented, neat, and the calyx slender and perfectly intact. A few of the more striking kinds are the following, all having well-laced flowers. Beauty of Bath is a charming kind, the petals laced with a rose colour, and we failed to discover a split bloom. Beauty is well named. The flower does not split at all, the calyx large, slender, and the petals very pure white with a bold crimson-like lacing and an intense blotch of the same at the base. When in perfection, Esmeralda is a good kind, the flowers reddish in colour, and keeping their character well. A note may also be made of George White, the rose-purple-laced flowers being decided in colour. Empress of India represents a good type; the flowers do not split, although of fair size, and the crimson lacing is laid on a very pure ground. Eurydice is a finely-laced Pink, the colour rose-red, but more of a lake shade. It is not easy to exactly define the colours of the lacing in many varieties. If the flowers of Rosy Morn were not given so much to splitting, it would be one of the most pleasing of this type. They are full, large, with a rose-purple lacing. A bright and beautiful variety, very free, is Minerva, the lacing bold and distinct. Note was made of a variety named Bodiel, which is very chaste, the deep lake lacing in fine contrast. Modesty has a large flower, the lacing rose-coloured, and it is a pleasing kind. Henry Hooper, rosy purple; Mrs. Dark, intense maroon; Masterpiece, deep maroon; and Mrs. T. McCrorie, rose-purple, may be also mentioned.

Visitors to exhibitions must not judge the laced Pinks by their aspect when shown in a formal and horribly inartistic way. They are

very good garden flowers, bright, free, and of quaint character, interesting for the beautiful lacing of colour laid upon a pure white ground.

HARDY FLOWERS AT FOREST HILL.

When in the nursery of Messrs. J. Laing and Sons a few days ago we made note of a number of interesting hardy plants in bloom. The exceptionally dry season has been much against them, but Irises and many other interesting things are in beauty. We noticed exceptionally good tufts of *Cypripedium pubescens* and *C. parviflorum*, hardy Lady's Slippers that we are pleased to see more grown in gardens. These and *C. spectabile* form a charming trio, needing a well-drained peaty soil, moisture, and a fairly shaded spot. Both *Mecynopsis nepalensis* and *M. Wallichii* were of note, but they require more shade than is to be found in most nurseries. *M. nepalensis* was in full bloom, the flowers pale yellow in colour and produced in a sturdy spike. *M. Wallichii* is the more pleasing of the two, the flowers large and of a pretty blue shade of colour. The best position for them is in a recess in the rock garden where they are sheltered, partially shaded, and in a moist vegetable soil. Several plants of the pretty *Pinguicula vulgaris* were in bloom in a frame, and in flower in the open was a large collection of tufted Pansies. There is much talk as regards these plants requiring shade, but here, in the hottest sun, unprotected in any way whatever, they were in full bloom. Amongst the Irises, very beautiful was *I. orientalis*, noted in THE GARDEN, June 3 (p. 454). It is a splendid kind for colour, and flowering hard by were *I. sibirica* and the beautiful variety *alba*, which is like the type, except that the flowers are white instead of blue. Blooming freely were *Ramondias* in variety and *Campanulas*, of which *C. persicifolia grandiflora alba* is one of the most beautiful. It is a lovely flower, pure white, the bells large and produced very freely. A mass of it is a distinct gain either in the plant house or the open. Amongst the Thymes, *Thymus serpyllum coccineus* is of note. Insufficient use is made of the Thymes in the rock garden, where they make a mat-like covering to the stones and are studded in early summer with a profusion of flowers. Those of *coccineus* are reddish in colour, and a carpet of the plant is full of beauty. Years ago an edging to one of the beds was formed of it in the Royal Horticultural Society's gardens at Chiswick, and it is well adapted for such a purpose.

CARNATIONS.

LET the weather keep as it is or break into wind and storm, it seems hardly possible that we can have other than a very early bloom on these plants this year. Whether this early blooming may or may not upset the arrangements of exhibitors or of shows is of little consequence. The gathering together for exhibition for one short day of a few hundreds of flowers, even if the very finest grown, is of little consequence compared with the great interest found in the garden culture of many thousands, nay perhaps millions, of plants that at some time or other during a season bloom so beautifully in our gardens. To the many who grow Carnations for their intrinsic beauty and sweetness it matters little whether the flowers are at their best in June or July. On the whole, Carnations have not done badly. There are many plants that stand drought worse, and many that like warmth and sunshine less. There can be little doubt but that the plants on the whole are much more at home now with ample sunshine and little rain than they are when clouds prevail and the atmosphere is full of moisture. But one thing of some material value should come out of the dry season, and that is, if it continues to prevail, a good crop of seed. I think it was in 1887 that the very dry nature of the weather enabled a good crop to be harvested outdoors without the need of any artificial impregnation. Except

where flowers are protected from rain, I very much doubt whether seed is ever produced in anything like abundance, probably but very sparingly in wet seasons. Very little rain seems sufficient either to destroy the pollen or to damp off the fertile organs of these flowers. When flowers are housed under glass it may be easy enough to induce fertility by artificial aid, but even then a cloudy, damp season is anything but favourable, as the pollen is so susceptible to the effects of moisture. But with ever so much of success with pot plants it does not give a crop of seed for everybody. It is true we can usually get very good seed from the Continent, but that is not so good in flower production, on the whole, as is that which is home raised, in addition to which it is better to be able to grow our own than to be dependent upon Germany or elsewhere for what we need. Of course, among seedlings we always find some singles, also some moderately double, but some showing real advance as well as varied colouring or markings are certain. If we have to rely absolutely on seedlings for the production of new forms or colours, at least we can by layering increase good varieties indefinitely, and, happily, without at all weakening their constitutions. But for the good property of the Carnation which enables it to be increased by layers with such facility, we should have found it difficult to maintain stocks or perpetuate sorts. It does seem, however, that layering rather tends to increase strength of constitution if that work be well done, for each young plant having new life and independent forces rather gains in strength than loses it. Had we to be dependent for the increase of sorts upon cuttings or pipings, it is very doubtful whether the many fine varieties of to-day might not ere now have become extinct. It is especially valuable to us that we can utilise layering for Carnation propagation, because we have no assurance that through seedlings the parent will be reproduced. Whilst under glass flowers may be fertilised with own pollen or with that from other flowers, outdoors the fertilisation is performed both by the action of the air and by insects, and these would naturally produce much intercrossing and great variety.

It is a good feature in Carnation seed that, once obtained and well ripened, because somewhat hard shelled, it will keep good for several years; hence it is both helpful to tide over barren years and renders the raising of too many seedlings in one year undesirable. There is a deal of pleasure in raising Carnations from seed. Really, it is not absolutely essential that the plants be under glass at any stage. Seed sown out of doors in May, if duly cared for, will germinate in a fortnight and give strong plants to dibble out where to finally bloom in six weeks. The following summer every one will flower.

A.

FLOWER GARDEN NOTES.

UNLESS special facilities for watering are to hand, those will have the quickest show in the flower garden who have relied principally on hardy plants, or any which, being half hardy, were planted early in May. A few beds already gay, or that will soon be bright with colour, are filled with purple *Petunias* round *Spiræa filipendula*, *Lychnis chalcedonica* and Mrs. Sinkins Pink, a mixture of Countess of Kintore and Mrs. Bellamy *Violas* with pheasant-eyed Pinks, and the same shade of *Violas* with *Saxifraga umbrosa* (London Pride). *Spiræas*, although generally accepted as moisture-loving plants and to be seen at their best under such conditions, give promise of being a dense mass of flower this year; even clumps of scarce varieties that were split up and replanted last autumn are doing remarkably well. Surface drought has apparently little effect on them if their roots get a hold of the moist ground beneath. As *Pyrethrums* on light dry soil have not been seen at their best, it would be well to remind those who have, perhaps, only just started the cultivation of these handsome perennials that if they are cut lightly over as soon as flowering is done,

mulched and watered if the dry weather still continues, they will make good growth and bloom well through late summer and autumn. This mulching and watering will be absolutely necessary this year to secure autumn flowering, as I notice on most of the stools a decided yellow tinge showing in the foliage.

I am glad to record this year comparative immunity from the disease that attacks *Lilium candidum*. There is a slight sign of it in the foliage on old herbaceous borders, but fresh plantations made last season on new ground between hardy *Azaleas* are quite free. The advisability of noting from time to time, as successive families and individual plants come into flower, any improvement that could be made in the planting of herbaceous borders so far as regards the alteration of heights, or the increasing or curtailing of clumps of different subjects at the proper time, has been suggested on more than one occasion, and to this may be added a plea for greater variety. Beautiful as any one family may be, it is a decided mistake to allow it to monopolise the greater part of the flower garden; plenty of variety in plant and colour is acceptable on the border as well as in the flower-basket.

Border Carnations will be early this year; in fact, occasional flowers are (June 6) already out. I noticed in THE GARDEN of a week or two back a demand for Countess of Paris in quantity, and was rather curious to know if the supply was forthcoming. This is a lovely variety, but it makes little grass with me, and I have been some time working up a good stock of it. So far as growth is concerned, it does better in a lighter soil than we give any of the other varieties. Very stiff and formal tying-up is never to be recommended for border Carnations, but they want to be kept clear of the ground, and a small neat stake, with just a couple of ties to secure the bloom-stalk, is all that will be necessary. The wood of *Fuchsia gracilis* and the stiffest of the *Starwort* stalks make very good light flower stakes for temporary use; they are put on one side when borders are cleared late in autumn, and afterwards cleaned and tied in bundles. The weather during the past week has been very much against tender plants, and 2°, 3°, and 5° of frost were registered on successive mornings. Fortunately we have nothing out likely to hurt, except some small specimen *Heliotropes* that did not get their due share of hardening, and these are rather badly cut. The last of the bedding plants will be put out this week on the herbaceous borders on spaces occupied by *Star Daffodils*, variegated *Mesembryanthemums*, dwarf *Ageratums*, and *Lobelias*, and some *Cuphea platycentra* having been saved for the purpose. With the object of covering the ground quickly, it is well to run over *Verbenas*, *Petunias*, *Phlox Drummondii*, and other things requiring a slight pegging, and to get them down as soon as possible. Not only is the surface of the ground covered thereby more quickly and regularly, but in a season like the present root-action is greatly helped by anything that acting as a screen keeps the direct rays of the sun from the soil.

A good surface mulching and watering have brought the Sweet Peas along wonderfully fast, and a large bed in which they play an important part will soon be gay. There are big rounds (5 feet in diameter) of Mrs. Sankey and Princess Beatrice Peas, the intervening space—allowing sufficient room to get round the Peas for cutting—being filled with tricolor annual *Chrysanthemums*. If early flowers of Dahlias are wanted, they should be planted in a good border that was well manured and deeply worked, a little surface mulching and a good soaking of water being necessary. If grown principally to furnish cut flowers, the Cactus and pompon types are the best. Singles may, of course, be included where they are in demand, but although lighter, they do not stand so well when cut, and the others are the more serviceable all-round flowers. R. and H. Cannell and Lancelot, for instance, are splendid flowers for dinner-table decoration. Very fine beds can be made by a judicious selection of colours and due regard to height, making the centre with the

Cactus type with outer rings or lines of pompons. Special shrubs for the past week have been the Fringe Tree (*Chionanthus virginicus*), very full of flower; *Asimina triloba* (the Custard Apple), comparatively rare, and certainly more curious than beautiful; and the splendid *Deutzia crenata* flore-pleno, one of the finest of all shrubs. This shrub forms part of a strikingly handsome group on one of our borders—a fair example of unstudied effect which is worth a note. There are three plants of the *Deutzia* forming in themselves an attractive feature just at present. A quantity of *Delphinium* seedlings came up in the foreground; they were partially thinned, and a sufficient number allowed to remain to form a bold clump. They are nearly all of a fine dark blue strain, and the contrast against the *Deutzia* flowers is, I need hardly say, very pleasing.

Claremont.

E. BURRELL.

NOTES ON LILIES.

THERE is no tribe of plants more interesting than these, and if we extend the number to all the flowers which go by the name of Lilies in common parlance, there is scarcely any time of the year in which we cannot have them indoors or out. The extraordinary drought through which we have just passed has told very severely on many of this tribe, and where watering has been neglected there will not be much show of flowers this summer among the many and beautiful varieties which require moist earth to do well.

It is useless to make a bed for Lilies raised up above the surface of the surrounding ground. As a rule, they like a damp, well-drained peaty soil, and will do best, as we see them growing at Kew, in the peat beds prepared for Azaleas near the Palm house. *L. pyrenaicum* is over with me, and even that hardy sort was not so good as it ought to have been, because the ground got hard and dry about its roots. It is difficult to water everything in such a dry season, when there is more or less fear of water not lasting out, and my experience of *pyrenaicum* was that it would endure almost any hardship. It is a much-abused Lily, but, coming so early, its quaint Turk's-cap flowers with the bright red anthers are very interesting. The colour is pale and the flowers do not show themselves much in the crowded foliage. Nevertheless, I like this first of Lilies to flower, and I shall give it a better place in future where dry weather cannot affect it so much. Next in order of flowering come the fine and gorgeous umbellatum Lilies, which are now in full bloom. I grew some in pots this year, and they were most useful for room decoration and in the greenhouse. This Lily does not seem to have the objection to removal which is common to many of the tribe. They are evidently grown largely in Belgium and Holland, and they will flower profusely the season after they are imported. This cannot be said of many Lilies. Perhaps the old Madonna Lily comes nearest to it in this respect. It is wonderful how well imported bulbs of *L. candidum* will flower after their removal. But I sometimes think it is possible that it is on account of depending so much on imported bulbs that we hear perpetually of Lily disease. After all, home-grown plants are best, and it is in some cottage garden where the owner is proud of his Madonna Lilies that you will find them best grown and entirely free from disease. They are so cheap, that we are tempted to buy the bulbs in autumn, and for forcing nothing can be better than imported roots. On the whole, I think the beautiful *L. candidum* is the best of all our hardy Lilies, but it is not in bloom yet, and meanwhile umbellatum is making a great show, and its fine orange flowers are very attractive. *L. Hansoni* has just come into flower here. Its foliage has not been good all the season; that may be on account of the dry weather, though it has been well watered, but it seems to be a natural condition. *Hansoni* is more peculiar than beautiful, not having the graceful dignity of

the common Martagon. But the thick massive petals are very striking, and the colour is not a common one, being a good decided yellow with red spots. I prefer Lilies which are either trumpet-shaped or else more completely turned back like the Martagon, into the Turk's-cap shape. In this respect *Hansoni* is like *testaceum*, which is a hybrid, and, therefore, does not turn its petals right back into the piquant shape of the Martagon. Nevertheless, *L. testaceum* is a beautiful Lily, and it is promising well here notwithstanding the weather, but it is growing in semi-shade and it has been well watered. The Lily which has suffered most with me from the spring drought is *pardalinum*. I see it is sometimes called the Swamp Lily, so we can scarcely be surprised at its resenting the dry time it has experienced. But it seems to have an insatiable desire for water, and yet some of the finest plants I have seen were in Scotland on a high bank, where I should have thought they must often be dry. They were fully 6 feet high then. But Scotch air is damp and the winters are different from ours. *L. Thunbergianum* is already in flower, and though not so showy as umbellatum Van Houttei and Prince of Orange, is well worth growing. But they are succeeded by one of the most beautiful of all our summer Lilies—*chalcedonicum*, which some people call the scarlet Martagon. This Lily is said to be scarce; I cannot imagine why, for it increases rapidly, and will grow almost anywhere, provided it is partly shaded and has sufficient moisture. It is looking remarkably well with me this year, and promises to flower abundantly. I often come across it in old-fashioned gardens, but I suppose it was thrown away from our large gardens in the days of the bedding-out fever. It is certainly one of the best of our border plants, though it comes at the time of year when it has many rivals. I have moved this Lily successfully in May and June, and being carefully handled it went on the next year as if it were the better for the change—so much depends on the way in which transplanting is done. Some people lose all their Christmas Roses in the attempt to move them, while others will transplant them without any loss. The great thing is to do it as speedily as possible, to give plenty of water, and prevent evaporation as much as possible for a time by covering.

A GLOUCESTERSHIRE PARSON.

Trillium grandiflorum at home.—This was in full bloom here ten days ago. The woods were white with the flowers of this plant. I think someone described the flowers as transient, but they are not so here. I am confident the individual who gave it as his opinion that *T. grandiflorum majus* is but a large form of the ordinary plant from a large bulb or root was correct in his estimate. In these days of competition among florists little is required to constitute a new variety. Both *Trillium erectum* and *T. grandiflorum* are growing close together, and both are in bloom under a window facing the north-west and in the heaviest soils, with clay underneath and not far down. Here the *Hepatica*, *Tiarella*, *Asarum canadense*, and various wildings live amicably in company with a hybrid (?) *Clematis* and other garden flowers. I have found *Trillium grandiflorum* growing in almost clear leaf-mould and also in very sandy soil, thriving in both states. The flowers vary greatly in size, large roots sending up immense blooms.—ELISABETH LUNEX, *Hoosick, New York, May 30.*

Two Rhododendrons of great beauty, and in full beauty in the early days of June, are *R. Wilsoni* and *R. myrtifolium*, which are not seen so often in gardens as one might expect from their distinct and handsome aspect. *R. Wilsoni* makes a charming bush, comparatively dwarf, hardy, and very free. The leaves are abundant, narrow, pointed and deep green in colour; the flowers rich rose, small individually, but freely produced. When in full beauty this hardy *Rhododendron* is conspicuous, and it may be used to form a bold group in the garden. *R. myrtifolium* is

another fine, rather dwarf kind, which blooms at the same time as *R. Wilsoni*. It makes spreading growth, the leaves deep green, ovate in shape, and pointed, whilst the flowers are of a rose colour, the buds deeper, and in excellent contrast. The young growth is of quite a light green, and this tender shade should agree with the darker tone of the older foliage. We see little of such charming *Rhododendrons* as these in gardens, but they are worth planting well, being quite distinct from the kinds one sees in parks and other places.

Marguerites in pots.—These are remarkably well grown by many of the large trade growers who send them to market, the plants being, as a rule, extremely dwarf, and with a profusion of bloom upon them. These plants when changing hands will be found to take an almost unlimited supply of water. Without this they will quickly decline in vigour, then the fly that is so troublesome to them will still further gain ground, and eventually give the finishing touch towards extermination. If such plants can be so arranged as to have a saucer under them, they will be all the safer in this respect. Potted on and well cared for, the plants will continue for some years in a good state, old ones flowering equally as well as younger ones. As specimens of 5 feet and 6 feet through and somewhat less in height they are striking subjects for any purpose where it is possible to use them, whilst they will yield an immense quantity of flowers during the season. It is a pity that a yellow variety cannot be obtained with as good a habit as that possessed by the best types of the white form. As it is, the yellow forms always seem to run up tall and leggy.—GROWER.

GARDEN FLORA.

PLATE 914.

CLERODENDRON TRICHOTOMUM.

(WITH A COLOURED PLATE.*)

THIS beautiful hardy deciduous shrub is a native of Japan, and although it has been in cultivation for many years at Kew and at Messrs. Veitch's Coombe Wood Nursery, it is not nearly so well known as its merits deserve. No doubt the accompanying coloured plate will cause it to be more generally grown. In dry sandy soil the long-stalked, much-branched cymes are comparatively few-flowered, but in rich moist ground they attain a length of more than a foot. The late J. van Volxem has put on record the fact that in Northern Nippon, very high up the mountains, among the Beeches, he has found it with panicles 18 inches or more long. The plant is quite hardy, in the south of England at any rate, and attains a height of from 6 feet to 10 feet. It is very readily propagated by means of root cuttings, each piece about the thickness of a pencil and a couple of inches in length being almost certain to develop into a plant; it also suckers readily, and can be increased in this way. To make a good bush, however, it is necessary to constantly remove the suckers as soon as they appear above ground. The flowers are produced freely in autumn.

Clerodendron foetidum is the only other species of the genus which can be grown in the open air in the neighbourhood of London,

* Drawn for THE GARDEN in Messrs. Veitch's nursery at Coombe Wood by Gertrude Hamilton, September 10, 1892. Lithographed and printed by Guillaume Severeys.



and even then it requires a sheltered position at the foot of a wall. It is often killed back, but suckers are freely produced, grow 3 feet or 4 feet in height, and bear at their tips compact heads of deep bright lilac flowers. The specific name is slightly misleading, as the flowers are fragrant rather than foetid. It is a native of North China, and was first introduced to cultivation by Robert Fortune. In some books it is called *C. Bungei*, in honour of the botanist who first discovered and described it. *C. Bungei* is worth growing as a pot plant for cool conservatory decoration.

G. NICHOLSON.

THE WEEK'S WORK.

ORCHIDS.

THE high temperature has caused the insect pests to become very lively, and constant watchfulness is necessary to keep the plants thoroughly clean and in a healthy growing condition. It is the greatest error to repot or even surface-dress Orchids that have insect pests upon them, or even dirty leaves. Plants that are not syringed do in time gather a thin coating of impalpable dust, more especially upon the upper surface of the leaves; this if not removed is to a certain extent injurious, preventing the leaves from performing their proper functions. I make it a point to go over every leaf with a moist sponge to thoroughly clear the plants from dust and other impurities. I use rain water about milk-warm with a little soft soap dissolved in it. In moving and re-arranging the plants, see that each individual specimen is placed where it has sufficient space to develop healthy growth. I think it has previously been remarked that the taller growing *Laelias*, such as *L. purpurata*, *L. elegans*, and other varieties and species of these types, should be removed further from the glass roof. They do better upon the centre stage if there is one, and all the smaller growing species should be arranged on the side stages, a few of the *L. pumila* section being suspended from the glass roof in baskets. All those not repotted should be top-dressed. In every collection, however well it may be grown, there are always some sickly specimens, and the best advice to give when the common plants that can be obtained at a very cheap rate become sickly is to throw them away, and purchase healthy specimens recently imported. Who would care to spend time coddling plants in bad health of such things as *Cattleya Mossiae*, *C. Mendeli*, *C. Trianae*, and others? Recently imported plants are best, and I think it is better to purchase them after they have become established. I know amateurs who purchase Orchids just as they arrive from abroad, and those with little knowledge of the culture of such, would do well to let the importers start them; by doing so they would save themselves much anxiety as to whether the plants will recover from the effects of their journey; moreover, much time is gained. Others push their imported plants together in some out-of-the-way corner, where they cannot be well attended to, and the result of this is that they never have the chance to make a good start. I often purchase imported plants, and take a pride always in taking great care of them. The first thing to be done is to clean them thoroughly, putting them into flower-pots or baskets at once. Here, again, cleanliness is requisite. It is best to use the broken pots obtained from the pottery. If old crocks are used, wash them first and allow them to dry before being used. The plants are also placed in a good position, and at first extra shade is used and not too much air admitted. With care nearly all these plants will succeed and become established in less than twelve months. In repotting established plants, it is

almost impossible to avoid dealing with sickly specimens. The sickly and weakly plants should be placed together where they can receive special attention, for it is only by great care in watering, shading, &c., that they are likely to get into good condition again. Do not give much water and put extra shading over them in hot weather.

In the case of neglected Orchids, that is, those that have been allowed for years to grow in the pots until the entire mass of compost has become reduced to a fine black powder, it may be necessary to wash the sour stuff entirely from the roots before repotting them. Plants that have to go through this process need the same after-treatment as those which appear sickly; such plants may also be better repotted into small pots instead of large ones. Keep the plants well up, work the peat, *Sphagnum*, &c., well in amongst the roots, and make the plants secure by placing one or more sticks to them. Placing sticks to the plants is a necessary evil, and they should not be used if they can be done without, but tall-growing Orchids with few roots cannot be made to stand firmly without them. An over-supply of water at the roots would probably kill such plants. Water very sparingly until it is seen the new roots are running freely. By maintaining a moist atmosphere and the temperature quite up to the average, the plants will root more freely where the ventilators are not kept very close. In the daytime keep all the side ventilators shut and the top only open, it not being well to allow the heated and dry outside air to rush through amongst the plants. On close days with a moist atmosphere outside, more air might be admitted. On mild calm nights admit a little air all night at the side as well as at the top of the houses. If the *Anguloas* have not been repotted, see that they are done, and be careful to sponge the leaves well before doing so. The large flower-pots for these may be half full of drainage and the smaller ones about one-third; equal parts of good peat and fresh *Sphagnum* answer admirably for them. The leaves of these plants are very thin and liable to the attacks of red spider. If this weather continues, not much heat will be required from the hot-water pipes; even in the warmest house they need not be more than milk-warm; and but for the flowers damping, the heating apparatus would not be required either in the *Cattleya* or cool house.

J. DOUGLAS.

THE KITCHEN GARDEN.

COLEWORTS.—Some of the smaller varieties of Cabbage are often classed as Coleworts, but of the true Coleworts there are two kinds, the Hardy Green and the Rosette Colewort, the latter being the better for general use. A sowing should be made now, and another a fortnight later for late use. Raise the plants on good ground, so as to grow quickly out of the seed-leaf stage. The seed is best sown in drills, these being well moistened overnight. Coleworts follow well after early Peas or Potatoes, all the preparation needed being to clear off the weeds and level the soil down with a heavy hoe. If the soil should be hard and poor, then fork in a dressing of manure.

CELERIAC.—Directly the plants are large enough they must be set out. The conditions under which Celeriac thrives best are where the soil is rich, sandy, but yet somewhat firm. Where the soil is of a heavy nature it should be improved by either adding lighter soil or burned refuse and sand. Celeriac, unlike Celery, must be planted on the level. When ready for planting, each plant as it is taken up must have every vestige of sucker growth removed, or the result will be a divided root-stock instead of one large central root. In planting, the base only of the plant must rest upon the surface, but it must be fixed firmly. Arrange the plants 15 inches apart, afterwards giving a thorough watering; in fact, throughout the season water must be applied copiously. After the plants are established it is advisable to go over them and press the soil about the base, this

checking the suckers, which, should any appear, must be promptly removed.

ENDIVE.—This is quite early enough for the first sowing of Endive, as with a good supply of Lettuce on hand, Endive is not needed. The soil must be rich and the site well open to the sun, as then the growth made will be much more satisfactory than when the plants are crowded up in a shaded part of the garden. On heavy clay soils the sowings are best made on sloping borders. As soon as the plants are large enough they must be thinned out, these coming in for transplanting. Of varieties, the Round-leaved Batavian is the best, but the Green Curled is also good, it coming in very useful for garnishing.

CELERY FLY.—If once this is allowed to have a firm footing, it is with difficulty that it can be eradicated. Do not wait until the plants are badly affected before applying a remedy, but at once lightly dust over with soot, this being best performed in the early morning whilst the foliage is wet with dew. Whenever it has been washed off by rain, dust over again at once. It is the larvæ of the Celery fly which do the mischief, and it is to prevent the female fly from depositing her eggs that the plants must be made distasteful. Directly any of the leaf-mining grubs are seen at work, they should be crushed between the finger and thumb, or the small portions picked off and burnt.

YOUNG CARROTS.—Where these are in demand in a young and tender state, make another sowing of Early Nantes or any small-growing variety.

PARSLEY.—Although Parsley seed has germinated well, the seedlings have not yet made much headway on account of the dry weather. As growth will now be rapid, take the opportunity of thinning out the seedlings where at all crowded, as there is a vast difference in the quality of the produce from plants which have ample room for growth compared with those which are struggling for existence through being crowded up. The thinnings may be transplanted, these forming good crowns for winter. Plant firmly and water till established. Arrange the plants so that they may be covered in the winter. If the Parsley does not thrive well, either apply a dressing of lime or, better still, a little superphosphate, sprinkling it between the rows, afterwards lightly raking it or hoeing it in. If the soil is loose, lightly tread it, fixing the crowns well with the foot.

A. YOUNG.

FRUIT HOUSES.

MELONS IN HOUSES.—Plenty of sunshine suits these well, and as yet there has not been much trouble either as regards cracking of the fruits or the more serious evil of canker in the stems. Should, however, there be a sudden change from clear weather to dull, muggy or wet days, then the chances are one or both of the evils may have to be met. All the while the bright weather lasts an immense quantity of moisture is given off by the leaves, but directly there is a check to this transpiration, the excess moisture becomes a source of danger. In dull, showery weather, therefore, fire-heat ought to be freely turned on, a drier atmosphere maintained, a chink of top air be constantly left on, and less water applied to the roots. This will prevent the fruit of most varieties from cracking badly before it is ripe, but in the case of Hybrid Cashmere, Longleaf Perfection, Eastnor Castle, and the old Victory of Bath even this treatment may not prevent cracking. When this is the case, cut the fruit when it is changing colour or directly cracking commences, and ripen on a dry shelf in heat. Canker at the collar of the plants should always be anticipated by rather high planting and by the early removal of side shoots, leaving them till they have to be cut out inviting a decay of stems, if not exactly canker. For the same reason the primary leaves should be taken good care of, as a decaying broken stalk may easily make the stems follow suit. One of the best preventives of canker at the collar is the

keeping of the soil round the latter constantly dry. Should canker commence in spite of these precautions, the affected part ought to be scraped clean with a knife and the wound then dressed with caustic lime. Failing the latter, use Portland cement, this also drying the wound sufficiently for it to heal over properly. Sand, soot, or sulphur are simply useless as a dressing, and may easily do more harm than good.

FEEDING FRUITING PLANTS.—Melons are not unfrequently given less water than Cucumbers, when in reality, not being shaded in any way, they actually require more. They also need quite as much, if not more, feeding at the roots, an insufficiency of manurial elements being one of the principal causes of a difficulty being experienced in effecting a good set of fruit. What they want is a good supply of quickly soluble food in which phosphate of lime plays a leading part. Many of the special manures are not quick enough in action, and, all things considered, nothing for Melons equals pulverised night soil. If this is mixed in the second addition of soil, or even disposed well below the first ridge, more being supplied mixed with the top-dressings given when the plants reach the roof, the roots will find it out before the flowering stage is reached. As a consequence, and always provided there has been no stint of water, the fruit will set in succession, some being near the size of Peaches before the others are larger than Cherries; whereas, in the case of half-starved plants, the crop must be nearly all set on the same day, or some of the fruit will fail to keep pace with the rest and change colour accordingly. Failing night soil, use superphosphate of lime and nitrate of soda in equal proportions, 1 oz. to the gallon of water and thoroughly dissolved before being applied answering well. Peruvian guano, if good and used at a similar rate and in the same manner, is also a good, quick-acting manure, but none of them equals night soil. Keeping the roots active by means of additions of fresh soil to the sides principally of the old ridges, never allowing any part of the heap, other than about the collars of the plants, to become dry, are cultural details that ought to be complied with by those who wish to grow Melons of good size and superior quality. Nothing in the shape of drying off at the roots should be practised unless absolutely necessary to prevent cracking, and then in the case of the latest fruit on the plants only.

SUCCESSIONAL AND LATE MELONS.—Good plants put out now on a ridge of strong loamy soil should produce ripe fruit about the middle of August, and it usually pays better to do this than attempt taking a second crop from plants being cleared early of fruit. Dispose them 2 feet or rather less apart, remove all side shoots as fast as they show till the trellis is reached, after which lay in the best placed of them that form on the still advancing leading growth, and stop the latter when about three parts up the roof. The side shoots should be stopped at the first leaf beyond the female flowers and the latter be duly fertilised. Two, or at the most three fruits, are enough for each plant to produce, especially if superior size and quality are desired. Therefore, select the best formed fruit and early cut away the rest. The fruit-producing joint should be tied to the trellis with stout raffia, and this being done, no further supports will be needed for the Melons till a short time before they are ripe. Thus left alone they will not be disfigured in any way, and the simplest supports, or say a few strips of raffia or lengths of string, are sufficient to keep the fruit from breaking away. Very little if any overhead syringing is needed by Melons, and ought certainly to cease on the least signs of decay at the joints or canker at the collar. Sow more seed at once if a later supply of fruit is needed.

STRAWBERRIES IN POTS.—Runners are not very plentiful this season, but the fruit being cleared off early will give a good opportunity for taking good care of all that are formed. Those who have a good supply of last year's runners in nursery beds will do well to lift and pot these in quantity, that is, supposing they are of the right varieties for pot culture. Give them a good watering a few

hours before lifting them, and do not save a large ball of garden soil about the roots. Strawberries should have clean, well-drained pots—the 6-inch size being most preferred—and a strong loamy soil, to which bone-meal has been added at the rate of a 10-inch potful to one barrowload of soil, some half-inch bones also being placed over the drainage crocks. They ought always to be potted firmly and should be set out neatly in a sunny position and on an ash-covered bottom. The young plants to be layered should not be allowed to form and perhaps lose their first roots before it is done, and the plan of layering direct into fruiting pots, firmly filled with compost as just advised, saves labour and answers well. If they are first layered into small pots, use the 3-inch size and good soil. The plan of distributing a layer 2 inches thick of fresh, fairly rich, fine soil between the rows and layering into this is to be recommended, especially where large numbers of plants are required for the borders as well as for the pots. The plants may be fastened down either with stones or pegs, and, being kept uniformly moist, can soon be lifted in a strongly-rooted state.

PRACTICAL.

PLANT HOUSES.

CAMPANULA PYRAMIDALIS.—Those who are growing this fine old-fashioned flower in pots will do well to pay good attention to the plants now. The two-year-old plants which did not flower last season will make fine plants in a few weeks' time. I potted the larger of these towards the end of last summer into 12-inch pots, just in time for them to become well rooted before the winter set in. Those treated in this way have made much the best plants, the largest having as many as eighteen strong spikes upon them, the forwardest of which are now showing their flower-buds. Others potted on this past spring have made good progress, but not to such an extent. The flower-spikes of these also are strong, but there are not so many of them to each plant. All these plants are now being treated liberally with manure water, it being the time when such treatment is, I consider, the most beneficial in every way. I have found, however, that it does not answer to render the soil sodden with water; this *Campanula* will not take, comparatively speaking, so much water as the *Chrysanthemum* and other fast-growing plants. On the other hand, they should not be permitted to suffer at any time. Ours are now fully exposed upon an ash border, standing a good distance apart, for light and air are most essential towards securing a sturdy and compact growth. They have been staked for safety some weeks past, all that is now needful being additional ties as growth progresses. No attempt will be made to house any until a fair number of flowers is open; then even it is not necessary if a better use can be made of them out of doors. Plants for next year's flowering are now in 8½-inch pots and fairly well rooted therein; the best will, as last season, be shifted again later on. A few of these are showing for flower, but all they will do is to perfect one spike each, the individual blooms never being so fine even as on the older plants. Such stock should now be in as exposed a position as possible, being treated liberally, as in the case of the flowering stock, but not to the same extent, with any stimulant. The third size, or this year's seedlings, are not large enough yet to prick off from the seed boxes, but as soon as they can be handled this will be done, they being eventually wintered either in 3-inch or 4-inch pots. We were rather later than usual this season in sowing; still there is time to get a good plant by the late autumn. Those who may not have raised any seedlings, but who do possess flowering plants, can propagate from the roots as soon as the plants are out of bloom, and in the same manner as with *Seakale* by sets. I have never resorted to this method, but I know other gardeners who have done it regularly with success. Fortunately, no insects trouble these plants to any extent; therefore, they are all the more welcome where the accommodation is in a measure limited. Good

sound loam, with road-scrappings or sand and a little lime rubble, will make an excellent compost for them. Other sorts of *Campanulas* can be grown most successfully in pots, but with these a more rough-and-ready course can be resorted to with safety. For instance, *Campanula Medium calycanthema*, sown last July and pricked off later on in the open border, has now made fine plants, only a few showing for flower amongst them. I intend to lift some of these shortly with a good ball and pot them into 7-inch or 8-inch pots. Then they will be plunged in a bed of ashes in the open, remaining there until next spring, when another shift will be given them. These will do in any ordinary garden soil, but it is best to give them as good loam as can be spared. Those who have a lot of glass to keep gay in the summer will do well to look after this kind of *Campanula* also. Mr. Wythes has found it extremely useful in the large conservatories at Syon House.

Francoa ramosa is another most serviceable pot plant for July and August. I do not, however, find it quite so hardy as the first named *Campanula*. Flowering plants of this should be treated generously now they are pushing up their spikes, and it will be advisable to place them in a cool, airy greenhouse as soon as there is room, if up to now they have been standing outside, since danger from sharp frosts has passed by. Last year's seedlings should now be given a shift if not already done; these will then make fine plants next season. If seed has not been sown it is not yet really too late, but, of course, the plants would be rather small to winter. If sown early, however, do not let the young stock receive a check; these will do well in 3-inch pots until next spring. Cuttings also can be struck with careful attention singly in 2½-inch pots in sandy soil and not any excess of moisture. Cuttings taken now of *Pyrethrum uliginosum*, a fine hardy autumn flower, will supply most useful material in October. The time to take these cuttings is when the points of the shoots have broken out into a cluster of young ones, just as in the case of *Chrysanthemums*. Placed under glass in a cold frame they will soon strike root, when they can be gradually hardened off. Of annuals note should be made of the *Asters*, and some be secured where needful before all are planted out in the borders. After potting these, they can be plunged below the rims of the pots, three plants in a 6-inch pot being a good plan to adopt. Other hardy flowers could be noted which with the foregoing are invaluable, where a supply has to be maintained without adequate means of providing the same, amongst tender greenhouse plants that take more valuable room in storing.

JAMES HUDSON.

ORCHARD AND FRUIT GARDEN.

GROWING STRAWBERRIES.

TO THE EDITOR OF THE GARDEN.

SIR,—For some time past fruit growing has been advocated as an adjunct to ordinary farming (where the land is suitable), and in place of many of the crops grown in allotment gardens as more profitable. I am trying it on a small scale with the intention of greatly extending it, but before doing so there are several difficulties to overcome—how to pack the fruit, where to send it, supposing that your supply is greater than the nearest town can take. You have advocated the plan and taught us how to grow the fruit; would you or some of your readers answer the following relating to Strawberries which I have been growing? Will it pay to pack each fruit in leaves and small boxes, when you can gather 50 lb. a day and upwards from the open ground? Should fruit be consigned to a market salesman, leaving it to him to dispose of? Are the Covent Garden prices as quoted in the London papers to be relied upon as about the

price wholesale to the grower? Any hints as to packing, disposing of Strawberries, &c., will be thankfully received.

To show you, I consider my prospects of fruit-growing sufficiently good to trouble you to help me, as I think the industry might be entered upon in this neighbourhood, this year from 250 old plants and runners I have gathered 220 lbs. of Laxton's Noble and finished gathering June 3, having commenced on May 11. On the 15th, 18 lb.—large, well-coloured, handsome fruits—were sent to a salesman, but a very poor return—9d. per lb. The plants are grown in an open field, and the runners were put in after Potatoes on September 6, 1892—no manure, mulching, netting, nor watering. The labour has been very little on them. The land is considered to be worth about 40s. or 45s. an acre, being grass land. It lies to the south and is well sheltered. I have omitted to say the plot of land is planted with seventy dwarf Apple trees two years old, which are doing remarkably well. How would my earliness compare with well-known districts for fruit-growing? So much depends upon that.

PROFIT AND LOSS ACCOUNT.

£ s. d.	£ s. d.
To rent and taxes	By 40 lbs. at 9d. 1 10 0
one quarter of an acre ... 1 5 0	By 180 lbs. at 6d. 4 10 0
Planting runners, two days ... 6 0	
Hoeing two days ... 6 0	
Picking the fruit, packing and sending into the town at 1d. per lb. ... 18 4	
Total ... £3 1 4	Total ... £6 0 0

J. A. PORCH.

Edgarley House, Glastonbury.

Red spider on Gooseberry bushes.—"A. D." asks (p. 460) for a cheap and effectual remedy for the attacks of red spider on Gooseberry bushes. Here an espalier trellis covered with choice kinds of Gooseberries was badly attacked with red spider, but not the same insect that attacks the Vine, a much larger kind, one easily seen by the naked eye of a man on the wrong side of fifty. The other old acquaintance is not so easily detected. The lower part of the bushes assumed a scorched-like appearance, and on examination there were found myriads of spider completely covering the under side of the leaves. The bushes were effectually wetted with Bentley's soluble paraffin, using half a pint of the mixture to a three-gallon can of water, with the result that the next morning scarcely a spider was to be found with any life left in it. Bush trees of Rivers' Early Prolific Plum covered with green aphids have been syringed with the same mixture, and I find them now perfectly clean. Mr. G. Wythes first called my attention to this insecticide in the pages of THE GARDEN as an effectual remedy for American blight, and I have proved it worthy of his recommendation. If clay is reduced to about the consistency of paint by mixing the soluble paraffin with it, and applied with a brush to the cankered places, the blight is effectually destroyed, and it is also perfectly harmless to the trees. My previous efforts to destroy this most destructive insect had proved the remedy almost as bad as the disease.—WM. ALLAN, *Guntton Park.*

Gooseberry and Currant bushes.—Judging by the appearance presented just now of the breadths of cuttings of both Gooseberries and Currants, it looks as if there would be a grave dearth of young plants next autumn. I saw some of these a few days since, some 20,000 in all, of which not more than 20 per cent. had made

growth, the rest being quite dead. I was assured that in many districts the case was still worse. That being so, young bushes will be scarce and highly priced next autumn. Then, having regard to the present effects of the drought in checking the usual summer growth and in developing spider, which has been in many districts terribly destructive to the leafage, it looks as if it would be difficult to obtain wood next winter stout enough to make decent cuttings. For that additional reason there may be of necessity a lull in the supply of bushes for a year or two, for many hundreds of thousands are in ordinary seasons raised from cuttings and planted out, especially by the market trade. In spite of the frosts, drought, and spider there has been a fair crop of green Gooseberries, which have sold very well. Spider does not seem to respect sorts, but has served all alike. The worst is now done, and only heavy rains will serve to resuscitate the bushes, but, as happens after a destructive attack of caterpillar, two seasons will be needed to enable the bushes to regain their original fruitful form.—A. D.

Tying up bunches of Grapes.—I should not have thought that there were two opinions about the expediency of tying up the shoulders and parts of the bunches of Grapes, except, of course, in the case of very small bunches. Every bunch beyond half a pound is, in my opinion, improved by having its two uppermost branches tied up. In the case of late varieties, such as Alicante, for example, I do not see how it can be avoided, not merely for the sake of appearance, but to admit air amongst the berries to facilitate their keeping through the winter months. In the case of Gros Guillaume, I have at the present time at least twenty such supports to one bunch and consider it much improved in consequence. I fail to see how bunches of from 1 lb. upwards can be set off to the best advantage without such supports. I never experienced any difficulty in removing the ties from exhibition bunches. There are several methods of shouldering practised, but in my opinion none equals that of using narrow pieces of bast made secure to that part of the bunch needing support by a rather wide loop formed by making a double knot. In this way the matting is more easily removed with the point of the Grape scissors than if it were tied close to the stem. The worst form of support is that employed by some persons, who use builders' laths split into narrow and thin pieces about 3 inches long and one-eighth of an inch wide, cut in V-shape at each end. One end fits on to the main stem of the bunch and the other supports the shoulder. These slips of wood are at times rather difficult to insert without causing injury to the berries by rubbing them, thus spoiling the bloom. In tying up the shoulders of the bunches, some inexperienced persons are apt to raise them above the level, thus lifting the point much higher than the main stem of the same shoulder, therefore impeding the natural flow of sap to that part of the bunch.—E. M.

FRUIT & INSECTS.

I FEAR I live in a less favoured district than "A. D." as regards insect pests on the fruit trees. This, however, is owing perhaps in a great measure to the excessive drought we have here experienced since March 3. Since that time we have registered but 0.79 inch of rain, this quantity having fallen on seven days, leaving the remaining eighty-five days rainless. Such unseasonable weather, I think, is all against fruit culture generally and decidedly in favour of the spread of insect pests. I never saw the Apple and Damson trees in such a state from the attacks of green, brown and black aphides. In many cases the leaves are quite curled up all over the trees. The second-named of the aphides appears to be the most common on the Apple trees. Except in the case of small trees, hard syringing is out of the question. Black fly upon the Cherry trees has been plentiful, but in the case of these trees we can cleanse them, as they are all against walls, and thus easily accessible with insecticides

of an approved kind. Caterpillars have done but little damage as compared with some years. The leaves on some Apple trees were riddled early in the season, and so were some of the fruit by the same insect. Happily, this has ceased with the exception of a little red spider. Gooseberry bushes are in a sad plight in some gardens, being entirely denuded of their leaves. It is not only this season's crop that will suffer, it is the next year's also, as without sufficient foliage the tree cannot perform its regular function of forming fruit-buds. Caterpillars have wrought much mischief to the foliage. No one need be troubled long with the Gooseberry caterpillar if he will but dust the parts affected with heliobore powder, afterwards thoroughly washing the trees with clear water to cleanse them of both powder and insects. Although red spider bears—as it should do in many instances—the blame for the deplorable appearance of the Gooseberry trees, I am positive that in some cases there exists a great mistake regarding this pest. In our case many of the trees had the appearance of being spider-infested, but upon a close examination I failed to find a single spider on many trees. The cold winds experienced just at the time when the leaves and fruit blooms were developing should be blamed for the unsatisfactory state of the trees. The growth in its tender state was crippled, the trees receiving a severe check, rendering growth almost nil and retarding the full development of the leaves also. In our case I at once thoroughly soaked the soil about the trees with liquid manure, applying a heavy mulching of manure afterwards. The leaves were also thoroughly washed with clean water applied with some force through the garden engine. The result of this treatment has been to give us an undiminished crop of fruit, and in many cases a fair promise for next season's supply also.

The best insecticide that I have used is one of my own concoction, a simple one, and certainly an efficacious one. I place a 2-lb. parcel of tobacco paper in a bucketful of hot water, pouring off the juice as the water becomes charged with the nicotine, refilling the pail as often as the water is discoloured or until all the strength is extracted from the paper; 3 lbs. of soft soap are then dissolved in hot water and mixed with the tobacco water. This is sufficient to make 40 gallons of insecticide. I apply it in the evening at a temperature of 80° with a hand syringe. The next morning I well wash the trees with clear water, and find but few of the enemy left. It cannot be said that the remedy here named is an expensive one, 40 gallons of insecticide costing but 3s. I know it is much more efficacious than many of the highly lauded remedies, which are, I fear, got up to sell only.—E. M. S.

—As far as my observations have gone regarding the attacks of insects on fruit trees and bushes, they have not been nearly so prevalent as in some other seasons, the exception being red spider on the Gooseberry bushes, and this not to any serious extent. According to reports in some other parts of the country, caterpillars have been committing serious depredations, so we must consider ourselves fortunate. I quite agree with the observations of "A. D." "that had all the insecticides advertised the merits attributed to them, harmful insects would ere now have been entirely destroyed." But this is far from being the case, and after experimenting with several I am falling back on some of the older remedies. For green and black aphides a decoction of quassia and soft soap is as good or better than some of the more expensive. This season I was prevailed upon to use a special insecticide upon our Peach trees on open walls. After constant applications the aphids was diminished but very slowly, but on resorting to my old remedy of a decoction of quassia and soft soap a clearance was soon made. I think much may be done in getting rid of insect pests by winter dressings. I make a practice of syringing all wall fruit trees without exception with petroleum and warm water, with a little soft soap added. Caterpillars are the worst to combat with, and, as stated by Mr. Burrell, hand-picking is the only remedy, ex-

cepting, of course, the spraying with poisonous compounds, and which many people do not care to use. Some of the small birds are good friends to the fruit growers in hunting after caterpillars.—A. YOUNG.

THE STRAWBERRY CROP.

GATHERING has now fairly commenced in the home counties, and abundant supplies have been coming in for several weeks past from the warm



Notholaena distans.

ground of Hampshire. The fact that really good fruit has been making 1s. 6d. and 2s. a pound is a proof of the inferior quality of out-door fruit generally. It could not be otherwise. Rich food and sunshine without plenty of moisture at the roots will not give quality. The majority of the field crops in the home counties have not had more than an inch of rain on them since the plants started into growth. The wonder is that they have been able to perfect fruit at all, for, of course, field culture is very different from garden culture, as it is impossible to water the plants artificially. As a fact, acres have been ploughed in, the foliage being roasted to a cinder. I saw some that had suffered in this way, and very curious they looked, there being scarcely any green leaves left, and the berries—some roasted to a coffee colour, and none larger than a cob-nut. It is, however, mainly three-year old plants that have gone off in this way. In many soils a crop can scarcely be depended on the third season, and last season was so trying, that old plants could scarcely have enough stamina in them to resist this phenomenally dry spring. It is only where watering has been regularly practised during the swelling period that anything like fair crops will be had. Even if rain fell abundantly at once it could hardly influence the main crops to any appreciable extent, as they are so far advanced. The heaviest yield will probably be in the northern counties, where more rain seems to have fallen and the crops are

in the stage to be benefited by them. There can be no doubt that Strawberries will be dearer in July this season than has been the case for many years. In the present state of the crops in the southern counties only the latest varieties will be in bearing at that date. J. C. B.

PACKING AUSTRALIAN FRUIT.

IN pursuance of a request that I would get together a small jury of experts on fruit and fruit packing, the following gentlemen attended at the Imperial Institute on Friday, June 2: Mr. Philip Crowley, F.R.H.S., F.L.S., F.Z.S., &c., chairman of the Royal Horticultural Society's fruit committee; Dr. Robert Hogg, LL.D., F.R.H.S., F.L.S., &c., author of "The Fruit Manual" and a member of the R.H.S. fruit committee; Mr. George Monro, F.R.H.S., importer and salesman of fruit, Covent Garden Market; Mr. James Webber, F.R.H.S., importer and salesman of fruit, Covent Garden Market; Rev. William Wilks, M.A., F.R.H.S., Master of the Worshipful Company of Gardeners, secretary of the R.H.S. and a member of the fruit committee.

The questions laid before them were—

- 1.—To decide on the relative merits of the packing and general condition of samples of Apples and Pears from Melbourne.
- 2.—To furnish useful hints (if any required) for the better packing of the fruit, and its arrival (if possible) in better condition in future in this country.
- 3.—To offer suggestions as to the varieties sent.

On the first head they were unanimously of opinion that the samples sent from Tumuc Valley, Pakenham, were both the best packed and in the better condition.

On the second head they remarked that they were unable to commend the packing of either parcel. In the Neilson samples each fruit was enclosed in a paper bag, and the bags wedged in the cases with paper shavings. They considered bags in themselves undesirable, as preventing the escape of the necessary moisture sweating out of the fruit. The paper of these bags was also of a kind calculated to retain moisture. The Tumuc samples were loosely wrapped in squares of paper, which was considered the right method, and the paper was of a much better quality for the purpose. The committee thought tissue paper the best. The "padding with paper shavings" was considered unnecessary and tending to retain moisture and prevent free circulation of cold air, and in the cool chamber in transit. The committee recommend that the fruit be packed earlier, *i.e.*, that it should be in a less ripe state when packed: that each fruit should be folded in a square of tissue paper, and that the fruits be then closely and firmly packed together in the cases, *no padding whatever being used*, save just sufficient at the sides to prevent the fruits shaking out of place. The sides of the cases should be made of two parallel boards, with a space left between them to allow free exit of moisture and ingress of air during transit. The committee attached the greatest importance to the words underlined. It should be mentioned that in both the Tumuc and Neilson parcels the Pears were all absolutely rotten and arrived all in a mash; whereas, some sent a week or two earlier, only wrapped in tissue paper, with no padding, but with side ventilation to the cases, were still in almost perfect condition.

Under the third head, the varieties sent were London Pippin, Sturmer Pippin, Rome Beauty, Stone's Pippin, Jonathan, and Adams' Pearmain (it was said by a gentleman from Melbourne that Adams' Pearmain was called Dutch Mignonne in Australia, but there was no question with the committee that the fruits were Adams' Pearmain, and had nothing to do with the true Dutch Mignonne). Of these varieties Sturmer had arrived in by far the best condition, leaving in fact little to be desired; and London Pippin in the worst, there being very few perfect or even passable fruits. The other varieties were all more or less woolly.

Jonathan is a very attractive-looking Apple, and if it could be sent over in a less mealy condition would no doubt sell; but, judging from the samples, Sturmer will prove by far the best market fruit. The same remark applies to Adams' Pearmain as to Jonathan.

With regard to the cases used, the wood was considered sufficiently good for the purpose, but the ventilation at the sides, as in the Tumuc samples, was considered a *sine qua non*. It was incidentally remarked that much of the Tasmanian fruit lately sent has been spoiled by the very rough insides of the cases pressing unequally against the fruits. A specimen of a Tasmanian case was pointed out, the sides of which might be described as almost corrugated. Whether this be due to the very hard kind of wood used in Tasmania, or simply to the coarseness of the circular saw used in cutting the boards, the committee were unable to say.

Signed on behalf of the committee above named—W. WILKS, Sec., R.H.S.

— At the Imperial Institute a number of fruit experts and others assembled lately, at the invitation of Mr. L. L. Smith, the representative there of the colony of Victoria, for the purpose of deciding on the respective merits of some cases of fruit sent over here on the steamship *Orient*, under the conditions of a prize offered by the International Wine, Fruit, and Grain Exhibition at Melbourne, for the best system of packing fruit for export, the test being the comparative excellence of condition on arrival. Two competitors had entered, and of these one sent four cases of Apples and one of Pears, though as the Pears had become rotten they were not brought into the competition at all. The Apples comprised about six different qualities, but they had evidently been packed when too ripe, while the senders, not content with placing each Apple in paper, had forced paper shavings into every possible nook and corner



Notholaena lanuginosa.

in the boxes, thus preventing any current of air from passing through, and causing over-heating. Some of the boxes, too, had not been properly constructed. The only case which arrived in thoroughly sound condition was one of Sturmer Pippins, sent from the Tumuc Valley orchard, Pakenham, to which orchard the prize was awarded. The exhibits showed that the growers in Victoria have still a good deal to learn in the choice of varieties suitable for export, and in the matter of packing, but they may be expected to profit from

the results of such experiments at that decided upon on Friday. With regard to Apples, Victoria is at a disadvantage as compared with Tasmania, with whom, apparently, she wishes to compete in the English market. Victoria being much warmer than Tasmania, her Apples are softer, and have not the keeping qualities of those grown in Tasmania; but some of the harder varieties, such as the Sturmers shown on Friday, should prove suitable for export, and to these the Victorians will probably find it better to devote their attention. On the other hand, Victoria has the advantage over Tasmania in respect to Grapes, though here also growers and exporters are still in the experimental stage, with good prospects, however, of final success. It may be added that visitors to the Imperial Institute will find in the Victorian section a varied assortment of canned fruits, preserves, meat, &c., which afford still further evidence of Australia's capacities as a food producer.

FERNS.

NOTHOCLÆNAS.

I AM in receipt of a bundle of specimens marked *Nothoclænas* from Alfred Simpson, asking for their names and how to grow them. No. 4, marked *N. tenuis*, is *Myriopteris lentigera*; No. 6 is *Cheilanthes viscosa*; and No. 8 is *Myriopteris vestita*. *Nothoclænas* would seem to be nearly allied to *Cheilanthes*, but they have, as a rule, more tomentose fronds and a much more imperfect indusium; otherwise there is not much to separate them. I recommend them all to be potted in peat and loam made sandy, in the proportion of two parts of peat to one of loam, and to this I would always add some lumps of sandstone, draining the pots with the same material. They like a fair quantity of water at all seasons. *Nothoclænas* under cultivation thrive best in a moist atmosphere, but they dislike water overhead; indeed, if the plants are constantly syringed, the pinnules turn black and discoloured, and the fronds get weak and eventually die.

N. LANUGINOSA (No. 1 of the set) is a very elegant plant, a native of Madeira, Teneriffe and the Canary Islands. It thrives well if kept in the cool fernery. The fronds, produced from a short, decumbent growth, are from 6 inches to 1 foot in height and nearly 2 inches in breadth, the pinnules being deep green and smooth above, slightly brownish below and densely covered with white woolly hairs, which give it a very elegant appearance. This plant, I have found, does not grow unless it has limestone or old mortar in considerable quantity in the potting soil.

N. ECKLONIANA (No. 2), a somewhat rare kind from the Cape and Natal, ranks as one of the most beautiful of the genus. When grown well the fronds are each some 12 inches long, the pinnules deep green on the upper side, clothed beneath with narrow scales, which are white in the young fronds, but assume a brown hue with age. This plant thrives best when its creeping rhizome is planted in an elevated position amongst some sandstone in the cool fernery.

N. TRICHOMANOIDES (No. 3), a native of the islands of Cuba and Jamaica, is another most beautiful plant, requiring stove heat. Its fronds, each from 12 inches to 18 inches in length, are pendent. It makes a most beautiful basket plant. The fronds are pinnate, oblong and coarsely toothed, deep green on the upper side and clothed below with a white farinose powder and brown scales, having a continuous marginal border of black sori.

N. SULPHUREA (No. 5) is a small growing plant of great beauty, said to be a native of Peru. Some few years back this was frequently to be met with under the name of *Cheilanthes Borsigiana*, but it is

now seldom seen. The fronds are each from 3 inches to 6 inches in height, the upper side deep green, and the under side thickly coated with a bright yellow farinose powder. It is a small growing plant of rather a delicate constitution. I have found it thrive best in moderate heat.

N. DISTANS (No. 7) is an exceedingly elegant slender growing plant that appears to be scattered about in Australia, New Zealand, and New Caledonia. The fronds grow to some 12 inches in length, although I have the plant gathered in the Isle of Pines with dense scaly fronds not more than 2 inches in height. Under cultivation I have usually seen the plant with fronds about 6 inches



Nothoclæna Maranta.

in length with opposite pinnæ, which are deep green above, the reverse side being densely scaly. It thrives best in the cool fernery.

N. SINUATA makes fronds from 6 inches to 2 feet in length; the pinnæ, large and deeply lobed at the margin, are deep green above, clothed below with a dense coating of white woolly hairs; it makes an elegant plant for a small hanging basket in the stove.

N. RUFA.—This grows from 18 inches to 2 feet in length, the fronds being pendent; the pinnæ deeply toothed, bright green above, and clothed below with a short white tomentum.

N. FERRUGINEA differs from the above chiefly in having the under side of the pinnæ clothed with a golden brown tomentum; indeed, some authorities class them together, but they appear distinct when growing side by side. The above three kinds thrive best in the stove.

There are also a few other cool house varieties not referred to; amongst them may be mentioned *N. lævis*, *N. canariensis*, *N. brachypus*, *N. Marantæ*, and a new species shown by Mr. Birkenhead at the Temple recently called *N. Ballantiniana*, all of which are very beautiful.

WILLIAM HUGH GOWER.

SHORT NOTES.—FERNS.

***Pteris Victorix*.**—This I find an excellent plant for table decoration. Although classed as a greenhouse Fern, it grows more freely in a stove or intermediate house. An excellent characteristic of this Fern is the ease with which it can be increased by dividing the root-stock.—A. Y.

***Asplenium davallioides*.**—"J. B." sends a frond of this species for a name. It has given me a lot of trouble to decide the name, for I thought for a long time it was a *Davallia*. At last I came across the plant, which had been gathered for me near Nagasaki, Japan, in 1863. It is a very handsome Fern, but I cannot say if it is in cultivation.—W. H. G.

***Myriopteris frigida* (H. Galt).**—This is the true form of this plant, more commonly known as *Cheilanthes frigida*, and frequently to be seen growing under the name of *C. lentigera*. I believe Messrs. Rollisson, of Tooting, introduced it many years ago from Moran, in Mexico, at some 7500 feet elevation. The plant makes fronds from 1 foot to 18 inches long under cultivation. They are triangular and tripinnate, the segments small, rich green on the upper side, densely covered with brown chaffy hairs. It is very variable, but beautiful in all its forms. When at the Tooting nursery I used to grow this plant best in a cool house, the compost being loam and old mortar refuse, with a little peat and sand added.—W. H. G.

***Actiniopteris australis*.**—J. Bertram sends me this, asking how he can grow it. This plant, I have found, can be much more easily grown than the typical *A. radiata*, from which it differs in having the segments of the fronds much longer and in their being simple at the points. I cannot quite agree with those authors who assign these plants to the *Aspleniums*, for their marginal sori would certainly appear to lead one to the belief that they belonged to the *Pterises*. The plants should be put into small well-drained pots, using but little soil, which should be light sandy loam and old mortar rubbish, to which may be added a little good peat. It requires a good brisk heat and a moist atmosphere. I think it was with Mr. Williams, of Holloway, I saw the plant growing well last season.—G.

***Aspidium latifolium*.**—John Forster, in sending me part of a frond of this Fern, which he says was brought from the Fiji Islands, asks if it is not *A. ebenum* or *A. trifoliatum*. It is quite distinct from either. From *A. ebenum*, which is more correctly named *A. Pica*, it differs in being a much more divided Fern; moreover, that plant is confined to Bourbon and the Mauritius; the only resemblance is in the black stems. I should imagine it was a common Fern in the Fiji Islands, for I have fine specimens gathered by Milne in that place many years ago. It is very different from *A. trifoliatum*, for that species has bright brown stems; moreover, it is confined to tropical America. *A. latifolium* I have had in a living state, and I should not think you will have any difficulty in obtaining it from some of our leading Fern nurserymen. Your other Fern query shall receive my attention next week.—W. H. G.

***Odontoglossum hastilabium*.**—Of this beautiful spring-flowering variety, a small plant imported two years since has been blooming for some

weeks past in Mr. A. R. Baily's garden, Willow Vale, Frome. The spike, which is a branching one, bore over thirty of its delicately coloured and useful button-hole flowers. Although this species has been in cultivation since 1843, it does not seem to be so generally grown as its merits deserve. Taking into account the strong constitution of the plant and the length of time the blooms remain in good condition, together with the delicate colour and markings of the flower, the species has strong claims on the amateur cultivator of these now popular plants. Mr. Baily's plant when obtained from the auction rooms had two leafless and very much shrivelled bulbs, but the vigour of the growths made since has been quite surprising. The plant stands among many other Orchids in the warm plant houses, getting a rest in winter by being kept dry and stood at the coolest end of the house.—W. S.

STOVE AND GREENHOUSE.

PELARGONIUMS AT LEWISHAM.

THE Pelargonium has become less popular of recent years both as a plant for exhibition and the conservatory, but a new interest is springing up in this splendid flower, as shown by the very fine collection in the nursery of Mr. H. J. Jones, Hither Green, Lewisham. A house over 100 feet long is filled with specimens, chiefly of the show, Ivy-leaved, and regal classes in full bloom. Later on the zonal varieties will continue the gay display, and the more recent kinds are included, besides older and well-tried favourites. The plants are well grown and not too stiffly trained. They are freer than the typical show specimens, and the newer acquisitions evince considerable range in colour, embracing many charming and varied tones. It is not often one can see a house of such dimensions devoted to one class of plant alone, and therefore we made a note of a few of the more valuable varieties for colour as a guide to those who intend to cultivate this familiar greenhouse favourite.

We will take first the show and decorative classes, that are bolder and more striking than the other sections. One of the finest is Jubilee, a very beautiful flower, large, and of a very charming salmon-pink colour, soft and refined, set off by dark-coloured blotches on the upper petals. Of a salmon tint, with the centre white, is Mrs. Hollingsworth, and the plant is of excellent habit. It is not alone for the flower that a variety may be commended, but also for habit, and this kind is compact, exceedingly free, and bright. Although several kinds have salmon flowers, the shade of colour differs, and in Princess May it is quite of a pink tone, shot with salmon, the upper petals blotched with a deep colour. There seems at present an extraordinary desire to name novelties as a compliment to royalty, but this wholesale style of nomenclature is likely to prove somewhat misleading. It creates confusion. There are plenty of pretty simple names not yet given to flowers. Monarch is a good white kind, with deep crimson blotches on the upper petals, in rich contrast. Quite a different colour is seen in the variety named Agnes Cook, the flowers large, rosy purple, and the plant exceptionally free, whilst its habit is good. But the finest purple kind is Purple Emperor. We do not care greatly for purple, but in this variety it is clear and distinct. The flowers are large, borne with great freedom, and the plant is of strong compact habit. There is a large number of varieties with flowers of rose shades, and in

the same way as the well-known Mme. Thibaut is Dorothy, which supersedes the old favourite. The growth is compact and the flowers produced in neat trusses, individually of a bright rose colour, white in the centre. The best white is undoubtedly Volonte Nationale album, the flowers large and of the purest white, except a few streaks of violet on the upper petals. Prince George is a fine type. The flowers are large and deep rose-salmon, a delightful colour, and dark blotches occur on the upper petals. It is quite one of the best of the newer kinds in the collection. Emma Hayes deserves mention, the flowers large, and of a lovely salmon hue, intensified by the dark coloured blotches on the upper petals. Stanley, rose-purple, and Magpie are pleasing; the latter is not unlike the old Beauty of Kingston, but the flowers are pure white, each of the petals being enriched with a dark coloured blotch. It is a variety that tells well for its distinctive colouring. Quite an advance on existing varieties is Mrs. H. J. Jones, the flowers of which are very large, beautifully shaped, the upper petals of a deep and rich colour, the lower tinted with rose—a handsome and noble flower that should become popular. One new kind named Mr. H. J. Jones is bright in colour, scarlet with a thin margin of white to the petals, and white in the centre. A good plant of it would show up well in a group. All the foregoing show or decorative Pelargoniums are of good colour, free, and the plants make compact sturdy growth, whilst they represent some of the finer novelties at present in commerce.

We may briefly refer to the regal kinds, which are as finely grown as the show class. They are an interesting race, and the colours of the flowers bold and decided. Duke of Fife is a useful kind, the broad petals rose and white; whilst mention may also be made of Prince of Wales, scarlet; Duke of Clarence, blackish maroon, white centre; and Lady Duff, bright rose; whilst May Queen and Scarlet Gem are both good, the plants of pleasing colour and excellent habit. In commencing the culture of the Pelargonium, a very large selection will not probably be made, and this small list of regals will make a good foundation. It must be remembered, however, that all the leading kinds are grown in this nursery, from the oldest to the most recent acquisition.

Many beautiful varieties occur amongst the zonal class, which is more suitable for a beginner in Pelargonium culture than the show or regal sections. The zonals are well grown at Lewisham, and the collection of both single and double kinds is large. Amongst the former of note are Puritan, the flower large and bright salmon-rose; Mr. Needs, a much deeper shade of the same tone, bright and distinct; and Mr. W. Wright, very clear salmon. A curious colour is that seen in the variety Mrs. W. Wright, the truss large and the flowers purple, with a shade of yellow in the centre. A bold, handsome kind is Cannell's Favourite. The flower is almost circular in outline, but not conspicuously formal, the colour rose, with a small white eye. In this large collection we noted also two other varieties that deserve mention. One is D. B. Crane, the flowers of a splendid scarlet colour, the eye very small and white; and the other, Princess Maud of Wales, the colour delicate lilac-pink, white on the lower petals. This small selection embraces varieties of great merit, and all worth growing for freedom and good colour. A few double-flowered kinds that we selected as of special merit were White Abbey, a very fine double white kind; J. S. Phillips, salmon-scarlet; Mr. W. Satch, orange-scarlet; and Colossus, crimson.

Besides the above class, Mr. Jones has at his nursery a large collection of Ivy-leaved Pelargoniums, amongst them many of the finest novelties. One acquisition that will, we hope, be freely grown in the future is Rycroft Surprise, the flowers double and brilliant carmine-rose in colour. It has been already noted in THE GARDEN. Visitors to this nursery who are interested in Pelargoniums will be well repaid, and the tuberous Begonia is also represented, one house being filled with plants of both single and double varieties.

Vallota purpurea.—Flowering plants of this Vallota represented by different forms were to be seen at the Temple show, and it was somewhat of a surprise to many to see them in bloom thus early in the season. Whether their early flowering was to be accounted for by the fact that they were freshly imported bulbs I cannot say, but I have had some under my observation that were sent from the Cape last summer and potted on arrival. A few produced flower-spikes in a very short time, but the majority made little or no growth above ground, though they rooted freely. Then some pushed up their flower-spikes simultaneously with the leaves, with the result that the unusual spectacle was presented of flowering plants of the Vallota in the month of May. There is often a good deal of difference both in the shape of the flower and in the colour thereof among these imported bulbs, but, as far as my experience extends, very few of them have the broad massive petals characteristic of the best cultivated forms. It is easy to understand that bulbs ripened in South Africa would flower for the first time at a different season from those grown in this country, though it is more than probable the difference would to a great extent disappear by the following season. An analogous case is that of the Bermuda Lily (Harris), which from its early flowering qualities was at first thought to be a different form, but after being grown in this country it is indistinguishable from some other varieties of *Lilium longiflorum*.—H. P.

Big Begonia flowers.—It seems that the flowers of the single Begonia get larger each year. The enormous blooms to be seen at the Temple show were surprising, it is true, but this hankering after mere breadth is scarcely a sign of good taste. We measured a few, and one in particular was about 8 inches long and 6 inches across, a huge, ugly thing, that shows how greatly a really charming flower may be spoiled by attempting to make it as big as possible. In one case the form was almost round, the segments of equal width, but such a thing is not beautiful. We like the medium-sized flowers of good colour, and would reject the ungainly double and single flowers quite out of proportion to the size of the plant. A healthy change was seen in the double-flowered Begonia two or three years back when the high-centred kinds began to be frowned upon by all who like to see beautiful flowers, and the rosette-shaped type took their place. A loosely arranged double Begonia, the flowers much like a Rose, are exquisite even if large. Then the variety of colours is extensive, ranging through exquisite shades of rose to purest white.

Richardia Lutwychei.—On December 14 last a Richardia was disposed of at the auction rooms of Messrs. Protheroe and Morris under the name of the Pride of the Congo, and announced as a new golden-flowered Calla. Popular curiosity, already whetted by those two beautiful golden-flowered kinds, R. Elliottiana and R. Pentlandiana, was aroused, and there was a good demand for the Pride of the Congo. Some of these have now flowered, and are considered by Mr. Brown, of Kew (who has made a special study of Aroids for many years), to be a new species, upon which he has bestowed the name of Richardia Lutwychei, in honour of the gentleman who first submitted specimens for identification. In this the leaves are bright green, while

the lower half of the leaf-stalk is furnished with numerous stiff hairs. The flower-scape, which, in the specimens I have seen (which had, however, been grown in a cool greenhouse), reaches a height of little more than a foot, while the spathe is from 3 inches to 4 inches long. It does not, however, open as in the common *Richardia æthiopica*, but is of a deep cup shape, with a dark purple blotch inside at the base; but, owing to the conformation of the flower, this is not seen unless closely examined. This *Richardia* is somewhat in the way of *R. hastata*, which has been in cultivation for many years, but has never become a popular garden plant, owing to the flower not being conspicuous enough, and much the same objection will, I should say, hold good in the case of *R. Lutwychei*, though, perhaps, as it gains in favour, the flowers may become larger, or some individuals may be superior to others. The fact that the flower only partially opens will, however, be against it, though, as the scape is unusually dwarf, it may possibly be useful for hybridising. The flower of *R. Lutwychei* is yellow, tinged on the exterior with green, which becomes more pronounced before the blooms fade.—H. P.

SOME OF THE NEWER CALADIUMS.

IN 1884 a trial of *Caladiums* was held at Chiswick, and from that time there has certainly been an increased interest taken in this class of beautiful foliaged plants, for they are at the present day very popular, not only in this country and on the Continent, but also in many parts of the tropics where ornamental gardening is followed. When any particular class of plants shows indications of increased popularity there is sure to be a great number of new varieties brought before the public, and the *Caladium* forms no exception to this rule, for within the last few years there have been large numbers sent out. Our own raisers do not appear to have done much in this direction, but some of the Continental nurserymen have put many new varieties into commerce. In Brazil, too, the home of the *Caladium*, its culture has been taken up, and several very striking forms have been sent therefrom to Europe. Most of these Brazilian kinds are bold, stately growing varieties, very effective when in large plants. When seedlings are raised it takes some time to work up a stock of any particular kind, and consequently a good price is demanded for them, and it is some two or three years before they become much cheaper. So great is the number of varieties now in cultivation and so slight is the difference between many of them, that a careful selection is necessary, for the published descriptions cannot always be relied on, as a good deal of prominence is often given to what are really little more than microscopical points of difference. As an illustration of the difficulty attending a moderate selection I may mention that one of our principal nurserymen issues a special list of *Caladiums*, that contains a little over 300 names—quite a puzzle to select a couple of dozen therefrom. Despite the number of new varieties, there are a few of the old kinds still among the best, viz., such as *E. G. Henderson* and *Prince Albert Edward*. There are a few varieties with leaves more or less of a golden hue, one of the best being *Golden Queen*, a self coloured variety. The most generally cultivated dwarf *Caladium* is certainly *C. argyrites*, introduced from Para in 1858. It is too well known to need anything said in its favour, for its dwarf habit and prettily marked leaves cause it to be very generally known. Of about the same height as this is the variety *minus rubescens*, in which, however, the leaves are not disposed in so graceful a manner as in *C. argyrites*. Their colouring is bright crimson in the centre with a broad edging of green. The leaves of this variety are all slightly twisted. Last year a very pretty dwarf variety was shown at one of the meetings of the Royal Horticultural Society, and awarded a first-class certificate. Its name is *Souvenir de Paro*, and the leaves being marked with red, white, and green are very pretty. In the case of the newer forms, which are often

propagated from to the greatest possible extent, the markings on the leaves are, as a matter of course, somewhat weak, but as the plants gain in strength they become more pronounced.

H. P.

Varieties of Malmaison Carnation.—A successful raiser of new varieties of the Malmaison Carnation is Mr. Blick, gardener to Mr. Martin Smith, Hayes Common, Kent, and we have recently seen several new kinds that show he is working in the proper direction. There is not too great hankering after mere size, the flowers keep fairly intact, and the colours are good. We hope, however, that too lengthy names will not be given. One is called *Sir Charles Fremantle*, K.C.B.—much too long a name for a flower. One simple expressive name is quite sufficient. This variety bears a scarlet shaded flower of good form and handsome. *Lady Strathume* is another good variety, the flowers well shaped, and of an attractive rose; whilst another we made special note of was *Sir Evelyn Wood*, the flowers rose, tinted with darker shade. The list of new Malmaisons from Mr. Smith is of considerable length, and we have seen no bad flowers. They show an interesting range of colour, which will extend in time to other shades. It is agreeable to see the coarseness of the type in some measure banished.

Dipladenia atropurpurea.—A flowering plant of this distinct and uncommon species of *Dipladenia* at the recent Temple show formed a very interesting object, and one that was evidently unknown to many of the visitors there. It is certainly in general appearance widely removed from the many garden forms that are now in cultivation, but is as free flowering as any of them. This *Dipladenia* forms a good companion to the pretty *D. boliviensis*, whose flowers are white, with an orange centre, as in *atropurpurea*. They are of a rich chocolate-crimson, overspread with a velvety lustre, and the interior of the throat is orange at the base. The individual blooms are about 3 inches long and a couple of inches in diameter. The exterior of the flower is crimson-purple at the lobes, fading gradually to the base, where it is very much paler. This *Dipladenia* was first introduced from Brazil about fifty years ago, but after a time it would appear to have been totally lost, and quite unknown to most horticulturists, till it was re-introduced by Mr. Clarke, of Croydon, a few years since. It is of easy propagation and free growth, so that it should become still more popular when better known.—T.

Gomphia decora is one of the more attractive plants in the Palm house at Kew. The growth is graceful, and the shoots bear a profusion of yellow flowers crowded together in a dense mass. It is a thoroughly useful stove species, bright in colour, not difficult to grow, and quite one of the best things we have received from Brazil. The *Gomphias* have long had a place in English gardens, *G. nitida* and *G. obtusifolia* having been introduced from Jamaica as far back as 1803.

Goethea strictiflora is more curious than beautiful, but it is of quite sufficient interest to note as flowering in the Palm house at Kew. It is a Brazilian plant, belonging to the Malvads, and bears a profusion of flowers. When in full bloom it has a remarkable aspect, the flowers covering the stem and crowding thickly towards the apex. The colour is derived from the involucre, which consists of bracts finely veined with red, and remaining in beauty long after the inconspicuous flowers have perished. The stigmas occasionally protrude beyond these bright-looking bracts, but the whole beauty of the plant lies in its neat involucre. The leaves are large, ovate in shape, and handsome.

Marica cœrulea.—A large plant of this is in full bloom in the succulent house at Kew, and in its way nothing could be more beautiful. The *Maricas* are related to the *Irises*, and *M. cœrulea*, a Brazilian species, has been in English gardens since 1813, so that it is by no means new. But one does not see its flowers too often, and it deserves to be well grown. A very high

temperature is not necessary, and if the flowers are short-lived, there is a succession. An individual *Iris* flower has only a brief existence, but others appear to carry on the display. In the *Marica* the flower is large, showy, and tenderly coloured, the falls broad, rich blue, the smaller standards veined with blue and white.

Propagating show and regal Pelargoniums.—The plan recommended by me for propagating this class of plant (p. 368) I still consider the best for gardeners to adopt. I am not unacquainted with the methods pursued by the Covent Garden growers, I having had five years' experience in such establishments in the neighbourhood of London in my early gardening days. At that time I have assisted in making thousands of cuttings both previous to the plants flowering and after. I have seen so many failures in private places in both the propagation and culture of this class of *Pelargoniums* in small pots, that I had in mind when penning the note in question, which "J. C. B." takes exception to, the surest method by which success could be ensured. The cuttings which I advised are not young and soft, but those clustering about the base of stout stems, these being firm, although green. I never knew these damp off, but root quickly and grow into fine plants. Drawn, weakly and consequently soft cuttings, I know, are not likely to make good plants, and, besides, are very liable to damp off.—A. YOUNG.

GREENHOUSE AZALEAS.

AT one time some immense specimens of these plants used to be staged, whereas now we rarely see them, and then only moderately sized plants and at times badly bloomed. At the Crystal Palace there were only a few good specimens for the liberal prizes offered, and at Earl's Court there were fewer still. I was very pleased to see, however, a class at the Palace show for plants in 9-inch pots. Very liberal prizes were offered, but only one lot was shown, the second prize being awarded. This should not be, for what is more serviceable for cool house decoration than the *Azalea*? *Azaleas*, in common with other hard-wooded plants, have received less attention since *Orchids* have become so common, but no plant can be more easily grown if due attention is paid to moisture and feeding. I am aware of the millions of plants cultivated round Ghent and other districts, but how many of these are left to make even half specimens? Many used for house decoration in this country are allowed to get dry at the roots, and are then discarded. I do not like the mop headed specimens; indeed, these plants merely cut in or loosely tied are far more beautiful. In this direction I think of late years we have made considerable progress, as we now grow *Azaleas* more naturally, the result being more and larger flowers as each shoot is better matured and the flowers have more room to develop. It is surprising how well these plants will stand hard cutting back. I once took charge of some very neglected specimens that had run up a great height. There were headed down early in the year, repotted in May and made nice plants from 2 feet to 3 feet high. Of course, when treated in this way, extra attention is necessary to get a clean, quick growth. I feel sure these plants are often too much coddled, that is, given too much heat when at rest and not enough moisture when in active growth. I find our plants in the cool houses, which are lofty and only just heated sufficiently to keep out frost, are much healthier than those more favourably treated. There is another point in their culture often overlooked, and that is thorough ripening of the young wood, as if the plants are left to take any shift after blooming, they do not produce the flowering wood for the next season. Abundance of moisture both at the root and top is essential when making their growth after the flowering period, and when I say abundance at the root, it is presuming the roots are confined in small pots and plentiful. *Azaleas* thrive for years in the same soil if assist-

ance is given in the way of a good fertilizer. When plants are grown for cut blooms, those varieties with good substance or semi-doubles are best, and the cutting the plants receive when in flower will keep them sufficiently dwarf without severe pruning. Plants deficient of foliage are often devoid of roots; these should be over-hauled at once, placed in smaller pots in a good compost in a warm, close house and kept well syringed for a time.

G. WYTHES.

TRICOLOR PELARGONIUMS.

It is to be hoped that these will once more attain to some degree of popularity. There are very few things among fine-leaved plants either cool or warm house that can vie with them in beauty of leaf tint. I suppose that the numerous beautiful varieties raised by Mr. Grieve, Mr. Laing, and others are still in existence. It is long since I have seen some of them. I have always thought that these tricolor Pelargoniums are at their best in spring and early summer. The lovely shades of colour in the foliage seem to be developed and intensified under the influence of the genial temperature of a cool house. Later on they lose some of this beautiful colouration, especially when exposed to very hot sun. Towards autumn as the days get cooler the tints become more vivid, but never so bright as in April or May. Some fifteen years ago I used to think that the little specimens brought into Covent Garden in spring were equal in beauty to anything offered for sale there. The variety Lady Cullum was a great favourite with market growers at that time, and for richness of colour I do not think that it was ever surpassed. These little tricolors always seemed to find a quick sale, and they never appeared to be in excess of the demand. Everyone who had a greenhouse at that time made a point of growing a few tricolors, and they were sure to be well in evidence at provincial flower shows. The discovery of the capacity of the zonal for winter blooming had presumably much to do with the decline in popularity of the tricolor. It was curious to note that as trade growers' lists swelled with double and single zonals, the tricolors diminished in like proportion, until in some instances they almost disappeared from the catalogues. The tricolor Pelargoniums demand a rather higher temperature than the silver-variegated, plain and yellow-leaved kinds. They must have enough warmth to keep them gently moving all through the winter months. If once they receive a check, they begin to damp, and by spring, healthy young specimens will come down to bare stumps. This was one reason why in former days many failed to do them well. They were given the same treatment as ordinary bedding plants through the dull months, with the consequent partial or complete loss of foliage. The temperature should never be less than 45° for them, and 50° by day is not too much when the weather is fairly bright. I used to find that to keep this class of Pelargonium in good condition, air must be more or less freely given through the winter months, heating the pipes to make the air buoyant and keep up the requisite temperature. Now that zonals are much grown for winter bloom, the conditions necessary for tricolors can be easily had. Just the treatment that promotes freedom of flowering in one will keep the other in good health. Those who cultivate the winter-blooming kinds would do well to associate with them a few of the best golden and silver tricolors. Their leaf beauty is so great, that if kept in good order through the winter, they form a beautiful con-

trast to the general inmates of the conservatory in early spring. Many of the younger generation of amateur and professional gardeners know little or nothing of the fine varieties that occupied a prominent position in trade lists some twenty years ago. The beauty of these when well cared for would come as a revela-



Notholaena rufa. (See p. 509.)

tion to many at the present time. I have often deeply regretted that a change of fashion should have banished from our gardens a class of plants that in their exquisite leaf tints cannot be equalled by any cool house plant. When I grew these tricolors, I found that it was matter of much importance to have the

pots well filled with roots by the winter. I made a practice of putting out some plants in rather light, well-enriched soil in a cold frame. These gave me good cuttings early in July, having the time to grow into nice little specimens well established in 4½-inch pots by the close of the autumn. Plants of this description winter well in a suitable temperature, and with the advent of finer days take on a rich colour, and can be used at an early date in spring for decoration. The tricolors are not nearly so strongly rooted as the other sections of the family, and like a little leaf-soil and silver sand in the compost. A rather lighter soil induces a freer root-action and helps to keep the roots from coming into a torpid condition during the winter months. Watering at that time must be done with a light hand. I should be pleased if the foregoing remarks would in some slight measure help to rescue these beautiful Pelargoniums from unmerited neglect.

J. CORNHILL.

TUBEROUS BEGONIAS AT FOREST HILL.

EACH year the tuberous Begonia is to be seen in fullest beauty in the Forest Hill nurseries of Messrs. J. Laing and Sons, and the display this season is finer than any of the previous exhibitions, for such we may appropriately call them, of the gay flower. Several houses are devoted to the plants, and at the time of our visit the outdoor kinds were being planted, these creating a splendid mass of colour later in the season. At present it is the pot plants that engage attention, and each season one sees the steady advance taking place in the habit of the plants. They are now compact, sturdy, and with fine leafage, whilst the aspect of the flowers is undergoing a change from the more formal, lumpy, and ungainly types that once were sought after, we suppose, for their curious character. In a large collection of single and double varieties there is great diversity in the shape and colour of the flowers, new departures occurring either towards a more refined and looser bloom or in shade. Many of the double kinds are more like a Rose in shape, quite informal, and of medium size. Very large flowers that require a stick to hold up the stem are, as a rule, devoid of refinement and coarse and vulgar. Glancing at the seedlings in the Forest Hill collection, we notice several beautiful novelties, and one is a pure white flower without colour of any kind, the centre florets forming quite a dainty rosette, and the margin distinctly serrated. This represents a very beautiful type, and we hope to see it represented in other colours. A white single-flowered kind has this distinguishing trait, the segments distinctly toothed at the margin, and this suggested the name Fringed White, whilst the tuft of rich yellow stamens in the centre is in bold contrast. In other respects this Begonia is worthy of recognition, the plant robust, stems sturdy, and bearing freely the spotless flowers. A race of both double and single fringed varieties would be a great gain, and no doubt in time the range of colours will be extended. Not many years ago there was a dearth of good yellow-flowered kinds, but we have now several additions of telling shades of yellow or orange.

Few plants have risen more quickly in popularity than the tuberous Begonia, and in the near future it will occupy the chief place in all bedding arrangements in the garden. The secret is that the plants are not only easy to grow, but they are remarkably showy, the flowers ranging through many colours from snow-white to intense crimson. Without desiring to make a catalogue of names, we may mention a few of the finer double kinds which represent the tuberous Begonia at the present day. All the plants are of excellent habit, free, and the flowers conspicuous for either beauty of form, colour, or both combined. Lord Roberts is a variety valuable for the superb depth of crimson of the full perfectly double flowers, and this

and is of a very compact habit as well as free flowering, but does not thus far appear to produce seed.—H.

Rose Grace Darling, one of the late Mr. Henry Bennett's acquisitions, is a very fine Hybrid Tea, remarkably vigorous and free, blooming from early June until well into the autumn. Flowers may even in a mild season be gathered at Christmas. It will succeed near large towns, and the sturdy growth bears full flowers of distinct colour, the large robust petals creamy white, broadly margined with rose. A hybrid of great value.

A white Gloxinia.—Herewith we send you a seedling white Gloxinia of our raising named Stanstead White. It is by far the best of its colour we have yet seen, as we have nothing to match it amongst the other named and seedling whites we have now in flower. J. LAING AND SONS.

* * A remarkably fine variety, the pure white flowers erect, of large size and freely produced; the leaves also large and of good substance.—ED.

Two showy Roses, especially when grouped in a large bed on the turf, are the old crimson China, or *R. indica sanguinea*, as it is called in some catalogues, and the Noisette Fellenberg. The former is charming when massed, the flowers very double and intense crimson, which is richer in association with the dark coloured leafage. Fellenberg is delightfully free, and few Roses are better for forming groups in the garden. The plants continue long in bloom, and every shoot is wreathed with the rose-crimson flowers.

National Carnation Society (southern section).—Alteration of date.—At a committee meeting held at Hotel Windsor on June 3 it was unanimously agreed that, owing to the exceptionally early season, the date of the exhibition, which was to have been held in the Drill Hall, James Street, Westminster, on July 25, under the auspices of the Royal Horticultural Society, should be altered to July 11, and that the exhibition be held in the gardens of the Royal Horticultural Society at Chiswick on that date.—JAS. DOUGLAS, Hon. Sec.

The Mocassin Flower at Pitlochry.—I enclose some blooms of *Cypripedium spectabile*. I have some grand clumps of it here growing in light sandy soil with a little peat mixed with it. They are never protected in winter. *Cypripedium Calceolus* and *C. pubescens* are growing in the same bed equally as strong.—W. BAILLAS, *At home Hydripathic, Pitlochry, N.B.*

* * The flowers, very large and handsome, came to hand quite fresh and vigorous. Surely these are better than all those we bestow so much care on in hothouses!—ED.

Geranium balkanum.—Mr. J. Wood, and possibly others of your readers, may be interested in learning that this plant, referred to by him at p. 458, is nothing more than the old *G. macrorrhizon*, long since figured and described in an early volume of the *Botanical Magazine*. The small rose-coloured flowers can hardly be likened to those of *G. ibericum*, which are very much larger and of a deep, but dullish violet shade. The foliage, too, is quite different. It is doubtless a distinct enough species, but less showy than many others.—SENEX.

The great white Scabious.—I have forwarded a few of the first flowers of the white *Scabiosa caucasica* for your inspection. It is very free, and promises to be one of the finest perennials of later years. In a moist season no doubt the flowers would be much larger, as they were last September. It is perfectly hardy and loves a warm soil.—M. PRICHARD, *The Nurseries, Christchurch*.

* * A beautiful cream-white variety. While nothing surpasses the delicacy of colour of the blue form of this noble plant, the variety may be said to be worthy of it, and we hope Mr. Prichard will increase the plant and keep a good stock of it.—ED.

Iris hispanica Mongolian.—This variety of the Spanish Iris bids fair to be an exceptionally fine one. It was exhibited by M. van Tubergen, Junr., at the last R.H.S. meeting in the Drill Hall,

in company with *Iris Lorteti*, to which an award of merit was given. The variety Mongolian has flowers slightly larger than those of the average of the Spanish, being intermediate between those of this section and those of the English Iris. The colour is a pure golden-yellow self, very effective when seen in a mass. It is a variety that should prove of much service in a cut state where decided colours are required. Those with two shades of one colour, or in two or more distinct colours, may be very beautiful, but are scarcely so effective.

Cleome pungens.—This singular looking plant of herb-like growth was shown recently at the Royal Horticultural Society's meeting by Messrs. J. Veitch and Sons. It was, as shown, about 2 feet or more in height, bearing terminal spikes of most singular-looking flowers, in colour a pale rose, with the stamens of a purplish shade. The impression made at the time was that it would grow out of doors, but on reference to the "Dictionary of Gardening" I note that it is classed as a stove annual, having been introduced from the West Indies as long back as 1817. It is synonymous with *C. spinosa*.—G. A.

Five-spurred Toadflax (*Linaria vulgaris Poloria*).—In the herbaceous ground at Kew this is well represented, and the large masses of plants, quite 2 feet in height, graceful in aspect, and free blooming, are amongst the most attractive features in the Royal Gardens. The flowers, of a rich yellow colour, are produced in profusion, their curious spurred character being conspicuous. This form of our common Toadflax is delightful in the rockery, where in light soil it is perfectly at home. Although a familiar plant by name, *L. vulgaris Poloria* is uncommon, at least one does not often see a good tuft of it.

Eccremocarpos scaber.—I enclose a spray off a plant of *Eccremocarpos scaber* which has been flowering beautifully after standing the last very severe winter. *Fabiana imbricata* has till lately been a mass of white bloom, and was quite uninjured here. We have had since March quite ideal weather for the garden, long periods of brilliant sunshine with intervals of refreshing rain. Herbaceous plants in the border and on the rockery have alike been and continue to be seen at their best, many of them having never had such a chance for satisfactory development. I have had great pleasure in watching the very fine flowering of some clumps of *Cypripedium spectabile* which were sent to me from a lake in the State of New York last autumn.—W. D. R. D., *Orchardton, Castle Douglas, N.B.*

Genista virgata.—Like pretty nearly everything else, this beautiful shrub is flowering much earlier than usual this year. A large number of plants are in bloom at Kew, and being scattered amongst the trees and shrubs in the wilder part of the garden, produce a very bright and charming effect amidst the surrounding greenery. Some of the larger specimens are 10 feet and 12 feet high, and even more in diameter, covered from top to bottom with bright yellow blossoms. It has small entire leaves of a greyish colour. Introduced from Madeira towards the end of the last century, it has not yet become widely known, although it is readily propagated by seed, which it produces abundantly. For dry sandy soil like that at Kew it is evidently well adapted, a fact which considerably enhances its value.

Tufted Pansies with shrubs.—At this season amongst the gayest of flowers are the tufted Pansies, and we recently noticed at Kew an excellent use made of the best kinds for distinct and telling colour. They are planted thickly at the foot of standard Rhododendrons, Araucarias, and in similar positions, each variety kept quite distinct. The purple kinds show to great advantage against the dark coloured leafage of the shrubs, and nothing can be easier than to plant the tufted Pansies thus. The effect of such bold planting would be quite lost if the several varieties were not kept apart, a mixture being very ineffective. That fine Pansy Archie Grant is one of the best for this style of arrangement, its flowers so rich and striking in colour. It is pleasant to see such

good use made of these charming flowers. They bloom freely throughout the summer, and form an excellent groundwork in beds filled with other plants.

Erica cinerea, with its many delightful varieties, is now in flower. It grows in compact masses about a foot in height, and during the blossoming season is covered with the tiny bells, varying in colour from pure white to deep red and deep purple according to the variety. Perhaps the most beautiful of these varieties is *atro-purpurea*, whose flowers, as the name denotes, are of a rich bright purple. Amongst the red-flowered ones *atro-sanguinea* is the best we have. All the varieties, however, are worthy of cultivation. The species is a native of Britain. Another beautiful ericaceous plant now at its best is *Zenobia speciosa* (known also under the name *Andromeda*). Its flowers are pure white, and hang in pendent clusters from each of the leaf axils near the ends of the shoots. Still more attractive than the type plant is the variety *pulverulenta*, whose foliage is covered with a glaucous bloom. The young shoots alone would render the plant worth growing. Its flowers, however, are superior to those of the type. Both forms come from the Southern United States.—B.

Hedysarum multijugum.—Although scarcely known as yet in this country, this semi-shrubby species of *Hedysarum* gives every promise of turning out a useful addition to hardy plants. It is a native of Southern Mongolia and appears to have first become known in Europe about ten years ago, when it was figured in *Gartenflora*, t. 1112. It is said to attain a height of 5 feet, but the specimens that have hitherto come under my notice are all under 2 feet. It has slender branches, covered when young with minute silky hairs, which also clothe the petioles and pinnate leaves, giving them a grey, semi-glaucous tinge. The flowers are produced during June, and occur on racemes 8 inches to 12 inches long, the colour being a very pretty rosy purple. The flowers are papilionaceous, and the racemes last in good condition for two or three weeks. The species is well suited for an open sunny border, but would, perhaps, be seen to best advantage in a bed by itself. It is propagated by seed, which, in suitable seasons, it ripens in fair quantity.—B.

Anguloa uniflora.—The three species of *Anguloa*, viz., *A. Clowesi*, *A. Ruckeri*, and the one under notice were all introduced to England about the same time—between 1842 and 1845. The rare plant known as *A. eburnea* has been reduced by Messrs. Veitch to a variety of *A. Clowesi*. *A. uniflora*, although quite distinct from either of the other type species and equally striking, is still not very frequently seen. It has the same Tulip-shaped flowers as *A. Clowesi*, which are, however, improved by being somewhat more expanded and less globular in shape. They are of a pink-tinted white, freely sprinkled with rose-coloured dots. This species was first discovered by Ruiz and Pavon in Peru, and the present name was given to it by them over one hundred years ago; it was afterwards found in and introduced from New Grenada. A plant is now flowering at Kew, where also *A. Clowesi* and *A. Ruckeri* may be seen in bloom. All three species are well worth a place in any collection, for they are amongst the easiest of all Orchids to cultivate, and few are more striking when in flower.

Rhododendron Aucklandi.—If anyone were to be restricted to the cultivation of but one species of Himalayan *Rhododendron*, most people probably would select *R. Aucklandi*. Although in size of flower *R. Nuttalli* and *R. Dalhousiae* may be nearly or quite equal to it, neither of them is of such good habit or grows so freely under glass. Several plants in the large temperate house at Kew have been flowering during the past few weeks, and one still continues. The flowers borne in a loose cluster, are individually 5 inches or 6 inches in diameter. They are of a pure white, the corolla being much flatter and saucer-shaped than is general among *Rhododendrons*. The leaves are smooth, oblong, and dark

type of Begonia is of much value for its richness. E. T. Cook, quite a new variety, is of similar shade, the flowers neat, not large, and the plant dwarf and strong in habit. This intense crimson shade tells well in groups if used judiciously. Lord Brooke is another good crimson, whilst brilliant shades of colour occur amongst the scarlets. Baron Schroeder is of this character, the flowers well shaped, and the centre petals distinctly frilled; also Farini, which may be described more as a red, the flowers very large, but not coarse or stiff. Those flowers of rose or pink shades are charming. Duke of Fife is a variety bearing freely, large, full, salmon-rose blooms, an exquisite shade of colour, and those of Lady Dunsany are a superb rose-pink, a tender and refined shade of this tone, the flowers of free, open expression. Lord Escher may be described as bright salmon-scarlet, a brilliant shade, and we get a very charming salmon tone shot with buff in Lady Theodore Guest. A striking rose-coloured flower is Duke of York, the flowers full and finely shaped. Another type of flower is that with the segments distinctly margined, as in Lady Dorrington, the petals arranged in quite Camellia fashion, white, edged with rose, not unlike Mme. de Watteville Rose. Purity is a beautiful double white, and also Virgin Queen, which is distinguished by the central florets being frilled in a charming way. Yellow-coloured flowers tell with considerable effect in the houses, and we do not care greatly for the staring shades, rather the soft tones, as in Mrs. G. Higgins, or where yellow combines with other tints, such, for instance, the variety named appropriately William Allen Richardson, the neat pretty flowers of which are yellow in the centre, the segments touched occasionally with rose. Of course, this does not represent even the cream of the double kinds, but we may mention yet another, named Mrs. Regnart, which is of value. The flowers stand well up, and the wavy segments are chrome-yellow—an attractive colour. For dwarfness of habit, Laing's Golden Dwarf is of note. The plant is very dwarf, compact and the flowers of medium size, the colour, as suggested by the name, rich golden yellow.

The same march forward is conspicuous in the single-flowered section as in those varieties described. Enormous blooms are, of course, to be seen, but they are not the perfect type, the flowers of neater shape and smaller dimensions being prettier, losing nothing also in effectiveness. The plants are vigorous in habit, strong and compact, the flowers showing a similar range of colours as in the other section. The best yellow-flowered kind is, we think, Miss Alice de Rothschild, the colour pure yellow, without rose or allied shades. A few plants of this in a house create a gay effect. Amongst those of salmon shades, Lady Mary Lloyd may be especially singled out. It has salmon-pink flowers, the centre segments distinctly fringed. Orange King deserves high praise. The flowers are broad, robust and of a telling orange colour, shot with red, the plants of fine habit. One of the most beautiful varieties in the collection is Duchess of Westminster, which has very bold, handsome flowers, white in the centre, the broad margin rose-crimson. A pleasing shade of salmon is seen in the variety Lady Pigott, the flowers large, broad, held up boldly and very distinct. Then we made note of a kind named Mrs. Joseph Chamberlain, of which the flowers are rose, the lower half of the segment clear white—a dainty contrast. The pure white varieties are beautiful and the best of this section is Lady Roberts, although it is difficult to select the finest when so many lovely white kinds abound. Those in search of novelties in the single class will also make note of the varieties Miss Jekyll and Mrs. R. Dean. The former has flowers of a fine scarlet-salmon colour, whilst those of the latter are pink, the edge of the florets carmine. Their crimped character gives them a distinct charm.

These varieties described represent a high standard of tuberous Begonia, but doubtless as years roll on even such beautiful things will be eclipsed. We hope that hybridists will give up aiming at mere size, as if that were something noble to achieve.

STREPTOCARPUSES.

THE Streptocarpuses are now largely grown, and it is not difficult to discover the reason of their quick popularity. Few flowers are more varied in colour, and sturdy plants will bloom over a long season; whilst they are easily raised and thrive in a greenhouse. We shall in time expect to find them as largely grown as Pelargoniums, and they are peculiarly suitable for those who have no expensive houses, as the seed is easily raised. When at Messrs. Veitch's nursery at Chelsea recently we were surprised to note the progress made in getting new colours and flowers of larger size. A large collection of seedlings was in bloom. To show the vigour and freedom of the Streptocarpus, we may mention that seed sown in December and January will produce plants that will bloom at this season. This is about six months from the time of sowing, and this is not all, as plants from seed sown in January of last year bloomed freely in July, continuing until October, and commenced again the following April—evidence, if any were needed, of the freedom and usefulness of this charming race. At Kew the Streptocarpus are used to brighten the succulent house, being planted in peaty soil by the margin of the beds, and in such a position they succeed well, although one might suppose the growth would get much drawn. S. Rexi is in full bloom there, and this flowered for the first time at Kew in the year 1886. From a packet of the best seed one gets flowers ranging from deepest crimson through lovely lavender shades, and those who grow the plants once will do so in quantity in the future. When a good strain is obtained, it is not difficult to save one's own seed, and if the flowers are hybridised, several new shades may be anticipated. We notice, too, that not only is the range of colours extending, but the individual flowers are getting larger. Some were remarkably bold, broad and telling, suggesting that in the course of years they will rival those of the Gloxinia for size. If so, the Streptocarpus will become still more valuable. A fairly warm greenhouse suits them best and the soil should be moderately rich. It is important to know that if they are planted out in a greenhouse or conservatory border, they may be lifted when in bloom without suffering in the least from the ordeal.

Gloxinias at Chelsea.—The Gloxinias in the nursery of Messrs. J. Veitch and Sons, Chelsea, were in full beauty a few days ago, and they represent a remarkably fine strain, the plants dwarf, compact, very free, and with flowers of varied colours. Specimens in 4-inch pots carried over one hundred blooms, and this freedom is characteristic of the plants. For the enrichment of the house one wants varieties that give an abundance of flowers, not leggy kinds, but sturdy, robust examples of bright and pleasing shades. The large batch of seedlings shows that the colours get more diversified each year, and in the Chelsea collection of Gloxinias one sees spotted, self, and shaded flowers of splendid character. What is of great importance is the effort made to get a distinct break of Gloxinias, and one conspicuous acquisition has been gained, the hybrid called Brilliant, which was fully described in THE GARDEN, June 3, 1893, p. 469. It is the result of crossing G. Radiance and Gesnera pyramidalis, and other crosses will be made. This hybrid is a surprise, and the forerunner doubtless of a new, distinct, and handsome race. The hybrid Brilliant is very free, quite as much so as the ordinary florists' varieties, dwarf and vigorous in growth, the neat flowers deep carmine.

Border Carnations for early flowering.—It is well known that some of the most decided colours amongst Carnations are now found amongst what are known as border Carnations, these flowering freely in the open at the usual time, viz., from July and onwards. But now that these flowers have become so popular for personal adornment, they must be forthcoming at an earlier date than that above named; consequently these must be grown in pots under glass. Two of the

most popular varieties suitable for this purpose are the apricot-coloured Mrs. Reynolds Hole and the beautiful yellow Germania; in fact, the former is now seen in the best florists' shops in London, and to all appearance is likely to supplant the Malmaison. I grow them in the same manner as Malmaison. They are layered early, potted up, and repotted again into 6-inch pots, in which they bloom. Rose Celestial I have also tried, and also Mrs. Muir, this being a fine white of good substance. Better by far grow four or a half dozen good-habited kinds with decided and pleasing colours than a greater number with which there is some uncertainty.—A. YOUNG.

NOTES OF THE WEEK.

Rose Camoens is a very vigorous variety and one of the freest to bloom. Quite small plants are covered with the full, rose-coloured flowers, and a distinct bed of it in full beauty is pleasing. It is a thoroughly good garden kind.

Erigeron speciosus splendidum is a fine plant to make a distinct bed. It grows about 2½ feet in height, and the flowers are much larger than those of the type, the colour soft purple. This Erigeron remains in bloom over a long season, and the pleasingly coloured flowers are useful for cutting.

Rosa rugosa by the waterside.—When in the Royal Gardens, Kew, recently we noticed a large break of the Japanese Rose by the margin of water. It is a fine kind to group on the turf in such a position. The dense glossy green leaves and rosy flowers followed by the showy crimson fruits are very charming.

Standard Roses.—We do not care greatly for these, but noted lately the following kinds as amongst the best, the plants having large heads and in vigorous health. Captain Christy was especially noteworthy, and worthy also of mention were Dr. Hogg, Baroness Rothschild, Glory of Waltham, La Ville de Bruxelles, and Marquise de Castellane.

Gunnera at Trelissick.—Mr. Sangwin sends us from Trelissick a photograph showing a portion of an enormous plant of Gunnera, which covers a space of 30 feet across and bears twenty-five leaves, some of them nearly 9 feet in diameter, the stems 6 feet to 8 feet high.

Eremurus Bungei.—I have in bloom, after waiting five years, two plants of Eremurus Bungei. The spikes are much smaller than those of robustus, being only 7 inches long; colour citron-yellow with long orange-red stamens. The foliage has suffered from the drought, as the blooms would have done from rain if we had had any.—J. R. DROOP, *Reigate*.

Himalayan Rhododendrons in Devonshire.—We send you by this post two photographs, one of the beautiful yellow Himalayan Rhododendron campylocarpum and the other of R. gloxiniaeflorum, both growing in the grounds of the Dowager Countess Morley at Whiteway, near Chudleigh.—ROBERT VEITCH AND SON, *Exeter*.

* * These show fine plants in the open garden with many flowers.—ED.

The true alpine Sea Holly.—I have enclosed a spike of Eryngium alpinum, the true species. Of course, it is not new, but it seems extremely scarce, and is probably the finest of this ornamental family. E. alpinum is a true perennial.—MAURICE PRICHARD, *Christchurch*.

* * Very handsome and deeply fringed. All the species are interesting and many beautiful, and though their names are sometimes confusing, the plants are always worth growing.—ED.

New hardy Poppy (supposed hybrid).—This was shown by Rev. W. Wilks at the recent R.H.S. meeting. It is presumably a hybrid between P. orientale and P. rupifragum. The flowers more nearly approach those of P. orientale in size, but have the rich orange colour somewhat deepened of P. rupifragum, being also devoid of the shining black blotches at the base of each petal in P. orientale. The foliage is smaller, but has much of the character of P. orientale. It was found growing between two plants of the species named,

green, some measuring upwards of 1 foot in length. In most parts of England it is necessary to give it indoor treatment, but it is, I believe, grown out of doors in Sir John Llewelyn's garden at Penllergare, in South Wales. Protection from frost, however, is all that is necessary, so the coolest of greenhouses would suit it. It grows to a height of 8 feet or 10 feet and does not flower much in a small state.—B.

A bed of Polyantha Roses in the Royal Gardens, Kew, is worth a note. All the leading kinds are planted together, and those who care for this charming section can select those that please most. In this bed we noted Mlle. J. Burlant, the flowers not large and shaded with a rosy tint; Perle d'Or, conspicuous for its neat bud, the colour nankeen-yellow; Georges Pernet, one of the most useful, the flowers rather large, appear over a long season and salmon-rose in colour; and Mignonette, which is the gem of the race. It has a profusion of delicate rose flowers, small and charming in colour and expression. A very fine variety is Gloire des Polyantha, which blooms with great freedom. The flowers are white, shaded with rose and well shaped. Paquerette is a delightful kind and exceptionally free, producing in great abundance its white flowers; whilst those of Golden Fairy are exquisite in the bud, the colour buff, lighter at the margin. It blooms freely over a long season. Very distinct is Red Pet, which has dark-coloured leafage and brilliant crimson flowers, not unlike those of the old crimson China.

Epidendrum bicornutum.—This species, whilst perhaps the most beautiful in the genus, has always been accounted one of the most difficult of all Orchids to keep alive for more than two or three years. It has been successfully cultivated at Kew for some years, but the treatment there given would not be possible in many establishments. The plants are grown in a tropical propagating pit, where, of course, very warm, humid conditions always obtain, and they are, moreover, suspended close above a water tank used for propagating aquatics, but 'still near the light. This treatment might be expected to suit this Epidendrum, as it approximates as nearly as possible the natural conditions under which it grows. It is usually found on branches and trunks of trees overhanging watercourses. Little material is required about its roots, and pure peat fibre is probably best for the purpose, using Sphagnum to surface with. A plant is flowering now at Kew, one spike bearing about twenty flowers, the usual number being under half that quantity. Each flower measures about $2\frac{1}{2}$ inches in diameter and is pure white with the exception of a few purple dots on the lip. The species was first introduced from the island of Trinidad; afterwards it was found on the mainland in British Guiana.

SOCIETIES AND EXHIBITIONS.

ROSE SHOW AT EARL'S COURT.

WHAT is called a supplementary show of Roses was held at the Gardening and Forestry Exhibition on Wednesday and Thursday last, and proved in every way successful. We mean more particularly as regards competition, there being in the majority of cases a keen contest for the awards. But this is a sorry season for Roses. In the suffocating temperature of the tent the flowers quickly lost freshness and beauty; nor was this alone due to the high temperature, but also to the drying east winds and fierce sunshine of the previous day. We fear that if the present weather lasts, enjoyable though it may be to holiday-makers, the Roses will not be of much account this year. They were on Thursday decidedly thin, small, and showing traces of the recent phenomenally hot season. Roses this year will, we think, have a short life, and the Teas appear better than the Hybrid Perpetuals. Against these disadvantages,

however, we may mention that the colour is exceedingly beautiful, the crimsons especially, and the tender shades upon the Tea section are brought out in their fulness. That old favourite, Marie van Houtte, was in fine character; also Mme. de Watteville and those mentioned in the following report of the exhibition. Quite one of the most delightful features was the section for garden Roses, which were shown largely and well. We hope that the old-fashioned Roses, the Damasks, Noisettes, Boursaults and many other types will be more in evidence in future at the shows. They certainly deserve to have a place, and are a relief to the formal rows of H.P. and Tea-scented varieties.

There was about an equal number of classes for nurserymen and amateurs. In the open classes there was good competition, and the flowers moderately good. The principal prize in the largest class, that for thirty-six blooms, distinct, single trusses, was won by the Colchester grower, Mr. B. R. Cant, who had a really creditable box, the best flowers being those of Comte de Raimbaud, Comtesse de Nadaillac, Mme. Verdier, Duke of Wellington, Boieldieu (which was shown well generally), Mme. Hippolyte Jamain, Duke of Fife, crimson in colour, Le Havre, Ulrich Brunner, Gloire de Margottin, and Dupuy Jamain. The second place was taken by Mr. Frank Cant, also of Colchester. Messrs. D. Prior and Son, Myland Nurseries, Colchester, won the first prize for twenty-four flowers, and showed the several varieties in good character. The blooms of Etienne Levet, Ulrich Brunner, Catherine Mermet, Comtesse de Nadaillac, Souvenir de S. A. Prince, Victor Hugo, Marie Rady, Marie van Houtte, Abel Carrière, and Rubens were highly creditable; nor must we omit mention of Gustave Piganeau, that fine exhibition H.P., which seems as if it will be remarkably good this year. This is gratifying, as a Rose that stands well this season is of value. There were eight entries in this class, and, therefore, it was creditable of Mr. G. Mount, The Nurseries, Canterbury, to gain second place. His Teas were very fresh and full, particularly Souvenir de Paul Neyron and The Bride. Another important class was for twenty-four blooms, three trusses, the Messrs. Cant occupying first and second places respectively, Mr. B. R. Cant being first and showing well Mme. Gabriel Luizet, Gustave Piganeau, Boieldieu, Marie Baumann, Camille Bernardin, Le Havre, and Marguerite de St. Amand; whilst Mr. F. Cant occupied second place, showing in character Boieldieu and Gustave Piganeau.

We always admire the classes for a certain number of flowers of one variety, and in this section there was a very good competition. The best twelve trusses of any dark coloured Hybrid Perpetual came from Mr. Frank Cant, who had fresh blooms of Horace Vernet. Mr. Charles Turner, Slough, was second, with Marie Baumann. In the corresponding class for any twelve light coloured H.P.'s, the premier place was taken by Mr. B. R. Cant, who had Mme. Gabriel Luizet, good; whilst Messrs. D. Prior and Sons were second with La France. It was a pleasure to see several competitors in the class for twelve bunches of garden Roses, and the various exhibits were to be highly commended. The first place was taken by Mr. C. Turner, who had such charming kinds as Perle des Panachées, the common Moss, Crimson Rambler, that very fine Polyantha Rose, W. A. Richardson, Lamarque, Rosa Mundi (conspicuous for colour), and Boule de Neige. The second prize collection from Messrs. W. Paul and Son contained many gems, such as Janet's Pride, white, striped with rose; l'Idéal, Rosa rubrifolia, and Provence Commandant Beaupierre.

In the open classes for Tea Roses there were several admirable collections. The principal class was for eighteen Teas and Noisettes, distinct, three trusses of each variety, and the first prize was taken by Messrs. Prior and Son, the chief flowers being those of Innocente Pirola, Maréchal Niel, Anna Ollivier, Jean Ducher, Souvenir d'un Ami, Marie van Houtte, Cleopatra and Mme. Lambard, the blooms very good. Mr. Frank Cant was second, and Ernest Metz was of note, the Colchester flowers beating those from the Oxford grower, Mr. George

Prince. A class was also provided for the same number of single trusses, and it is noteworthy that Messrs. Prior and Son again occupied the post of honour. It often happens that a certain grower, either amateur or trade, will sweep off the prizes at a given show. Here is a case in point. The flowers were charming for colour, not over-large, and without desiring to make a catalogue of names, we must mention that Souvenir d'Elise Vardon, Catherine Mermet, Rubens, Cleopatra and Caroline Testout were the best. To show again the severe competition, there were no less than eleven entries, Mr. Geo. Prince being second. As usual, this grower had Comtesse de Nadaillac very fine. Again Messrs. D. Prior and Son were first for twelve blooms of one variety, showing in splendid character that favourite Marie van Houtte; Mr. Frank Cant second with Hon. Edith Gifford. Eight competed.

The amateurs came out strongly and their flowers were good. A very successful competitor was the Rev. J. H. Pemberton, Havering-atte-Bower, Essex, this amateur winning the first prize for twenty-four blooms, single trusses. The best flowers were those of Victor Hugo, Etoile de Lyon, Etienne Levet, Gustave Piganeau, Horace Vernet, and Jean Ducher. Mr. J. Bradbury, gardener to Mr. S. P. Budd, Bath, was second. Two classes were provided for twelve varieties, one for single trusses and another for triplets. For single blooms Mr. J. G. Grahame, of Croydon, was a good first, winning with one of the freshest boxes of flowers in the show, having excellent blooms of Victor Hugo, Viscountess Folkestone, Gustave Piganeau, and Hon. Edith Gifford. For twelve distinct varieties, triplets, Mr. Budd was first. His Teas were good, especially Mme. Cusin, which was noteworthy throughout the show, Innocente Pirola, Princess of Wales, Comtesse de Nadaillac, and The Bride. Mr. J. Garney Fowler, Woodford, Essex, was second. Two classes were provided for Tea Roses in the amateurs' division. One was for twelve blooms, distinct varieties, and a capital box which was first came from Mr. R. L. Knight, Bolling, Sittingbourne. It was one of the best in the show, and his flowers were fresh, full, and fine in colour. They comprised Souvenir d'Elise Vardon, Ernest Metz, Maréchal Niel, Comtesse de Nadaillac, Catherine Mermet, Mme. Cusin, Hon. Edith Gifford, Anna Ollivier, Souvenir de Paul Neyron, The Bride, and Jules Fingier. The best box of any Teas was from Mr. Grahame, who had charming blooms of Hon. Edith Gifford, which beat those of Maréchal Niel from Mr. A. Hill Gray, Bath. In the division for garden Roses, there were two competitors, Mr. Mease, gardener to Mr. Tate, Downside, Leatherhead, and the Rev. J. H. Pemberton. The former was easily first, and he had a well set-up box of old-fashioned kinds. There was no competition for pot plants.

The miscellaneous collections comprised many important groups. A splendid display of Roses was made by Messrs. Wm. Paul and Son, Waltham Cross, who had Marie van Houtte better than we have ever seen it. The new Hybrid Tea, Princess May, and many others which we shall note again were shown. This firm had a large collection in pots, twelve basketfuls of distinct varieties, one in each basket, and a large quantity of cut blooms. Roses were also shown by Mr. Rumsey, Joyning's Nursery, Waltham Cross, his collection being large and of much interest. Mr. G. W. Piper, Uckfield, and Messrs. G. Cooling and Sons, Bath, had old-fashioned single and other garden Roses. A fine boxful of W. A. Richardson came from Messrs. D. Prior and Son. There was a good show of hardy flowers. Messrs. Barr and Son, Covent Garden, had two very fine groups, the English Irises extremely beautiful. A remarkably fine collection was shown by Mr. T. S. Ware, Tottenham, and exhibits also came from Mr. E. F. Such, Maidenhead, Messrs. Cheal and Son, Crawley, and tuberous Begonias in a groundwork of Ferns from Messrs. H. Cannell and Sons, Swanley. The group of Pelargoniums, including the variety Rycroft Surprise, from Mr. H. J. Jones, Lewisham, was meritorious. Mr. H. B. May, Edmonton, had a miscellaneous display, and Mr. Mortimer, Rowledge, Farnham, had

a fine collection of Melons, Cucumbers and Tomatoes.

A full prize list is given in our advertising columns.

PUBLIC GARDENS.

Bolton.—The Earl of Bradford has lately presented to the borough for ever two valuable plots of land in the Haugh section of the town to be devoted to recreative purposes. The gift of his lordship is of considerable value, representing some thousands of pounds. Previously, the earl had set apart some 60 or 70 acres of land, known as Bradford Park, for the free use of the public.

Red Lion Square Garden.—The Parks Committee, in their report, stated that the trustees of Red Lion Square Garden had intimated their desire to transfer to the council their rights and duties in connection with this enclosure. A sum of £21 ls. 6d. had been expended by the trustees on account of salaries, &c., which was not secured, and they asked that the council would reimburse them that sum. This garden was one of the most useful under the control of the council, as it was in the midst of a very thickly populated and poor district. The council decided to accept the offer of the trustees.

The London County Council and paths across parks.—The London County Council lately received a deputation from Rotherhithe and Bermondsey, introduced by Mr. Cumming Macdonald, M.P. for Rotherhithe, supported by Mr. R. V. Barrow, M.P. for Bermondsey, on behalf of the vestries of Rotherhithe and Bermondsey, to keep open the path across Southwark Park until midnight, and to light it at the cost of the London County Council. Mr. Macdonald, in introducing the deputation, urged that it would be a great boon to the working men and watermen and lightermen, who often return late from their work, and he also mentioned the fact that Victoria Park had a path across it lighted at the expense of the London County Council—a boon which was originally conceded by the late Board of Works and continued by the London County Council. The Council promised to give the matter its favourable consideration.

London Open Spaces Bill.—The Parliamentary Committee reported that the London Open Spaces Bill had been before a select committee of the House of Lords, the only portion which met with opposition being that relating to the acquisition of Lincoln's Inn Fields. The committee, after hearing counsel and witnesses for and against the Bill, decided to strike out this portion. As the committee of the House of Commons passed the Bill, they were of opinion that the council should continue its efforts to open Lincoln's Inn Fields, and they recommended "That the committee be instructed to re-introduce next session the Bill relating to Lincoln's Inn Fields on the lines passed by the House of Commons. In the course of the discussion on the motion for the adoption of the report, it was stated that the House of Lords threw out the Bill because of a doubt whether any provision was made for compensation. In the result an amendment to refer the report back to the committee, with a view to consider whether the Bill could with advantage be re-modelled, was adopted."

Open spaces.—At the monthly meeting of the Metropolitan Public Gardens Association, 83, Lancaster Gate, W., the Earl of Meath, chairman, presiding, eleven new members were elected, including the Lady Reay and Miss Hesba Stretton. The chairman reported the completion and opening to the public of All Saints' Churchyard, Poplar, by Lady Reay, and of the Duncan Terrace Garden, Islington, by himself, and he announced that St. Thomas's Square, Hackney, would be opened on the 15th inst. by the Earl and Countess Brownlow. A vote of thanks was passed to Mr. Shaw Lefevre, the First Commissioner of Works, for his success-

ful efforts in securing the opening of the Home Park, Hampton. It was agreed to ask the London County Council to secure some ten acres of Millbank Prison site as an open space, in accordance with the urgent representations of the local authority of the district. The secretary reported that the Bill for the acquisition of Lincoln's Inn Fields, promoted by the London County Council, had been thrown out by the Lords' committee, but there was every hope that the Council would re-introduce their Bill in an acceptable form next session. Over forty separate schemes were considered at the meeting, including a proposed riverside space in Battersea, towards which a member promised £1000, and several disused burial-grounds in Commercial Road and other parts of the metropolis.

Royal Horticultural Society.—The next meeting of the society will be held in the Drill Hall, James Street, Victoria Street, Westminster, on Tuesday, June 20. Besides the special prizes offered for Pæonies by Messrs. Kelway and Son, of Langport, and for laced and border Pinks by Messrs. Turner, of Slough, there will be numerous prizes for competition among members of the National Rose Society.

The Royal Gardeners' Orphan Fund.—A meeting of the committee took place on Friday evening, the 9th inst., when the hon. secretary announced the following receipts: Mr. T. Mould, Birmingham, life subscription (five guineas), in place of an annual subscription; Mr. John Wills, annual birthday gift, £10 10s.; Messrs. W. Thomson and Sons, Clovenfords, Galashiels, donation, £1 10s.; Mr. H. J. Jones, Ryecroft Nursery, Lewisham, donation, £1; young men at the gardens, Ruxley Lodge, Surrey, per Mr. J. Miller, 10s.; and Mr. J. Perry, Crystal Palace Park, donation, £1.

Sand for Muscat Grapes.—I quite agree with "E. M." (p. 487) as to the value of sand for Muscat Grapes. At one time the Muscat Grapes here were very unsatisfactory, the foliage being of a sickly yellow, and the fruit directly it was ripe quickly becoming flabby. It was thought at one time that it was on account of the Vines being old and that the best course would be to root them out, prepare a new border, and plant afresh. Having an especial liking for old Muscats, knowing that when well grown these produce the best Grapes, also having in mind another case of renovation which I brought to a successful issue, I decided to treat these in the same way. Some old red sandstone was procured, pounded up, and used at the rate of a sixth in the formation of the border. The inside border was re-made one season and the outside the next, with a decided change in the quality of the Grapes as a result. The rods being old and decrepit looking were headed down to within 18 inches of the bottom and young rods run up. This process of cutting down was gradual, a few one season and the others after, so as not to be without Muscat Grapes. The Vines are now and have been for the past four or five years in a very satisfactory state. The rods are strong, the foliage healthy, and at the present time the Vines are carrying a fine crop of shapely bunches. The sand no doubt has been an important factor in this improvement.—A. YOUNG.

The weather in West Herts.—Another unseasonably warm week, and the twenty-first in succession. On Sunday last no sunshine at all was recorded; this is the first sunless day we have had here for eight weeks. On that day the temperature in the shade did not rise higher than 60°; whereas on Tuesday and Wednesday the highest readings were 77° and 81°. Although since the beginning of the month the days have proved as a rule very warm for the time of year, the nights, on the other hand, have been mostly chilly. In fact, on three nights the exposed thermometer has indicated from 4° to 6° of frost, and on four it went down to within 3° and 4° of the freezing point. These frosts and cold

nights have seriously affected my Roses, the buds of which were previously so promising, all the early blooms being more or less injured by them. At 1 foot deep the temperature of the ground now (Wednesday) stands at 68°, and at 2 feet deep at 62°. Last year on the same day the reading at both these depths was 59°. On Tuesday the sun was shining brightly for twelve and a half hours. I cut my first Marie Baumann Rose on Monday last, which is eighteen days earlier than its average date of first flowering in the previous five years, and nearly a fortnight earlier than in the most forward of those years.—E. M., *Berkhamsted*.

Figs in confined borders.—There can be no question that the practice of growing Figs in a confined rooting space is well worth more general adoption, especially by those people who may have hitherto had a difficulty in getting their trees to bear on account of their growing strongly. Especially also where the structures are small is the system to be commended. This is the case with the Fig house under my charge. Each tree when first planted was placed in a bricked-off partition. The growth made is very short and fruitful, and the secret of success in making the trees swell off good crops of fruit is keeping them plentifully supplied with moisture, both clear water and liquid manure. Stopping of the shoots is never needed, and only when a branch outgrows its limits is it shortened back.—A. YOUNG.

The Mistletoe (Arbor).—We cannot tell you where the lines you refer to are to be found.

Rhazya orientalis (Boissier).—In reply to "J. C. L." (p. 494), this is a native of Asia Minor, and belongs to Apocynæ; the flowers are star-shaped and greyish blue.—MAX LEICHTLIN, *Baden-Baden*.

Names of plants.—*E. Semper*.—1, *Iris sibirica*; 2, *Doronicum plantaginifolium*.—*E. M. G.*—*Actinidia volubilis*.—*Orchid*.—Send better specimen; the one received quite shrivelled up.—*Mrs. Blackwell*.—1, *Polygonum Brunonis*; 2, *Geranium Endressi*; 3, *Hemerocallis flava*; 4, *Campanula Medium calycanthema*.—*J. R. D., Reigate*.—*Lonicera Ledebouri*.—*Mrs. Kelly*.—*Medicago falcata*.

BOOKS RECEIVED.

"British Forest Trees." J. Nisbet. Macmillan and Co.

Report of the Missouri Botanic Garden for 1893.

"From Holborn to the Strand: the true line." W. Robinson, THE GARDEN Office, 37, Southampton Street, Strand.

"Cottage Gardening: a Guide to Outdoor Cultivation." By E. W. Badger, F.R.H.S. Twenty-seventh thousand. Houlston and Sons, London, E.C.

"The Protection of Woodlands against Dangers arising from Organic and Inorganic Causes." By Hermann Furst, Director of the Bavarian Forest Institute at Aschaffenburg. Authorised translation by J. Nisbet, of the Indian Forest Service. Edinburgh: David Douglas.

"The Garden" Monthly Parts.—This journal is published in neatly bound Monthly Parts. In this form the coloured plates are best preserved, and it is most suitable for reference previous to the issue of the half-yearly volumes. Price 1s. 6d.; post free, 1s. 9d. Complete set of volumes of THE GARDEN from its commencement to end of 1892, forty-two vols., price, cloth, £30 12s.

"Gardening Illustrated" Monthly Parts.—This journal is published in neatly bound Monthly Parts, in which form it is most suitable for reference previous to the issue of the yearly volumes. Price 5d.; post free, 8d.

"Farm and Home" Monthly Parts.—This journal is published in neatly bound Monthly Parts, in which form it is most suitable for reference previous to the issue of the yearly volumes. Price 5d.; post free, 8d.

"Hardy Flowers." Giving descriptions of upwards of thirteen hundred of the most ornamental species, with directions for their arrangement, culture, &c. Fifth and Popular Edition, 1s.; post free, 1s. 3d.

"The Garden Annual" for 1893.—Contains Alphabetical Lists of all Branches of the Horticultural Trade. The Lists of Gardens and Country Seats (containing over 9000) have been very carefully and extensively revised, and are admitted to be the most complete ever published. Price 1s.; by post, 1s. 3d. All of our readers who are interested in the improvement of cottage homes are invited to help us to make Cottage Gardening known. It is published at the very lowest price to meet the wants of those for whom it is intended, and copies will be sent for distribution, free, by the publishers, Messrs. Cassell and Company, La Belle Sauvage, Ludgate Hill, E.C.

No. 1127. SATURDAY, June 24, 1893. Vol. XLIII.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—*Shakespeare.*

KITCHEN GARDEN.

DROUGHT AND THE POTATO CROPS.

It is not often that Potatoes present such a promising appearance as they are doing or did at one time this season. Only quite the earliest planted, quick-growing varieties were checked by frost, all the rest having grown strongly and healthily from the first, and but for the prolonged drought, enormous crops must have been had. As it is, I have my doubts about the matter. Already quite the latest varieties have been in bloom some days, or in the case of *Imperator* fully a month earlier than usual, and all other varieties are displaying a similar tendency to flower. This most probably means a shorter period of root and top-growth than is desirable, light crops being the outcome. Last year remarkably heavy crops of *Imperator*, *Bruce*, *Reading Giant*, *Magnum Bonum*, and such like were lifted in this neighbourhood, but in most instances the haulm was still green and growing till cut down by frosts on September 17, and to this late and hitherto uninterrupted growth were partly attributed the extra heavy crops lifted. It ought, perhaps, to be added that in most instances the haulm had been kept green and free from disease by means of disease prevention sprayings.

The question that I am leading up to is this, What will be the effect of the early drought upon the crops generally? Judging from what has already taken place in the case of early varieties, the effect will be anything but satisfactory. Where the soil is of a light, non-retentive character, and little or no solid manure used, early Potatoes soon ceased to grow, the haulm falling about the rows and the tubers maturing quickly, light crops of exceptionally good quality for the time of year being the result. In some instances where enough rain fell on one occasion to reach the roots, the haulm freshened up and the tubers commenced growing out or protuberating. This is what I am afraid of in the case of the later varieties, the tuber growth of which has received a check owing to the dryness of the soil. So convinced am I that this will occur, that the haulm of a great breadth of late-planted *Ashleafs* and *Cole's Favourite* will be drawn shortly, rain or no rain, and we shall then be certain of a moderately heavy crop of medium-sized tubers of the best table quality.

By drawing the haulm while yet green, though falling about the rows, and before what may prove a spell of rainy weather sets in, disease will not have a chance to do any mischief—another point in favour of anticipating the usual time for lifting. Those who are preparing for experiments in the direction of spraying the haulm with *Bouillie Bordelaise*, or a mixture of sulphate of copper, lime and molasses, are of opinion that when once we have a turn of wet weather Potato disease will be only too plentiful and will spread rapidly, but they will not commence the spraying all the while fine weather lasts, as there is no doubt this disease-preventing mixture is somewhat prejudicial to the growth of haulm.

As yet it is much too early to contemplate drawing the haulm of second early and main-crop varieties, at any rate where the haulm is still erect and growing, but I am under the impression that the drought has in many places stopped the tuber growth, and in this case directly a soaking rain falls, growing out or a fresh growth of tubers from those already formed and partially matured will take place, to the no small injury of the latter. When there is a mixture of tubers, that is to say, some in two different ages, they cannot well be separated and they spoil each other. Should we get a soaking rain during the next few days or before this appears in print, this may be in time to prevent protuberation in all but the most forward crops, but if much longer delayed the consequences will be serious and once more the foreigner will have his opportunity.

Chemical manures now play such an important part in the production of heavy crops of Potatoes, that it will seem little short of heresy to condemn their use when this is done to the exclusion of solid manure. Recently I had an opportunity of inspecting the *Warminster* series of experiments in Potato culture, these being conducted in connection with the *Wilts Technical Education Schemes*, and what I there saw only further confirmed my own views and experience in the matter. There is no mistaking the fact that the plots dressed with complete chemical manure, that is to say, a mixture of either nitrate of soda or sulphate of ammonia, superphosphate and kainit, present a very promising appearance, or more so than those dressed with single or incomplete manures, or not manured at all; but the former already betray the need for moisture or humus, such as would have been supplied by a free use of farmyard or other solid animal manures. It is soils deficient in humus, or rather the crops on the same, that are the first to suffer from drought, and the old-fashioned market growers who depend largely upon mixed farmyard or good horse stable manure will have good reason to be satisfied with the appearance of the field crops up till now. It is the judicious combination of the two that gives the best results during most seasons.

W. I.

SETTING TOMATO FLOWERS.

At page 480 "A. D." asks if anyone has ever employed the syringe to assist in the fertilisation of Tomato flowers, a query I can answer in the affirmative, having advocated the practice under certain conditions in the pages of *THE GARDEN*. The conditions under which I advocate the practice are when the atmosphere is parched and dry, and then a slight syringing between 3 p.m. and 4 p.m. would make the pollen more potent. If I find the fruits are setting well without such assistance I do not advocate it or practise it, but when I find the blooms falling without setting, then a light syringing has the desired effect, but, of course, only during the summer months. To practise syringing, whatever the weather or condition of the plants, would only result in failure.

A close and vitiated atmosphere is certainly inimical to a good set, and with the flowers falling off instead of setting, the tendency of the plants is to take on a gross habit. The structures again the plants are growing in have much to do with the proper fertilisation of the flowers. When these are low, dark, and old-fashioned, the growth made is not of that sturdy and fruitful habit which it obtains in the light and well-ventilated structures of the present day. The practice which I adopt with Tomato plants is to grow them on from the earliest stages fully exposed to the light, the stems thereby becoming more woody and able to produce fertile flowers. Of course, ample ventilation has to be

afforded, this being tempered with a little warmth in the pipes. To assist fertilisation, the stems are tapped daily at the point where the opening flowers are. Fertilising Tomato flowers is a tedious operation, and in many cases quite ineffective. The only time I adopt it is in the autumn, if by chance the winter crop is not setting satisfactorily.

Over-feeding is also a sure source of non-setting, the flowers in this case proving abortive. To manage the plants so that they will grow fairly strong is all very well, but over-feeding is a mistake. I have also proved that plants which set the earliest trusses of flowers will invariably do the same with the succeeding ones. The fruit acts as a safety-valve to over-excess of vigour, and then feeding may take place more freely; in fact, it is possible for plants carrying a heavy crop of fruit to drop the succeeding flowers through over-exhaustion. This season even I have had, and have got now, strong plants of *Challenger* growing in 13-inch pots and carrying very heavy crops. I noticed that the succeeding flowers were not setting so freely as I should like, but upon extra feeding taking place, the setting again was all that could be desired. Plants also set the more freely the nearer they are to the glass in reason, but, of course, the fruits form freely enough close to the bottom as long as direct light reaches them. Some of my plants this season are growing in the centre of a newly-planted vinery; consequently the border is quite 12 feet from the glass, and these are fruiting right to the bottom.

A. YOUNG.

SPINACH AND ITS SUBSTITUTES.

OF Spinach proper there are two types, the prickly and the round-seeded, each supposed to be especially adapted for the winter and spring supply respectively. Certain it is, however, that this order of seasons for each kind is now beginning to be transposed, as one or the other may be relied upon to succeed, whatever the season. However this may be, soils, or at least some of them, have much more influence on the success or otherwise of a particular type of Spinach than many people are aware of. Of this I have had ample proof in this garden. The prickly-seeded or winter Spinach succeeds much better as a summer crop than even the round-seeded, which is supposed to be the best for this season. Even the *Victoria* will succeed much better as a winter crop than a summer one. I know that many people look upon the round-seeded variety as the special kind for summer use, that they will not try any other. If the round-seeded will not succeed, my advice is to give the prickly-seeded a trial. Any variety which will give a succession of succulent leaves should be grown; but whatever the variety, this cannot be done unless the soil is in a highly fertile state. During hot and dry weather it is with the greatest difficulty that Spinach of any kind will succeed, it running to flower-stem when only 2 inches or 3 inches above ground. To guard against this as much as possible, it should be sown on cooler sites, east or north borders for preference. To keep up a constant supply, sowings will have to be made at intervals of ten days or a fortnight both throughout this and the next month. *Victoria* is now becoming a very popular variety. It is a most decided improvement on the ordinary round-seeded, being much more vigorous in growth and having the additional merit of not running to seed so quickly. Not only as a summer crop, but also as a trustworthy winter kind is it most valuable. *Monstrous Viroflay* is certainly a large-leaved kind, but I shall not grow it again, it running to seed much too quickly with me; in fact, it is a variety which

might well be expunged from seed lists, the Victoria being much the better variety.

Of substitutes for Spinach there are several. The first on the list is what is known as the New Zealand Spinach (*Tetragonia expansa*). Its value lies in its growing freely during the drought and heat of summer, when often Spinach can with difficulty be secured. Being raised in warmth, the plants are set out on a sunny border early in June. It is the young shoots which are gathered. Not many plants are needed, a dozen being ample, these forming clumps a yard across each. The Orach or Mountain Spinach (*Atriplex hortensis*) is another substitute. It must be sown on good soil for succession. Seed may be sown both in the spring and autumn, and, like Spinach, it succeeds best in rich and moist soil. Mercury again is also called a Spinach substitute. In Lincolnshire, and where it is cultivated more than in any other part of England, I have frequently come across it. The seeds may either be sown in the spring or autumn on well-drained soil, and also highly manured. Being a perennial, a dressing of manure should be given annually. The seedlings may either be thinned out, or transplanted to a distance of a foot apart, selecting showery weather for the purpose. The clumps may also be divided, this operation being performed just as fresh growth is starting. It may either be used as Spinach or the young shoots in the spring may be used as Asparagus. When young the shoots may be boiled whole, but they are generally peeled before using. The shoots are more tender if the plants are earthed up in the spring previous to starting into growth.

The Spinach Beet is really an excellent Spinach substitute, and a row should be grown in every garden. Being a perennial, the plants will not need disturbing very often, but whenever they show signs of exhaustion, take up, divide and replant on a fresh site. Each spring a liberal top-dressing of manure should be applied. Spinach Beet may be grown from seed sown in the spring, or by division at the same time. The younger leaves are those which are gathered, but if it should be so desired the leaf-stalks may also be used. In this case the crowns are best moulded over in the early spring with leaf-soil, then the stalks as they rise will be blanched, and consequently more tender. These are served up like Seakale or Asparagus. A. Y. A.

LETTUCES FOR ALL SEASONS.

To ensure a continuous supply of Lettuces, there must be a regular course of sowing extending over the greater portion of the year, and not only this, but suitable varieties must be chosen, or it will be a matter of impossibility to keep up a succession even where there is good frame accommodation. It is surprising what may be done in the open air when raised borders and sheltered spots are available, but there cannot, of course, be any certainty of getting a regular supply from such positions during the winter months. For outdoor sowing there is no Cabbage variety that stands the winter better than the Hardy Hammersmith. I have repeatedly had useful heads of this sort ready for cutting in February on a narrow and raised south border. To obtain these at the time named, seeds are sown at intervals from the second week to the end of August, planting a portion, if not all, from each sowing. This is advisable because of the varying influences of the season, brought about by mild or severe weather in winter. Hicks' and the Hardy Bath Cos are the best sorts in this section to endure frosty weather, but neither of these is obtainable so early in winter as the Cabbage variety above mentioned. One or both of these may

be planted to form a succession, and for market they are generally the most popular and realise the best prices. Where there is a large demand, these would be invaluable even to those who may have plenty of frame room. At one time I used to raise a quantity of these (Bath Cos) in September, and before sharp frosts set in they were dibbled pretty thinly into frames that had been cleared of summer Cucumbers and Melons, and protected by lights and litter only when severe weather prevailed. These were planted out in March on a narrow border at the foot of a south wall. By that time they were of good size and strength, and by attention to watering at the time of planting, they quickly became established and produced fine heads. To those who cannot command a sufficiency of fermenting manure for forcing early Lettuces, this plan of forwarding autumn-sown stock is useful.

With mild hotbeds available it is but a short period between the time of sowing and gathering of the crop, when such varieties as the Early Paris Market, Golden Queen, or Commodore Nutt are chosen. The last-named did remarkably well with me this spring in frames and on outdoor borders. From a sowing made in February, I filled a few lights on a mild hotbed on March 1, and by the end of the same month I had plenty of Lettuces ready for cutting. The same variety sown on a small border immediately in front of the plant stoves on March 4 was fit for use two months later. It is smaller growing than either Paris Market or Golden Queen, but each has its own value for forcing, spring and summer uses. Perfect Gem is my favourite summer Cabbage Lettuce for outdoor sowing; it grows to a good size and has a most distinct dark green colour. Continuity and Marvel are red-edged sorts, the former being extremely valuable in dry weather, and is the better one of the two. It does not readily run to seed, and is most useful on that account. From a spring sowing the same plants remain good over a long time after reaching an almost fully grown state, and the flavour is also good. Favourite is a curled-edged Endive-looking sort, of a light green colour, imparting an ornamental character to the salad bowl. This stands dry weather well, and from our cold Peach house, in which a number were planted in the autumn of last year, we were able to cut useful salad in January and February. Paris Cos and the Superb, or selected strains of this same Lettuce, are all good for summer work. The Balloon, Mammoth, Giant, Magnum Bonum, and other large growing varieties each have their own respective merits and admirers. These are suitable only for the summer and autumn; they do not turn in quickly enough to justify very early sowing, and are not hardy enough to stand much frost.

Rood Ashton.

W. STRUGNELL.

Tomatoes in boxes.—It is a satisfactory point in connection with Tomatoes that although naturally of gross growth and giving the best results when the roots can ramble freely, good crops may be had under very restricted conditions, as regards root-run. I lately saw some plants at St. George's Hill, Byfleet, growing in boxes but little if any larger than those commonly used for window plants. They are carrying quite a nice lot of fruit which has every appearance of ripening off satisfactorily. These plants are in a low span-roofed house, which is partly occupied with early Cucumbers and a collection of warm house plants. Considering the constantly moist atmosphere of the house and the comparatively small amount of air admitted, I was rather surprised to see how freely the fruit had set. I should have expected that the plants would have run too much to leaf. Probably the restricted root-run has kept the growth within bounds, for I feel sure that had they been planted out, there would have been few Tomatoes. A curious fact in connection with these Tomatoes is that they are growing in the same soil that was used the two preceding years, so that this season they are feeding on the roots of last year's crop. I should never have thought of growing Tomatoes quite in this fashion, which has

at any rate the merit of simplicity. I should mention that the plants are from cuttings, which I suppose were dibbled into the boxes when the old ones came out. This may in some measure account for the plants coming into fruit more readily.—J. C. B.

Early Peas.—In the note on this subject in THE GARDEN of June 10, for "May 21" please read "May 12." There would be nothing exceptional in the first-named date in a season like the present.—E. BURRELL.

NOTES FROM ASCOTT PARK, LEIGHTON BUZZARD.

PERHAPS no place within an easy distance of London furnishes such charming illustrations of old-fashioned and modern gardening in combination as does Ascott Park, Leighton Buzzard, the Buckinghamshire residence of Mr. Leopold de Rothschild. The mansion, which was originally a farmhouse, then enlarged to a hunting box, and later in point of time converted into a country gentleman's residence, has about it all the old-fashioned characteristics which must date for some time back; portions of orchards have been incorporated into the pleasure grounds around, the trees retained, and the trunks of many of them are festooned with climbing Roses. The house, which is in course of considerable enlargement, is covered with many creepers. Did anyone before see golden-leaved shrubs, and especially the Golden Irish Yew, take on a more brilliant colouring? The latter are mainly seedlings, and in the clear sunlight they are radiant in colour. A walk with a terrace wall on one side covered with climbers, conspicuous among which is the scarlet trumpet Honeysuckle, has a narrow border of Roses at its foot, and one also on the opposite side of the walk, planted in each case largely with Polyantha Roses, which grow vigorously and bloom with marvellous abundance, throwing up strong stems surrounded by huge clusters of blossoms. One of the prettiest of the pale-coloured varieties, Mignonette, is remarkably free from mildew at Ascott. Perle d'Or, pale sulphur-yellow, is very free also; Anne Maria Montravel, white, is very fine; and Clothilde Souper, large, white, a very vigorous grower, is superb. These Polyantha Roses are continuous in sending up strong shoots, which produce heads of bloom almost countless in number. Tea Roses are also grown for cutting, and plantations meet one on almost every hand. A few noteworthy trees claim attention, such as Cedrus atlantica glauca, so finely tinted as to appear covered with a robe of glistening silver; Waterer's Weeping Beech, of which there are excellent specimens; and one of a red-tinted form of Acer polymorphum quite 12 feet or so through, and well furnished. In the shrubby borders can be seen quite striking examples of a cut-leaved Elder with such elegantly divided leaves, as to place it far above the level of the common form. A hedge of Rosa rugosa in one portion of the grounds had made a luxuriant growth, and Mr. Jennings said it was cut down every year, as it springs up vigorously during the summer. In the plant houses, Carnations, largely of the Malmaison type, were still in flower, though the season is getting over. Two self-coloured summer-flowering Carnations were especially attractive under glass. One is Niphetos, a superb white self raised by Mr. Martin R. Smith at Hayes, remarkable for its purity, fine substance, form, and vigorous growth; and Selby, a fine deep yellow in the way of Germania, but with greater depth of colour. The foregoing are but a few of the leading features in this admirably kept place. A visit to Ascott at any time of the year is sure to reveal many characteristics that are well worthy of notice. To see the grounds in their rich summer beauty, a visit should be paid in July or August. R. D.

The English Flower Garden.—Design, Views and Plants. Third edition, revised, with many new illustrations. London: J. Murray, and through all booksellers.

TREES AND SHRUBS.

THE SHRUBBY VERONICAS OF NEW ZEALAND.*

THE genus *Veronica*, so long familiar to the gardeners of the British Islands through the cultivation of a number of herbaceous species collected for the most part from the temperate regions of Europe and Western Asia, and in less numbers from North America, presents in New Zealand and the adjacent islands an unaccustomed aspect. It is there by far the largest genus of flowering plants, now numbering about sixty species, of which few are herbaceous and the great majority shrubs of various sizes, rarely attaining the dimensions of small trees. Sir J. D. Hooker says of the genus: "In New Zealand it forms a more conspicuous feature of the vegetation than in any other country, both from the number, beauty and ubiquity of the species, from so many forming large bushes and from the remarkable forms the genus presents." Variability, which is

is not one of those that are obtainable which does not merit the gardener's attention, and although our range of choice is restricted by the exigencies of an unpropitious climate, still there are many left, and those far from the least attractive, which will withstand even the wet and cold, and, within certain limits, the killing effects of the smoke and chemical-laden atmosphere of the Manchester district.

In the following short sketch of the New Zealand Veronicas in cultivation here the classification of Mr. J. B. Armstrong, of the Botanic Gardens, Christchurch, in his "Synopsis of the New Zealand Species of *Veronica*," published in the "Transactions and Proceedings of the New Zealand Institute," 1880, vol. xiii., is followed.

SUB-GENUS I.—EU-VERONICA.

This section contains ten species, of which three have been imported, and presents something like an approach in appearance to the Veronicas of the Northern Hemisphere.

V. LINIFOLIA is very different from its congeners, and in summer presents a deceptive resemblance

which have until the last few years absorbed whatever care the gardener could bestow upon New Zealand Veronicas, and have also hitherto monopolised, to the exclusion of their congeners, the skill of the hybridist. The first group in this sub-genus contains three species, all having serrate or crenate leaves and paniculate flowers.

V. HULKEANA is the well-known greenhouse shrub, with slender flexible branches, sparing of leaves and lilac bloom.

V. LAUDIANA has stout, decumbent to ascending, branches about 8 inches high.

V. RAOULI is a small, robust shrub about a foot in height.

Next follow half-a-dozen species of peculiar interest to the gardener; they have, for the most part, stout round stems and thick, fleshy, glaucous leaves, often tinged with red or purple at the growing tips of the branches.

V. AMPLEXICAULIS is a low-growing shrub with erect branches, thickly set with broad, obovate, glaucous leaves.

V. CARNOSULA has a prostrate, merging into an ascending habit, stout, round, smooth stems and glaucous leaves. Several forms, two of which are very floriferous, are in cultivation.

V. GODEFROYANA is of the same type.

V. PINGUIFOLIA is a small, robust shrub, varying in habit from erect to decumbent; it has glaucous foliage and flowers profusely.

V. GLAUCCO-CERULEA, of which two forms (major and minor) are to be obtained, is of erect growth, and especially noticeable for the deep colour of the foliage, at times edged with red, and dark purple stems.

V. PIMELEOIDES, of which, unfortunately (unless what is now being distributed as the major form of *V. glaucco-cerulea* is in reality this species), only a creeping prostrate form, one extreme of a variable type, has been introduced, is a very pretty plant when the delicate grey of the leaves sets off the purplish flowers. To gardeners who take pleasure in happy contrasts of colour in foliage, all of the last named group are invaluable.

V. EPACRIDEA and *V. HAASTI* are low-growing small-leaved species, but there is some doubt as to whether the plants introduced under these names are true. In any case, *V. epacridea* is

not so hardy as the height of its range upon the Southern Alps would lead us to assume.

V. BUXIFOLIA forms a very dense bush, has deep green coriaceous leaves and is attractive at all times. *V. laevis* and *V. monticola* are closely allied.

V. ANOMALA is a taller-growing, erect species, with little star-like white flowers in terminal, compound, many-flowered spikes. There are several forms.

V. VERNICOSA is a low, loose-growing shrub with small leaves, shining as though varnished, and lined with red on the edges when young.

V. ELLIPTICA is well known and widely distributed, reaching a height of 4 feet to 6 feet in cultivation, and has light green foliage and large, white, sweetly scented flowers.

V. CHATHAMICA and its well-marked minor variety are beautiful prostrate plants, clothing stonework with a dense cushion of shining green glabrous foliage and purple flowers.

Lack of space, not want of merit in the species, prohibits more than the mention of *V. diosmaefolia*, a tender, but most floriferous species; *V. Colensoi* and its glaucous and other varietal forms; *V. rakaiensis*; *V. ligustrifolia*, with narrow, almost linear leaves; *V. parviflora*, like a minor *V. ligustrifolia*; *V. Kirki*, *V. Lewisi* and *V. Dieffenbachii*, which are for the most part



Veronica diosmaefolia. Engraved for THE GARDEN from a photograph sent by Mr. R. Okell, Manchester.

characteristic of the New Zealand flora in general, is also a marked feature in the case of the shrubby Veronicas. Not only are species made difficult of discrimination by the existence of intermediate links between well marked and distinct forms, but they are also variable in themselves, and present varieties which remain constant over large areas, even when growing intermingled. In this respect the botanist's difficulty is the gardener's gain. Of the whole number of New Zealand shrubby Veronicas, all but one are peculiar to the islands. *V. elliptica* alone is found elsewhere, viz., in South Chili, Fuegia, and the Falkland Islands. This species is also remarkable on the two other grounds—that it is the tallest grower, attaining in the Auckland Islands a height of 30 feet, and that, although distributed over the widest area, it is the least subject to variation, being, according to Hooker, the only species which it is impossible to confound with any other.

About forty of the known species have now been introduced to cultivation in the British Islands, and while the absence of many which are very desirable is still to be regretted, there

to a herbaceous plant. It has small, narrow, closely set, bright green leaves, procumbent branched stems, and comparatively large flowers on slender axillary peduncles about 6 inches in height. It is an attractive rockwork plant.

V. LYALLI has slender procumbent and ascending stems, serrated leaves, and racemes of delicate lilac flowers, abundantly produced in favourable situations; it is less than a foot high in cultivation. *V. Lyalli* is in itself very variable in form of leaf and habit; it passes into *V. cataractæ* by the leaves becoming larger and broader (half an inch to 5 inches long); into *V. cataractæ* var. *a*, Hook. fil., with leaves 2 inches to 5 inches long; into *V. nivalis* by the raceme becoming few-flowered and glandular; also by other variations into *V. diffusa* and *V. lanceolata*. All of these are yet to be acquired by us, except perhaps a doubtful form of *V. cataractæ*, which, if true, bears the smallest of leaves credited to that Protean species.

V. BIDWILLI is a trailing species with prostrate, rooting stems and very small toothed leaves.

SUB-GENUS II.—KOROMIKO

(so named from the native name of *V. salicifolia*) is the largest section, numbering about forty species, of which twenty-eight or thereabouts are accessible to us, and comprises, besides many distinctly alpine forms, all those large-flowered and comparatively tender species

* Paper read by Mr. Robert Okell, B.A., before the Manchester Gardeners' Improvement Association, February 3, 1893.

comparatively tall-growing shrubs. Of a larger growth are

V. TRAVERSI, an erect shrub, forming a close, stout bush with lilac flowers.

V. SALICIFOLIA, with white flowers, sometimes having a bluish tinge; the pure white form, when the racemes of flowers weigh down the pendent branches, as though with a load of snow, is a most beautiful sight.

V. SPECTIOSA is one of the earliest introductions of the genus, whose purple flowers and large dark green shining leaves have been long familiar. Hybrid forms between members of this sub-genus are numerous, the original parents being for the most part *V. speciosa*, *V. elliptica* or *V. salicifolia*. The earlier hybrids had their origin in the British Islands, but of late years the French have far outstripped us in the race for new varieties, the names of Hoste and Rozain being especially conspicuous. The late Isaac Anderson-Henry led the way with the now well-known *V. Andersoni*. Of this there is a variegated leaved form, which, if variegated leaves are to be desired by the gardener, is valuable, being distinct in its variegation and not weak and washy in tone. *V. Henryi*, *V. Lindleyana* and many others followed, until a large collection could be now easily made, giving a range of colour from pure white, through many shades of blue and of red, to the magnificent crimson of *V. speciosa* var. *imperialis*. One recent hybrid, *Arc-en-ciel* (Hoste), has leaves variegated with creamy yellow. It is sold by MM. Lemoine et fils. A hybrid (probably having *V. Hulkeana* for one of its parents) has been raised by Mr. Martin, of the Fairfield Nurseries, Dunedin, and lately introduced here under the name of *V. Fairfieldi*. It grows barely a foot in height, has serrate leaves and purple stems, the leaves being often tinged with purple on the underside. The flowers are larger than those of *V. Hulkeana*, and the spikes shorter and more racemose. In this sub-genus there are also several much-to-be-desired species awaiting introduction, among which may be named *V. odora*, which is like a small *V. elliptica*, and has white flowers of a delicious fragrance; *V. Benthami*, a native of the Auckland group, with flowers which light up its barren native hills with vivid blue; and *V. macrantha*, the largest flowered species in the genus, the white blooms being each about 1 inch in diameter.

SUB-GENUS III.—PSEUDO-VERONICA

contains seven or eight species only, but these, as well from their hardiness as their quaint and interesting forms, are of especial use in gardens. Of foliage, in the gardener's meaning of the term, they have none, or next to none. The leaves are either rudimentary or have become merely closely adpressed scales, and the plants seem to mimic in the strangest way the appearance of families far removed in botanical relationship, e.g., conifers and lycopods, and even if they flower sparsely in cultivation, these essentially high alpine forms present attractions in habit and appearance which entitle them to a foremost place in the rock garden.

V. CUPRESSOIDES is an erect-growing bright green shrub, reaching 4 feet in height, and bearing a very striking resemblance to a *Retinospora*. The flowers are white tinged with violet. A golden variegated form existed, but has now been lost. It will probably recur. There is also a variety having a coppery tinge.

V. CUPRESSOIDES VAR. *VARIABILIS*, which was introduced into and distributed in this country as *V. salicornioides*, is of lower growth than the type and forms a dense spreading bush, under a foot high, of light green hue, gaining for the most part in established specimens a golden tinge on the tips of the shoots. The flowers are white with pink anthers. This variety is extremely variable and has caused much discussion. The subject was exhaustively treated by Mr. N. E. Brown in the *Gardeners' Chronicle* for January 7, 1888.

V. LYCOPODIOIDES is a low-growing spreading species with square stems and little sharp-pointed leaves adpressed at the base. It is dark green in colour and in general appearance fully justifies its specific name.

V. ARMSTRONGI is an upright growing, freely-branching shrub, with leaves represented by scales having sharp-pointed tips. The colour is a peculiar glaucous green with an ochre-yellow tinge towards the ends of the branches.

V. HECTORI is also an upright-growing species with scale-like leaves and round branches, greyish green in colour. Mr. Lindsay, curator Royal Botanic Garden, Edinburgh, says of this species that the original plant first introduced into England forms one of the chief attractions in the rock garden of the Royal Botanic Garden at Edinburgh.

V. LOGANIOIDES is a new introduction with scale-like leaves not closely adpressed, and probably belongs to this section. Of the same sub-genus, but as yet un-introduced into the British Islands, are *V. tetrasticha*, *V. salicornioides*, and *V. tetragona*. The advent of all the three last-named species is anxiously looked forward to.

Although many of the shrubby Veronics, especially those of the *V. speciosa* type and the various hybrids of garden origin, are most useful for the decoration of the conservatory in late autumn and winter, it is as hardy plants that they make their strongest appeal to the gardener, and in this respect climate is the essence of the question. The genus has been most carefully studied and its requirements noted at the Royal Botanic Garden, Edinburgh, and the following is the list, completed to the end of last year, of the species there cultivated, giving, where practicable, the altitude of habitat above the level of the sea and the comparative hardiness of each:—

Species of Veronica from New Zealand, cultivated in the Royal Botanic Garden, Edinburgh, in 1892.

Hardy species.	Altitude. Feet.	Half hardy species.	Altitude. Feet.
<i>Veronica Hectori</i> , Hook. fil.	7-7500	<i>Veronica Lyalli</i> , Hook. fil.	2-1000
<i>Veronica Loganoides</i> , Arm.	5-6000	<i>Veronica Bidwilli</i> , Hook. fil.	2-3000
<i>Veronica Lycopodioides</i> , Hook. fil.	4-9000	<i>Veronica catartacte</i> , Forst.	—
<i>Veronica Cupressoides</i> , Hook. fil.	4000	<i>Veronica Kirki</i> , Arm.	—
<i>Veronica Cupressoides</i> var. <i>variabilis</i> , N. E. Br.	—	<i>Veronica epacridea</i> , Hook. fil.	5-6500
<i>Veronica Armstrongi</i> , Kirk.	—	<i>Veronica vernicosa</i> , Hook. fil.	1500-3000
<i>Veronica cuneata</i> , Hook. fil.	5000	<i>Veronica Lewisi</i> , Arm.	—
<i>Veronica pinguifolia</i> , Hook. fil.	5000	<i>Veronica ligustrifolia</i> , A. Cunn.	—
<i>Veronica angustifolia</i> , Arm.	5000	<i>Veronica chatmanica</i> , Buch.	—
<i>Veronica buxifolia</i> , Benth.	1-5500	<i>Veronica Hulkeana</i> , F. Muell.	1500-2000
<i>Veronica Lewisii</i> , Benth.	2-6000	<i>Veronica Fairfieldi</i> , Hort.	—
<i>Veronica Godefreyana</i> , Deane.	—	<i>Veronica diosmeifolia</i> , R. Cunn.	sea-coast
<i>Veronica glaucocœrulea</i> , Arm.	2-5000	<i>Veronica elliptica</i> , Forst.	sea-coast
<i>Veronica Colensoi</i> , Hook. fil.	3-5000	<i>Veronica parviflora</i> , Vahl.	sea coast
<i>Veronica Traversii</i> , var. <i>glaucæ</i>	—	<i>Veronica speciosa</i> , R. Cunn.	sea-coast
<i>Veronica rakaiensis</i> , Arm.	2-4000	<i>Veronica salicifolia</i> , Forst.	—
<i>Veronica monticola</i> , Arm.	3-4500	<i>Veronica Lavandiana</i> , Raoul.	—
<i>Veronica pimeleoides</i> , Arm.	2-4000	<i>Veronica Andersoni</i> , Hort.	—
<i>Veronica limifolia</i> , Hook. fil.	2500-4500	<i>Veronica elegans</i> , Benth.	—
<i>Veronica anomala</i> , Arm.	—		

It is evident that the greatest altitude at which any species is found is, in a way, the measure of its hardiness, and that the range of altitude through which a species occurs is immaterial. From this point of view, the

genus naturally distributes itself, so far as the climate of Edinburgh is concerned, into three sections—first, tender species inhabiting the coast zone; secondly, half-hardy species whose upward limit is 4000 feet or under; and, thirdly, hardy species with a limit of over 4000 feet.

The critical point between hardy and half-hardy species appears to be 4000 feet, at which limit of altitude both hardy and half-hardy species co-exist. The one great exception to the rule is the plant known in cultivation here as *V. epacridea*, as to which it is very difficult to believe that a species which forms the highest vegetation on Mount Darwin, at an altitude of 6500 feet, should not be hardy at Edinburgh. Examples of the species collected at the high altitude named would be welcome. Unfortunately, the dwellers in this district must grant to Edinburgh great climatic advantages, and the generous list of species "hardy at Edinburgh" must be here largely curtailed; the critical altitude must be raised 1000 feet, and hardly any species which does not in its natural habitat reach the height of 5000 feet above sea level can be expected to live unprotected through a severe winter in this neighbourhood. There are left to us all the species of the sub-genus *Pseudo-Veronica*, the happily named "Whipcord Veronics" by the nurserymen of New Zealand (*V. cupressoides* is more tolerant of hardship than its low limit of 4000 ft. would lead us to expect); also the fleshy-leaved glaucous species (*V. glaucocœrulea* being doubtful and *V. pimeleoides* having failed), and one or two of the small-leaved coriaceous forms. Although a great authority informs us that he never found "a scientific botanist and sound practical florist under one hat," yet a broad botanical question lightly touched upon is not void of interest to a society of gardeners—the varied alpine forms of this much-involved and very perplexed genus being here referred to. In attempting to realise the adaptation of these forms to the conditions under which they live, although it is obvious that a greater altitude of habitat necessarily implies additional strength to withstand the augmented force of storm and tempest and to support greater severity of cold, it must not be forgotten, especially in connection with the third type mentioned later, that the direct rays of the sun, which we feel tempered by the abstraction of heat consequent on their passage through the moisture-laden strata of the lower atmosphere, burn with a more scorching intensity on the undefended mountain heights, and must form a potent factor in the account. In the ascent from the coast level four classes of modification are apparent. First, the species decrease in height, becoming for the most part more sturdy and robust in aspect; the leaves decrease in size and lose their petioles, the extreme form of this class having small, glabrous, and crimply coriaceous leaves. Secondly, one or two assume a prostrate habit and creep beneath the storm. A third type becomes thick in the stem, fleshy in the leaf, is almost succulent in appearance, and glaucous in colour. The fourth type is the "Whipcord Veronics," in which the leaves have practically disappeared, and except in the bloom, all resemblance to other forms of *Veronica* is lost, the plants having assumed the aspect of botanically distinct mountain forms, like wanderers in an unfriendly land successfully disguised in the habit of the denizens until betrayed by their flower. *Veronica tetragona* deceived even the skilled eye of so eminent a botanist as Sir W. J. Hooker, who, provisionally, and without having had an oppor-

tunity of inspecting the bloom, figured and described the plant as *Podocarpus Dieffenbachii*, *Icones Plant.*, vol. ii., n. s., plate 547. The same plant is figured in bloom on plate 580 of the same volume. It also bears a curious resemblance to *Andromeda tetragona*. In another fashion also, by a unique characteristic, do these "Whipcord Veronicas" reveal a flaw in their disguise. They are easily induced to adopt a heterophyllous form. Seedlings—at least, seedlings raised here under glass—cuttings, kept close whilst rooting, and plants gently forced in a warm greenhouse, act as though the more genial conditions stirred blind memories of the ampler foliage of long past days, and respond by putting out little true leaves. In *V. cupressoides* the leaves are ligulate or broadly obovate, generally dentate; in the variety *V. c. variabilis* they are of many forms, entire, notched, lobed or pinnatifid. In *V. lycopodioides* they are deeply toothed. In *V. Hectorsi*, which lives at the great altitude of 7500 feet above the sea, the change is most marked. The stout, sturdy branchlets become clothed with little, long, toothed leaves, and lose much of their thickness in the process, becoming slender and ascending. The uncompromisingly rigid appearance of the ordinary form vanishes, and the general aspect of the plant is entirely changed. In the summer this strange vagary often appears in *V. cupressoides* and its variety, *V. c. variabilis*, as they grow out in the open, not generally on the whole plant at once, but on one or two branches only at a time. It is also often more or less obscurely apparent at the growing tips of the branches of all members of the sub-genus. The ordinary form of the leaves of *V. loganioides* is intermediate between the strange short'y-ligulate keeled leaves of the so-called *V. epacridea* and the scale leaves of this sub-genus. In its heterophyllous condition, however, the leaves of *V. loganioides* are deeply serrate.

It is a matter of regret that the hybridist has hitherto confined his attention solely to the more showy flowers of the larger species of the sub-genus *Koromiko* to the exclusion of the no less interesting and more hardy forms. So far as experiment has been made, the shrubby *Veronicas* hybridise with facility, and if *Pseudo-Veronica* should prove fertile with *Koromiko* or *Eu-Veronica*, or the *V. pinguifolia* group with their larger relations, or with either of the other sub-genera, there would be a possibility of developing classes of hardy evergreen flowering shrubs which might enrich our gardens in an ascending series of beauty of flower, form, and foliage, and which might at the same time throw light on some of those questions which lie more distinctly in the region of scientific botany.

One economical property of the shrubby *Veronicas* is recorded, viz., the use of a decoction of the leaves of *V. elliptica* and *V. parviflora* as a curative agent for diarrhoea in man, and for scour in sheep and cattle. The knowledge of the remedy was acquired from the Maoris, and it is in New Zealand called "*Koromiko*." The same effect has also been attributed to *V. Colensoi* by chewing a few of the leaves.

CULTURE.

The culture of all the species is easy; they are in no way capricious or particular, and are not fastidious. Any well-worked garden soil will suit them. If they evince a preference, it is for a light, moderately rich and deep soil, and their behaviour shows that they appreciate, as an extra attention, a summer mulching of that invaluable garden material, manure from a stable where peat Moss is used as litter. They will

not, however, stand continued drought on a dry bank; whether in the open or in pots they accept drying up as notice to quit. They like a sunny situation sheltered from cutting winds, but most of the species will grow well in partial shade. They are almost exempt from garden pests. Propagation is easy. Seeds, when procurable, germinate abundantly. In favourable situations the ground about old bushes of several of the larger species (especially *V. Traversi*) becomes carpeted with seedlings. Cuttings of all the species, with one or two exceptions, root with facility, most of them growing away like Willows (*V. Hectorsi*, however, is difficult and obstinate, and *V. pinguifolia* liable to damp off). The cuttings should have cool treatment. Cuttings of *V. Hectorsi* might, very possibly, push out roots more freely if taken from a plant in the heterophyllous state.

The nearer the sea, the better does the shrubby *Veronica* thrive in the British Islands, and in many happy valleys on our south-western coast all distinction of half-hardy and tender is abolished. Even on the neighbouring coast of North Wales, especially at Colwyn Bay and in its vicinity, the winter rarely causes serious damage to any of the species. The winter of 1890-91 was, however, an exception, and cut to the root or killed outright many of those which are tender at Edinburgh. *V. elliptica* suffered much and was nearly cleared from the district. The Isle of Man, with its wondrously mild winter climate, is a kind foster-mother to this and many other genera of New Zealand plants. No degrees of hardiness have there to be noted. The records show that only at intervals of twenty-five or thirty years have dangerously low temperatures been observed. Until last year—the economical necessity which ran a road over their late site is much to be deplored—there stood in a garden near Douglas a pair of shrubs—*V. elliptica* and *V. Andersoni*—originally planted some 3 feet apart, and forming a solid mass of foliage 6 feet high and as much in diameter. Near the same place there were in bloom on Christmas Day last, not in summer or autumn luxuriance, but still fair to see and good to cut for a posy, *V. elliptica*, *V. anomala*, *V. diosmæfolia*, *V. salicifolia*, *V. ligustrifolia*, *V. Henryi* and several other hybrid forms. Since the date last named the Isle of Man has experienced the most severe winter weather that has been recorded for a period, it is said, of over a dozen years; yet the tale of damage to shrubby *Veronicas* is almost nil. On close examination on the 28th of January last, out of seven specimens of *V. diosmæfolia* (by repute the most tender) two plants only had their tallest shoots singed; nevertheless, some flowers on these same plants were open and many corymbs coming into bloom. A few shrubs of *V. speciosa* had here and there a shoot drooping, but there was much bloom and an abundant promise. *V. elliptica* was crowded with heads about to expand. *V. anomala* had a few open blooms. No serious damage had been sustained by any species or hybrid form. The New Zealand genera *Olearia*, *Phormium* and *Pittosporum* are equally at home; in fact, a great number of our ordinary cool greenhouse subjects will thrive in the open in the Isle of Man. *Cordylina australis* grows to tree form. It is astonishing that so little advantage is taken of a climate so exceptionally mild in the winter season.

It would be difficult to select a genus containing so many useful forms as the New Zealand *Veronicas*. In shape and size of leaf, in habit of growth, in general aspect, they present an almost infinite variety. They are, for the

most part, very floriferous through an extended period. *V. elliptica* especially nearly equals the common Gorse or Whin in continuity of bloom. It should also be pointed out that the scale of hardiness before given is reduced to its lowest terms, i.e., only such species as are hardy in the most severe of our winters are included in the hardy list. There are many others which will stand through an ordinary season and only succumb to exceptional severity. A bush of *V. Traversi*, for example, flourished eight miles from Manchester for the five years previous to the winter of 1890-91, when it perished. Self-sown seedlings of the same shrub, though scorched by the present winter, are not, however, killed. The rage for the red *Geranium*, yellow *Calceolaria* and blue *Lobelia* has well nigh died out, and the tyrant "bedding out" is no longer the despot of our gardens; still, we know that much time and labour are expended on the propagation and winter protection of half-hardy stuff. In this respect, is it too much to hope that gardeners might direct a little of their attention to the subjects of this paper, if only to those of them that require no more than the protection of a cold frame in the worst of our winters? Easy of propagation, rapid in growth, they produce effects, to many eyes, more beautiful, if less gaudy, than those of the system which is passing away. They transplant with facility, and if our winters for a period of several years are less rigorous than our late thrice-repeated experience, so as to permit specimens to grow beyond the size fitted for removal, a few rooted cuttings in a cold frame are all that is required to fill the blanks caused by the very rigorous winters with which we have at times to contend.

The concluding remarks of Mr. Lindsay, in an address to the Botanical Society of Edinburgh in the year 1891, may appropriately close this paper. Speaking of the New Zealand shrubby *Veronicas*, he says:—

They are very effective when planted in groups on lawns or singly in borders along with other shrubs. Many of them are peculiarly well adapted for the rock garden, their unique appearance, compact habit of growth, combined with their extreme hardiness, all tending to make them invaluable for that style of gardening. They may also be used advantageously for winter-bedding plants or for edgings to beds in summer. For window-boxes in towns the dwarf kinds are extremely useful, as they resist the injurious effects of smoke better than most plants, and, possessing, as they do, many advantages for decorative purposes, they ought to become more widely known than they are at the present time.

The paper was illustrated by specimens on the table of forty species, varieties, and heterophyllous forms; also by cut blooms from the Isle of Man of species and hybrids cited as being in blossom in the island.

***Spiræa splendens* and *S. betulifolia*.**—There is in this country a good deal of confusion regarding the beautiful low-growing *Spiræa* known in gardens as *S. splendens*, for its nomenclature is, to say the least, in a very confused state. The *Spiræa* in question forms a dense-growing bush about a yard high, whose slender upright stems are terminated by dense flattened clusters of rich reddish pink-coloured blossoms, usually at their best just after midsummer, but this year, in common with most other subjects, they are a good deal earlier than usual. In the "Dictionary of Gardening" it is regarded as a variety of *S. japonica* or *callosa*, as it is often called, and at Kew it is considered synonymous with *S. betulifolia*, a native of North-eastern Asia and North America. In this just mentioned publication the flowers of *S. betulifolia* are described as "creamy white, corymbs large, flat, several times compound." Now an

inspection of the living specimens at Kew leaves one completely puzzled, as there is a flowering bush named *S. betulifolia* to which the just quoted description of that species will exactly apply; but close by, and also bearing the specific name of *betulifolia*, with the addition of *splendens* bracketed as a synonym, is a specimen of the garden *S. splendens*. The conflict of authorities on this matter does not here cease, as the late Mr. George Gordon, whose knowledge of such plants was very extensive, regarded *S. betulifolia* as synonymous with *S. cratægifolia*, the colour of the flowers and general particulars conforming to our *S. splendens*. Loudon again considers *S. betulifolia* and *S. cratægifolia* as both varieties of *S. chamædrifolia*, and describes their flowers as white. In the Kew *S. betulifolia* the corymbs are often compound, and are altogether more open in character than those of *S. splendens*. As a garden shrub this last is very desirable, and worthy of a place among the most select of the shrubby *Spiræas*.—T.

Cerasus semperflorens.—This is a very distinct and ornamental variety of the Cherry, whose slender branches all have a drooping tendency, so that it forms a specimen of a very graceful habit. The fact that the foliage is of a deep green tint forms another distinguishing feature. Its most prominent characteristic, however, and that from whence the name of *sempervirens* is derived, is its perpetual habit of flowering, as it commences to bloom at the same time as the other Cherries, and afterwards keeps up a scattered succession of flowers throughout the greater part of the season. Though decidedly uncommon, it is at the same time a very old plant in gardens. The Cherry is not alone in having a variety remarkable for continuous blooming, as there is a form of the common False Acacia (*Robinia pseudacacia*) that possesses the same characteristics. This commences to bloom about midsummer and continues often till the autumn. At no time is there a great wealth of bloom, yet still there is sufficient to yield a goodly display that is very conspicuous against the dark green foliage. A perpetual flowering variety of the common Hawthorn still possessing the same varietal name of *sempervirens* is in cultivation, though not much grown. This originated in France and was first observed about a dozen years ago, but was not sent out for some little time, so that specimens of it are, of course, but small, added to which it is naturally of a dwarf, freely-branched habit of growth. As an instance of the lengthened period over which its flowering season extends, it may be mentioned that not only ripe and green fruit, but also flowers are sometimes to be seen on the plant at the same time.—T.

Deutzia gracilis.—This is so generally cultivated for flowering in pots, that its merits as a desirable low-growing shrub for the open ground are apt to be overlooked. Still, given fair treatment it is very attractive just now in some places, while in others it is past its best. A small bed of this *Deutzia* where situated that the wood is fully ripened will yield satisfactory results, but in the foreground of shrubberies where it has to compete with other and stronger growing subjects, it as a rule flowers but little. When there is a clump or bed of such shrubs as this *Deutzia*, a little pruning will be often of service, for, like many other thick-growing shrubs, there will be some old and exhausted wood towards the centre of the plant, which if cut out will tend to strengthen the more vigorous portions that yield the principal display of bloom. Where the soil is poor, a top-dressing of decayed leaves and manure, or something in that way, will also be of service.—H. P.

Zenobia speciosa.—This, or more particularly the variety *pulverulenta*, has been many times noted in THE GARDEN, but just now it is so beautiful while many shrubs are past their best, that another word or two in its favour may be excused. It forms a rounded shrub that reaches a height of 3 feet to 4 feet, and is now profusely laden with spikes of comparatively large pure white, Lily of the Valley-like blossoms. It thrives best in soil of a peaty nature, where it is moderately moist during the summer. The variety *pulverulenta*

was the subject of a coloured plate in THE GARDEN, December 29, 1883, in which not only the beautiful white bells, but also the silvery hoariness of the foliage were faithfully portrayed. I have seen it employed for flowering under glass, and, as with many other ericaceous plants, it readily lends itself to this mode of treatment. An additional merit is that the flowers retain their freshness some time.—H. P.

"Poison Oaks."—Will you kindly tell me whether the Poison Oak of California is the same as the Poison Oak, or Poison Ivy, of the east—*Rhus toxicodendron*? The poison of the former appears to be much more virulent than that of the latter in a case I have known.—E. A. J.

* * The Poison Oak of California is known to botanists as *Rhus diversiloba*. It is a shrub with slender stems 3 feet to 5 feet high, and resembles the eastern *Rhus toxicodendron*, or Poison Ivy, from which it differs in its more acute leaflets, slightly toothed or entire, and in its nearly sessile panicles of flowers; usually more dense in fruit



Veronica monticola. Engraved for THE GARDEN from a photograph sent by Mr. R. Okell, Manchester. (See p. 519.)

than those of the eastern plant. In California the Poison Oak, which grows also as far north as British Columbia, is exceedingly abundant in all the foot-hill regions, where it often forms thickets of great extent. It is, perhaps, even more virulent to some people, at least, than the eastern plant.—*Garden and Forest*.

Wistaria for bowers and covered ways.—There is more than one good way in which this, the loveliest of hardy climbers, is not generally used. Seeing a standard plant the other day in very good flower, we asked why bowers and the most beautiful lacework of summer-houses are not formed with this climber alone. For example, a strong framework made in a large tent or wigwam shape might easily be covered with it. The timbers or irons of the roof might be close enough for the foliage of the *Wistaria* to cast a slight shade over the interior, and the motive for such a thing would be the grace and beauty of the shrub when in flower, garlanding it, as it were, in the form of an apartment. Whenever there is any real necessity for the pergola, a lovely one could be made of this plant alone. On the house the *Wistaria* is popular and charmingly used, especially in houses of the

last century, which often have magnificent plants sometimes growing all round them. We have lately planted a number of vigorous layers against Scotch Firs, in the hope they will garland the trees some day, though we have never seen *Wistaria* look so happy as when fully exposed to the sun in our country. This is probably necessary to ripen the wood; and therefore to put it over covered ways or some elegant outdoor framework is, perhaps, the best plan.—*Field*.

Hardy Rhododendrons.—The extensive list of hardy Rhododendrons given by your correspondent, Mr. Reeves, of Darley Dale, in your issue of the 3rd inst. would seem, from its number and comprehensive character, hardly to admit of many necessary additions. No doubt the varieties enumerated include many of the finest sorts, and are capable of affording wide range of colour. But from the points of view of fineness of the individual trusses and ornamental character of the foliage, I would venture to suggest say a dozen very distinct varieties that would form useful and satisfactory additions even to this extensive list. Frederick Waterer, James Mackintosh, H. W. Sargent, James Marshall Brooks, Baroness Lionel de Rothschild, Sigismund Rucker, Lady Clermont, Marchioness of Lansdowne, Marie Stuart, Kate Waterer, Mrs. F. Hankey, and Sir Thomas Sebright. All of these are with me perfectly hardy and have superb trusses in their respective colours. Some of the grandest varieties in point of colour suffer from the comparative insignificance of the foliage—for example, that otherwise superb Rhododendron Michael Waterer. For a blaze of colour, what, when it is in bloom, can be more effective than this old favourite? But for the eleven months of the year when it is not in bloom there is no effectiveness in the foliage, as there is in some of the sorts I have enumerated. Probably it was an accidental oversight in Mr. Reeves' list that he classified *Stella* and *Lady Armstrong* among the scarlet varieties.—GEORGE BENINGTON, *Bush Hill Park, Enfield*.

Rhododendron fragrans is very beautiful in the Royal Gardens, Kew. The large masses opposite the Palm house are a sheet of bloom, so thickly produced, that little leafage is to be seen. It forms a dense, spreading growth and the individual trusses are neat, the flowers white, with a margin of rose-violet—a tender and distinct colour. There is a large bush of it also in full bloom near the temperate house, and hard by in beauty are *R. Wilsoni*, *R. myrtifolium*, *R. hirsutum*, and *R. roseum odoratum*. The last of this list is a charming kind, the plant at present small, with few leaves, yet it bears five clusters, each bearing about fifteen flowers, which individually are about 1½ inches across, the colour brilliant rose and the buds of a deeper shade. As suggested by the name, they are very sweetly scented. This colony of Rhododendrons is one of the most interesting features in the Royal Gardens.

The hardy **Azaleas** have been very beautiful this season, one mass of bloom, and the colours so soft as well as brilliant that they blend with each other without any sort of arrangement. I should be glad to know whether it is necessary to pick off the withered heads, as in the case of Rhododendrons. They do not come off nearly so easily as those of Rhododendrons, and if the bushes are large, the task must be a wearisome one. They do not appear to interfere with the young growth, as Rhododendron heads do.—M. E. C.

Notospartium Carmichaeliæ.—We have a great number of shrubby Leguminosæ that are hardy in this country, but this possesses at least the merit of being quite distinct. It is the pink Broom of New Zealand, and forms a bush whose green leafless branches are disposed in a very graceful manner, so that at all seasons it forms a very pleasing object, while just now an additional feature is furnished by the tiny pink Pea-shaped

blossoms. They are crowded together in dense racemes towards the points of the shoots. It is a very uncommon shrub, and the fact that it is a native of New Zealand no doubt prevents many from planting it, though it is perfectly hardy in many districts of this country. Another feature is that it does not flower till the blossoms of most of its associates have passed away.—T.

Buddleia globosa.—Occasionally I have met with this variety succeeding admirably in the open air, the best plant, however, being in North Wales. This was grown in an alcove fully open to the sun, but backed up with stone, conditions which would well ripen the wood and prevent its being killed in winter. In the pleasure grounds at Abberley Hall, at a high elevation, but rather sheltered, *Buddleia globosa* grows fairly well, and every season we are rewarded with some of its flowers. This season being earlier, it is now past its best.—A. YOUNG.

MAGNOLIAS.

THIS spring has been very favourable for Magnolias; we have had no frost to interfere with their

This spring pruning after the flowers have fallen applies, of course, to the early spring-flowering kinds. For the later blooming sorts you have to follow a different course; they generally are big trees and form themselves. Still, if you wish to keep them within bounds, the only thing is to cut or prune them and sacrifice flowers for one year; they will also look better. *Magnolia parviflora* is one of the summer or late-blooming kinds, but I prune it in spring and find that wood-buds break out from the stems below the cuts, and all of these shoots bloom the first summer. As this kind gets very thick, I find it necessary to thin out the young shoots as well as cut off the tips of the strong ones. *M. glauca* var. *Thompsoniana* should also be treated like *parviflora*, for it grows very straggling unless kept in good form by pruning.

The following are early-blooming sorts: *Magnolia stellata*, *conspicua*, *Lenne*, *Soulangeana*, *Alexandrae*, *Norbertiana*, *speciosa*, *purpurea*, *gracilis*, *Kobus*, *superba* and *atro-purpurea*. The later or summer-blooming sorts include *Magnolia hypoleuca*, *parviflora*, *Watsoni*, *Umbrella*, *macrophylla*, *glauca*, *glauca* var. *Thompsoniana*, *acuminata*, *cordata* and *auriculata*.—J. R. TRUMPY, *Kissena Nurseries, Flushing, N.Y.*, in *Gardening*, June 1.



Veronica Armstrongii. Engraved for THE GARDEN from a photograph sent by Mr. R. Okell, Manchester. (See p. 520.)

beauty. In some seasons it does happen that the blossoms of *M. stellata* and *M. conspicua* get injured by late frosts, but that has not been the case this year. In the spring of 1877 I set out a small plant of *M. stellata* (also known as *Halleana*); it is now 12 feet high, and such a sight when it is in bloom and so fragrant! This species really is fragrant, while other kinds, such as *conspicua*, *Soulangeana*, *Alexandrae*, *Norbertiana*, have only a peculiar smell, more disagreeable than pleasant to many persons.

One thing I should like to remark is that now is the proper time to prune these early-blooming Magnolias. Almost everywhere one sees them neglected, high skyward, sprawling on the ground, or deformed, still beautiful when in bloom, although unsightly the rest of the year. Now there is scarcely any other class of trees that can be so easily brought back to good form. I have cut old, ugly specimens with stems as thick as my leg, and in two years they had become beautiful trees. Cut or saw them down to the height you wish, they will break out very readily the first summer. The next spring shorten the tips of the largest branches to get symmetry, also thin out between them where there are many small sprouts. Continue to do this, more or less as is necessary, every season for a few years, and you will have handsome, symmetrical trees, and fine flowers and luxuriant foliage.

ORCHARD AND FRUIT GARDEN.

BLACK APHIS ON FRUIT TREES.

THERE are several species of aphides, but it is doubtful if any of them are so harmful and difficult to eradicate as the small black forms that infest Peach and other allied fruit trees, Melons, Cucumbers and a few other plants. It has been my misfortune to be in charge of places to all appearances peculiarly liable to be overrun by insect pests generally, and aphides of the black order in particular, and consequently I was more than ordinarily interested in the report of "The Black Peach Aphis," furnished by Mark Vernon Slingerland and published in one of the bulletins issued by the Cornell University, New York. In America the open-air Peach crops are of such vast importance, that anything which tends to militate against the growth of the trees receives the serious attention of experts supported by the Government, principally to experiment and look after the interests of fruit growers and farmers in the various States.

From this report I gather that the black Peach aphis is most troublesome throughout the States of New Jersey, Delaware, Maryland and Virginia, and is nearly as much dreaded as the mysterious disease designated Peach yellows. It is quite young trees that suffer most from the attacks of these insects, and some idea of what it is capable of doing may be formed from the fact of black fly having in 1890 killed as many as 100,000 trees in a single nursery, reports from other nurseries being equally serious. In common with another member of the genus *Aphidæ*—the dreaded Grape *Phylloxera*—the black form does not confine its attacks to the top-growth of the trees, but does even more harm underground often before there are any plain indications of its presence. The roots become thickly covered by the insects, and, to quote from the report, the effect of so many little pumps working almost continuously, drawing sap from the roots, or it may be both these and branches, is to completely paralyse the trees. This species is said to breed all the year round, and very rapidly too, each female being capable of adding five perfect insects daily, and which, in their turn, soon commence further multiplying the stock. Some are winged and some not, the wingless forms being found principally on the roots; while those with wings, in addition to stunting the top-growth, are the means of spreading and establishing new colonies in all directions. No great difficulty has been found in clearing the branches of the trees of these pests, a fairly strong emulsion formed by boiling one half pound of soft soap, so as to thoroughly dissolve it in a gallon of water, adding to this while yet hot 2 gallons of kerosene, keeping it agitated by means of a force pump or syringe till it is well mixed. One gallon of this emulsion should be diluted with 10 gallons of water when required for use, a knapsack sprayer or small force pump being used for distributing it over the trees. The root form has apparently defied all efforts to reach and destroy it, but this to me is somewhat surprising, as what destroys the winged forms is with me equally efficacious against those without wings. This kerosene emulsion is by no means an expensive preparation, and if only enough of it be used in a thoroughly hot state to reach the insects below ground it must destroy them.

When it fell to my lot to take charge of a rather large Peach house in which black aphis was so plentiful as to quite cripple the majority of the trees, I consulted Mr. D. Thomson, Drumlanrig, as to what was the best remedy for the pest. His advice was to the effect that the petroleum, or paraffin as it was then erroneously termed, and soft soap mixture would most probably clean the trees and reach what insects were hibernating below ground. I need hardly state that I lost no time in acting upon this advice, and the results were most satisfactory. In a 3-gallon can filled with water heated to 120° was first dissolved a lump of soft soap about the size of a hen's egg, and then a 6-oz. bottle of petroleum was added, this being kept mixed with the water by means of a syringe kept drawn out and discharging its contents forcibly back into the can, while a second syringe was used for spraying the trees with the mixture. One syringe would have sufficed, only in this case every second drawing must have been discharged back into the can, the process being much slower accordingly. Enough was used to run down the stems of the trees and to reach the roots near the stems well below the surface, and this undoubtedly destroyed many insects. I have repeatedly proved that petroleum emulsion is far from

being so destructive to insect life as it has the credit of being when used in a cold or semi-cold state. In a thoroughly hot condition the water, as before hinted, being heated to about 120°, it is effective enough and not, as far as I can see, in the least injurious to either the bark of the branches or roots.

A slight attack of this black fly is by no means to be lightly disregarded, as if left undisturbed, it will not be long before every point of the young shoots will be in a wretched plight. The insects, being largely protected by the curled-up leaves, are not greatly disturbed by tobacco fumigations, while syringing with insecticides strong enough to destroy the fly is risky, especially if there are any fruits on the trees, the skins of these being easily damaged beyond recovery. Tobacco powder puffed well into the infested points and syringed off the next morning is the best remedy I have ever tried, and if the applications of this are timely, a complete check to the spread of the insect will be the result.

When the black fly once gets established on Melons, it is very difficult indeed to contend with. If steps are not immediately taken to destroy those first seen, the whole of the plants are quickly over-run, the leaves being smothered by the black-coloured excrement and rendered of little further service accordingly. Fumigation with tobacco paper will bring most or all of the insects down, but not a few of those to be seen on the soil are comparatively uninjured, having cunningly dropped off the plants on the first intimation of danger. During the next day or two they return to their old quarters, and in a few hours families of them are to be seen in all directions. Nor do frequent fumigations fully meet the case, and such are also injurious to the plants. If followed up by a thorough moistening of the soil, bed, staging, or floors, as the case may be, with strong tobacco water, the majority of the fallen fly will be destroyed. Some houses or gardens are, as before stated, peculiarly liable to be troubled with black-fly, and ours are among the number. For about three seasons we escaped a visitation, but this season they are once more trying to spoil our Melon plants. Tobacco powder disperses the small colonies, but does not kill enough of the insects, and the most effective remedy I have yet tried is a decoction of soft soap and tobacco. About 2 oz. of soft soap are dissolved in a gallon of hot water, and in this is steeped one half-pound of ordinary tobacco paper, the drainings from this being diluted with about 3 gallons of water. Every leaf that can be got at is thoroughly wetted with this mixture both on the upper and lower sides, and not many insects escape. A few are almost certain to do so, and these must be either crushed directly they are seen or treated to some more tobacco water. If the quantities given are not strong enough, and tobacco paper varies considerably in strength, make it stronger next time and persevere with the remedies, or otherwise the crop of Melons will not be worth much. The petroleum remedy is only recommended for trees when at rest, as it is not safe to use it on green leaves and in hot weather.

W. IGGULDEN.

The best Damson.—Worcestershire may fairly lay claim to being well to the fore in Damson culture, both in the quantity of full-bearing trees and also younger trees coming on, as during the last decade many thousands have been planted. Here they are grown in quantity on almost every farm and also in cottage gardens. Damsons are looked upon as almost the best fruit to grow as a paying crop, there not being the least difficulty in dispos-

ing of them either in large or small quantities. I have known the fruits from a single Damson tree fetch 30s., and in some cases even more. Mr. Iggulden (p. 486) does not say which he considers the best variety, but has a good word for Farleigh Prolific. This is, I suppose, a variety thought much of in Kent, very remunerative prices having been obtained by the grower who was instrumental in bringing it prominently before the public. But whatever its merits are in Kent, I do not consider it equal to our Shropshire or Herefordshire Prune. It may do in some districts, but I also know that it has caused considerable disappointment in others. I have a dozen trees of it, these having been planted about eight years, and the crop up till now has been very scanty. It is no uncommon occurrence for a tree of Shropshire Prune to produce upwards of four or five pots, a pot being 90 lbs. —A. YOUNG, *Abberley Hall, Stourport.*

Layering Vicomtesse Hericart de Thury Strawberry.—Procuring strong layers early, and getting them established in their fruiting pots, is generally considered suitable for the majority of Strawberries adapted for forcing, as only by this means can strong crowns and satisfactory results when forced be secured. In the case of Vicomtesse Hericart de Thury, I am certain this is not the best system to pursue. Very likely, on account of the season being earlier, there will be an increased impetus on the part of some cultivators to layer even earlier than usual, and if so, I think that the variety in question will suffer. The fault of this variety is its being so prone to crown-splitting, and when this is the case the plants never do well, as the flower-stems are many and these so short, that they will barely grow above 2 inches or 3 inches in height, especially in the case of the earlier forced batches. To obviate this, layering must take place later. The latter part of July or about the middle of the month will be quite early enough, and give them ample time to make good plants, with at the most two or three crowns. The flower-scapes from these will be strong even if forced early, and if those people who may have thought little of this Strawberry on account of its proneness to short stems will adopt the practice I have detailed, I do not think they will be disappointed. —A. YOUNG.

Strawberry Sharpless.—This, staged on the 6th inst. at the meeting of the Royal Horticultural Society, formed one of four very nice dishes sent from the Royal Gardens, Frogmore. It is large, early and fairly productive, but here its good qualities end, as it is of poor flavour, though a taking Strawberry at first sight. It is an American variety and stated to be the best of all the kinds grown in that country. In my opinion our worst kinds are superior to Sharpless. Of course, soil may account for much, but in the case of those shown the flavour was certainly very poor. The other varieties were splendid as regards size, colour and flavour. Sharpless was recommended on account of its vigorous growth, but even that point does not tell in its favour if the fruits are flavourless. —G. W. S.

Late Strawberries on north borders.—The old-fashioned system of planting late varieties under a north wall will this season show its value, as the early varieties in the open will be cleared before the date they are in in other seasons. The Strawberry season will be a short one, and in poor, thin or gravelly soils the crop will, I fear, be light, no matter what attention has been paid to it in the way of watering or mulching. On late borders there is more success, as the rains of late, though not in quantity, have been sufficient to set the bloom and assist in swelling up the fruit. The Pine varieties, notably the Elton, are always reliable for late fruiting. Waterloo on some soils does not thrive as well as could be wished, coming patchy. In the case of this variety, different culture is required, as I find there is the greatest success with two and three-year-old plants. Some object to Waterloo on account of its colour, but it is a nice addition to the dessert if the fruits are large and well coloured. Eleanor or Oxonian is valuable on account of its lateness.

This is not the best flavoured Strawberry; indeed, it may be termed second-rate, but it succeeds often where other varieties fail. It never fails on a north border, but, being a strong grower, should get ample space between the rows and not be allowed to remain too long in the same place, as young plants produce very large fruits. Jubilee is also worth a place for late fruiting. This is one of Mr. Laxton's raising. We have also another valuable late fruit in Latest of All, a seedling from the well-known British Queen. It is of fine flavour, larger than the parent, later, but not so vigorous in growth as Jubilee. —G. WYTHES.

Autumn Strawberries.—Because of the remarkable precocity shown by Strawberries this season, and, still further, the shortness of crop which now seems inevitable, it will be worth asking whether such phenomena are not likely to lead to the production largely of bloom and fruit in the autumn. Probably much will depend upon the nature of the weather that will presently come, but if there should be a material change to moisture and the hot soil become heavily charged with it, renewed growth will be inevitable, leading to the production of premature crowns and flowers. In such case it will be no matter for surprise, should a late autumn succeed, if we have good crops of Strawberries then. —A. D.

SUMMER TREATMENT OF RASPBERRIES.

VERY often the treatment this fruit receives at this season is the cause of failure or success the next. If due attention be not paid to the selection of suckers or canes for next season and the maturing of the same, there is little chance of success, and the plants are robbed of a great deal of their vigour for the ensuing season. Raspberries are often allowed to occupy the same ground far too long, this making them weak, the result being small fruits and a forest of suckers. If more attention were paid to new plantations, there would be fewer failures and finer fruits. I have seen the canes occupy the same position for many years and give fair crops, but how much better could have been obtained had more attention been paid to them. On light gravelly soils it is more necessary to renew the plantation frequently than on good loamy soil. Feeding from the surface is also more necessary, but even this is not sufficient to keep the roots in a vigorous condition, deep cultivation, change of soil, also position, being important details. In such a season as we are now experiencing this fruit will be more welcome, owing to the Strawberry crop being so soon over. I am aware there is considerable difficulty in packing or sending Raspberries any distance, but if a large, firm fruit is grown and gathered before too ripe, there will be no difficulty. Superlative is excellent for this purpose, being a large, handsome firm fruit and of fine flavour. I think Hornet, Fastoff and Superlative the best kinds where a succession is required. Hornet is an early kind, and the last-named is latest, but a wonderful cropper.

Raspberries are shallow rooters, consequently when allowed to carry a great quantity of wood are soon exhausted, this telling on the next season's crop, as the canes come weak and do not form strong buds. Therefore no suckers should be left at the base except those required for next season's fruit. At times it will be necessary to leave more if planting canes are required, but even then too many should not be left. Ample space is also necessary. I would also advise having different positions, as then there is a longer succession of fruit, and by planting early and late varieties the fruits are in season a long time. When the plants get some distance from their original position, no delay should take place in giving them new ground. I would also advise early planting and at times a change of plants, as often those secured from a distance are more robust and soon come into bearing. In light or poor soils there is a great gain in early planting, as the plants take readily to the new soil, and the break in the spring is much earlier and

stronger, and the canes may be cut down much closer in the next spring than is often practised. Mulching in such seasons as this is also most important. I use cow manure and mulch heavily both in spring and autumn. The early mulch retains the moisture and assists in swelling up the fruits, the latter in producing strong growths for next season.

G. WYTHES.

ROSE GARDEN.

THE POLYANTHA ROSE.

THE fine new variety which Mr. Charles Turner, the Royal Nursery, Slough, will send out next autumn under the name of *Crimson Rambler* is a true climber, and in this respect will no doubt prove highly valuable, apart from its brilliant crimson colour and wonderful profusion of bloom. This new Rose was a conspicuous feature at the flower show on the opening day at Earl's Court, and in addition to flowering plants there was also a specimen showing its long-climbing habit. In this respect it shares this peculiarity with two others, viz., *Jeanne Ferron* and *Max Singer*. *Crimson Rambler* is an introduction from Japan, and it imparts to the group of Polyantha Roses a striking hue of colour hitherto unknown in this class. Most of the others are miniature Roses of dwarf habit, and are therefore well adapted for culture in pots. They are also useful for edgings and also as standards. A few of the leading varieties are *Anne Marie Montravel*, white, very double and sweet, the flowers produced in clusters; *Clothilde Soupert*, rather large, but of exquisite shape, pure white, with a distinct pink centre, very double; *Gloire de Polyantha*, deep rose with a white base, perfectly formed and very pleasing; *Mignonette*, rosy pink, very free and attractive; *Paquerette*, pure white, flowering in large bunches; and *Perle d'Or*, nankeen-yellow, with orange centre, quite distinct. It would appear that seedlings from the original type, which was introduced by Mr. Robert Fortune about 1864, lack the true Polyantha character, but hybrids appear to maintain it to a considerable extent.

It is as a stock that *Rosa Polyantha*—the type itself, not varieties raised from it—is proving so useful. In a recent issue of the "Rosarian's Year Book" Mr. T. W. Girdlestone contributed a very interesting paper on *Rosa Polyantha* as a stock, and it is about ten years since that he first made the experiment of employing it as a stock. The failings of the *Manetti* being admitted, Mr. Girdlestone was desirous of finding a stock as easy to bud and propagate as the *Manetti*, and on which the Tea-scented Roses and smooth-wooded Hybrid Perpetuals of the *Victor Verdier* race, that notoriously will not thrive on the *Manetti*, would succeed.

The advantages of *Rosa Polyantha* as a stock lie in the certainty and rapidity with which the cuttings strike root, and that they are just as easy to bud as any others. It was at one time feared *Rosa Polyantha* would throw up a number of suckers, but Mr. Girdlestone states the sucker is the exception, and not the rule, and if one does make its appearance there is no possibility of its being mistaken for part of the scion, so that its prompt removal is assured. Further, the Polyantha stocks appear to succeed equally well on either light or heavy soils. Cuttings 9 inches long are made in the autumn from well-ripened shoots of the season's growth, and it is to be observed that it is not in the least necessary that these cuttings should have a "heel," as is so desirable in the case of Brier cuttings. The best time for the insertion of cuttings is the end of September, but any time from then until Christmas will serve. The best way to plant them is to strike the spade deep into the soil, and then by moving it a little way backwards and forwards form a kind of chasm. This should be filled with white sand and the cuttings pushed firmly into it, leaving only 2 inches or so of their length visible

above the surface of the soil. By treading the soil on either side the whole is made firm, the cuttings quickly root, and a year after being inserted they need to be transplanted, trimmed, and not permanently planted at this time, but "laid in by the heels," as the nurserymen say, until March, and then planted out for budding, advantage being taken of showery weather to do so. The value of laying in by the heels is seen in the case of all dwarf stocks, as they can be planted quite shallow, so as to admit of the bud being inserted quite close to the roots.

Mr. Girdlestone adds: "If stocks are wanted in a hurry, cuttings of *Polyantha* inserted in good time in September will be found to be well rooted by the end of the year, and may be planted in the budding quarters the following March and budded in July—within ten or eleven months of their insertion as cuttings." But this "rushing of stocks," as Mr. Girdlestone terms it, is not to be recommended, as they are liable to be rather thin-barked, and consequently to require special care in budding, although at the same time it has been observed that buds of Tea-scented Roses cut from small wood sometimes take better on thin-skinned stocks.

R. D.

Rose Aimee Vibert.—This is one of the best Roses for withstanding the drought. It is of vigorous habit, produces its flowers in clusters, and lasts a long time in perfection. Although, like all other Roses, liberal feeding with liquid manure is of great assistance, our plant of it has not had a single drop of water of any sort since the period of drought set in, and, in spite of this, it is producing a good crop of flowers at the present time.—S.

Moisture for Roses.—Despite the drought, I never saw our standard Roses looking better, and when we take into consideration the poor gravelly soil, it is wonderful what a healthy state they are in. Bush Roses also look well, but not so promising as the standards. This robust condition, I consider, is on account of the roots having been supplied with moisture once a week. The standards are in lines on the turf. Round each plant is left a space 18 inches in diameter and from 3 inches to 5 inches deep. This cavity early in the year is filled with cow manure, and the rains wash down the goodness to the roots. If the spring is a dry one, we apply liquid manure from the cow-yard once a week, and never fail to get good results in soil not at all suitable to Rose culture. By using cow manure freely on poor thin soils, there is less trouble with green-fly and red spider, especially on turf, as the roots are cool and the manure keeps the trees in a vigorous state. I am aware in some winters standard Roses suffer very much, and I do not infer they are suitable for every garden, but feel sure that the cultivator will be amply repaid by leaving space round the standards so as to feed in dry weather. On a light soil I have tried various stimulants, but none succeeds like cow manure. This may be given liberally, and will soon increase the size of leaf and bloom. I do not advise cow manure quite fresh, as it soon clogs the soil. It should be somewhat decayed. If given fresh, it should be liberally watered in, but even then it does not look so clean as when partially decayed, and often causes a rank growth when the Grass comes into contact with it.—S. H.

The best single Rose.—We have a great many single Roses from all parts of the world, but the finest of them all is a kind but little known. It came to us under the name of *moschata nivea*, and, knowing nothing about it, it was planted in some very bad clay soil. There were several plants, and they were put along a fence. For the past three seasons, however, they have grown and bloomed in a vigorous and delightful way, and now again in full flower this Rose makes the prettiest picture in the garden and fills the air with its lavish fragrance. In Mr. Paul's "Rose Garden" the original Musk Rose is said to have been introduced in 1596, and it is so named from a musk-like odour it is supposed to give off in

certain conditions of the atmosphere. Under this type Mr. Paul classifies a few varieties, and among them one named *nivea*, which appears from the description identical with that we have. Pruned or unpruned, the plant is a marvel of profuse bloom, the only difference being in the size of the cluster, which upon strong shoots resulting from pruning is often immense. The flowers, however, are always in clusters, showing buds and flowers in varied stages and tints. The bud is pink, and the flower when first open similarly shaded with that tint, but passes to clear white, and the tuft of orange stamens is specially rich, clustering in the centre of the open wide-spreading flower. If a variety, it is practically a wild Rose, needing no care or cultivation, and it should be widely known.—A. H.

A more free-flowering Rose than Gloire de Dijon.—I am well aware it has always been the custom of "D. T. F." to speak of *Gloire de Dijon* as a Rose that is head and shoulders above its fellows, but there is not the slightest need to modify what I wrote on page 435. If we accept what "D. T. F." says, *Gloire de Dijon* is the standard type of blooming, and anything more free is "not an improvement, but the reverse." I consider *Bouquet d'Or* makes a better bush in the open, a better plant on walls or fences than *Gloire de Dijon*, and where this latter kind gives but one flower, *Bouquet d'Or* has a cluster usually of three, but varies above and below. Both are grand Roses with high and distinctive merits, but I regard *Bouquet d'Or* as the better of the two.—A. H.

Rose Gustave Regis.—Some fine clusters of this kind were shown by Mr. Prince at the Drill Hall, June 6, and from them one could form a fair idea of the value of the kind. It is very free-blooming and of a vigorous climbing habit. The flowers are borne in large trusses, but are not very full. The buds, however, are charming in form and colour, which is a pale yellow, and though borne in clusters, they have long stalks and can be cut individually without much sacrifice. It is a hybrid Tea.—A. H.

LORD PENZANCE'S HYBRID SWEET BRIERS AND OTHER HYBRIDS.

THESE were shown in capital condition at the Temple show and more recently also. They are evidently very precocious in flowering, whilst in their great diversity of colours there are many pleasing shades from pale pink to deep crimson. Some are identical with the Sweet Brier in being quite single, whilst others have a multiplicity of petals, yet cannot be termed double flowers. In nearly every instance the habit of these hybrids is decidedly vigorous. For planting in masses or for Rose hedges they should in course of time find a place in many gardens. On the last occasion these were shown I noted the following in addition to those alluded to last week in the report: *Catherine Glover*, which is of the colour of *General Jacqueminot*, with large imbricated single flowers; *Penella*, with rose-coloured blossoms; *Clara Mowbray*, a deep rosy scarlet; *Effie Deans*, pale pink; *Flora Melvor*, extra large pink. Of other hybrids I was much taken with *Dirk Hatterick* (Keen × *Richard Laxton*), which I would hope will prove a perpetual in flowering. The flowers remind one very much of the old Keen, a grand old Gallica Rose, the growth partaking much of this as well; the perfume is delicious. Would that many of the fine "exhibition" Roses had more of this property. The colour is a dark velvety crimson. *Wamba* is another hybrid (*General Jacqueminot* × *Paul Neron*), the form being that of the latter with the colour intensified. *Edie Ochiltree* (*Princesse de Nassau* × *Isabella Sprunt*) is a pale yellow or straw colour, very profuse. When in commerce, this Rose, which is evidently a climber, should prove a worthy companion to *Turner's Crimson Rambler*. *Bennie Dundee* (*Fringed Musk* × *Goubault*) has dark crimson flowers of large size and semi-double, a singular result in colour from these

parents. These varied results of hybridisation go to prove that there is still a very wide field before us in raising new Roses. The foregoing are without doubt only the forerunners of many more. It is pleasing to note that his lordship did not let the fine old Roses escape his observation. Many of these are not now to be seen except in far-away and obscure gardens. Only in the memory are such as *Beauty of Billiard*, *Boule de Nanteuil*, and other summer Roses. If prizes were offered by the R.H.S. in June as for Teas, these old Roses might again come to the front. G. H.

ORCHIDS.

CATTLEYA GRANULOSA RUSSELLIANA.

A FINE flower of this variety comes to me from W. Harold for a name. He says that his friends call it *C. guttata*. *C. granulosa* was first introduced to this country fifty-three years ago, and the variety was received at the Botanic Gardens at Liverpool a short time afterwards. I am told that the plant from which these flowers were cut has stem-like pseudo-bulbs some 15 inches long, which when they become aged are much furrowed. They bear a pair of dark green leathery leaves on the top, and the panicle bore seven flowers, each measuring 4½ inches across. The sepals have plain edges, whilst the petals are slightly broader, having the edges beautifully frilled. Both sepals and petals are of a yellowish green colour throughout, having a few dots of deep red scattered over their surface. The lip is large, white. The typical *C. granulosa* is smaller in all its parts, the sepals and petals being narrower, while the middle lobe of the lip is less brightly coloured. A plant, which appears to be a variety also, is *Cattleya Schofieldiana*. It is of about the same height as *Russelliana*; the flowers are, however, larger and more beautifully coloured. The petals and sepals have a ground colour of pale tawny-yellow, slightly tinged with green at the base and profusely dotted and flaked with rich purplish crimson; side lobes of the lip large, white on the outside, tinged with green within, middle lobe white in the blade, but the claw has a stain of yellow, which is entirely covered with magenta-purple granulations, which give it a very handsome appearance. All the above like a moist and warm temperature when growing, but after growth is completed they may be placed along with other members of the genus, but more care is required to give them a little water from time to time in order to keep their stems from shrivelling, for if this occurs they are somewhat difficult to restore to their accustomed health. The plants should be potted in good peat fibre to which has been added some freshly chopped Sphagnum Moss. Drain the pots well, and mix some crocks or pieces of charcoal with the soil to help keep it open.

WILLIAM HUGH GOWER.

Cypripedium Huybrechtsianum.—This is a new and distinct form of Continental origin, figured in "Le Moniteur d'Horticulture," Paris, just to hand. Its parents are given as *C. Spicerianum* and *C. hirsutissimum*, but I think there must be a mistake somewhere. The flower is large and beautiful, the dorsal sepal large, pure white, stained at the base with green, above which is a quantity of rosy purple dots; up the centre is a continuous line of chocolate, leaving the whole upper half pure white. The petals are long, somewhat spatulate, the upper part violet-purple, the base yellowish green, thickly dotted with blackish purple and un-

dulated on the margin; the large lip is dull-coloured. The spotting on the dorsal sepal leads me to think that some error has arisen in naming the plant, for *Spicerianum* has no spots upon the dorsal sepal, and *hirsutissimum* is greenish, without spots. I think *C. Leeannum* or some of its varieties, which is itself a cross between *Spicerianum* and *insigne*, must have stood sponsor in this instance. I think the parents for this beautiful plant should read *C. Leeannum* × *C. hirsutissimum*.—WM. HUGH GOWER.

Renanthera coccinea.—A very fine plant of this distinct Orchid in the nursery of Mr. Morse, of Epsom, only flowers now and again. One reason of its comparative rarity in gardens is its shy-blooming character. The best way to grow it is in the East Indian house for the winter, and then in May put it into a sunny and airy greenhouse until October, when it should be returned to its winter quarters. A friend writes that the only especially fine specimen he ever saw was grown in a pot filled with quite large pieces of Elm bark. As the plant grew or the bark rotted, other pieces were given. This species is of scanty growth, and the flowers appear in branching panicles, the petals and upper sepals orange-red, the lower sepals scarlet, a fine contrast in colour, whilst the lip is of similar tone, more crimson, however. When in bloom it is very handsome, the flowers distinct from those of any Orchid in cultivation.

Zygopetalum citrinum, better known as *Promenaea citrina*, is one of the most dainty Orchids in bloom in the Kew collection. It is quite a dwarf species, not more than 3 inches in height, the small leaves glaucous in colour, the flowers being produced from the base of the pseudo-bulbs. As suggested by the name, they are yellow, the margin of the petals dotted with crimson, and the lip of a deeper yellow than the sepals and petals, whilst the inner face of the column is striped with chestnut. It is a Brazilian species.

A note on Cypripediums.—The *Cypripediums* are represented throughout the year by a few species or varieties in bloom, and when at Messrs. Veitch's recently we made note of a number of interesting kinds in full beauty. *C. Rothschildianum* was in splendid character; also the interesting *C. Chamberlainianum*, which has a peculiarly distinct lip covered with rosy spots. Also worthy of mention were *C. superciliale*, a good form of *C. Hookeri*, *C. Veitchi*, *C. callosum*, *C. grande*, and several plants of the charming *C. niveum*. A very fine hybrid is *C. Creon*, a cross between *C. Harrisianum superbum* and *C. cananthum superbum*. The flowers retain the polished character of both parents.

Two fine hybrid Orchids which we noticed in bloom recently with Messrs. Veitch are *Lælio-Cattleya eximia*, a hybrid between *Cattleya Warneri* and *Lælia purpurata*, and *Cattleya Canhami*. The former is a bold, handsome flower, the sepals and broader waxy petals of a rose-purple colour, and the lip deep crimson with a pale margin, a suffusion of yellow in the throat setting off this intense colour. *C. Canhami* is noteworthy for its rich colours. The sepals and petals are of a rosy shade, and the large lip deep self crimson-purple with a veining of yellow within the throat.

Disa Veitchi.—Several specimens of this hybrid, the first raised, are in full bloom in the nursery of Messrs. J. Veitch and Sons, Chelsea. It was raised by crossing *D. racemosa* with *D. grandiflora*, and the plant was first shown at the meeting of the Royal Horticultural Society, June 9, 1891, when it was awarded a first-class certificate. The flowers are not so large as those of *D. grandiflora*, but about intermediate in this respect between the two, the colour being shades of rose, whilst the lip has similar markings to that of *D. racemosa*. The flowers vary somewhat in character, and this was noticeable in the case of the plants, three in number, exhibited in 1891. This hybrid has quite fulfilled expectations and proved a good garden plant, very free blooming and not difficult to grow. The plants at Chelsea are full of flowers, several

on each of the rather tall scapes. In time we shall get quite a family of hybrid *Disas*, *D. kewensis* being the latest acquisition.

SHORT NOTES.—ORCHIDS.

Cypripedium Curtisi.—T. Hedley sends me a very richly coloured flower of this species. It has the great failing of this kind, viz., a very large lip of a very dull colour.—W.

Cattleya Mendeli (*G. W. Marsh*).—The flowers sent do not strike me as being anything unusual. The lip has a broad marginal white border, but there is very little colour; in fact, amongst Orchid growers I am inclined to think it would be reckoned a poor variety.—W. H. G.

Lælia tenebrosa.—A very fine variety of this species comes from Mr. Broome, of Llandudno. The sepals and petals are rich bronzy brown, the large lip rosy purple, heavily blotched with deep maroon in the throat. It is one of the best I have seen for colour, but I have noted some others with larger petals.—W.

Lælia purpurata.—Really beautiful flowers of this species come from Mr. Broome, of Llandudno, the sepals and petals of all being white, thus intensifying the dark colours of the lip. I need not, however, recapitulate them, as I think most of these varieties are to be found amongst those selected by me from those sent me by M. Linden last week.—W.

Odontoglossum hastilabium.—This is one of the most attractive Orchids in bloom now, and some excellent plants are in flower in the collection of Messrs. Veitch. The flowers are produced in a sturdy raceme, and if individually not particularly showy, they make a good display in the mass. The sepals and petals are greenish barred with chocolate, and the lip is white.

GARDEN FLORA.

PLATE 915.

TUFTED PANSIES.

(WITH A COLOURED PLATE OF 1, RAVENSWOOD; 2, EDINA; 3, ROTHESAY.)

IN 1862 Mr. James Grieve, of Messrs. Dicksons and Co., of Edinburgh, started to cross *Viola lutea*, which he found growing on the Pentland Hills, with the ordinary show Pansy of that time. In 1863 he treated *V. amoena* and *V. cornuta* in a similar way, and from that work sprang the Scotch race of bedding Violets or tufted Pansies. About the same time Mr. William Dean, now of Birmingham, began working in a similar way, but quite independently and without knowledge of Mr. Grieve's work. To Mr. Dean belongs great credit for his long-continued efforts towards the popularising of this most useful family of plants. These two enthusiastic workers are still in the field, and in recent years they have found many earnest coadjutors, such as Mr. Baxter, of Daldowie, the well-known raiser, and Messrs. Dobbie and Co., of Rothessay, whose magnificent exhibits of tufted Pansies are so frequently seen at the London shows. Few, if any, classes of plants have advanced more in popular favour during the last ten years than tufted Pansies, and yet a most remarkable thing in connection with them is that, notwithstanding the great army of growers now in the field, many of the old varieties of twenty-five years ago should still be standard flowers! Holyrood, Bullion, Countess of Kintore, Ariel and Archie Grant are all old flowers, which to-day have not been replaced by better ones in their respective colours. These are all selfs, and that fact seems to indicate that usefulness and longevity are to be looked for in

* Drawn for THE GARDEN by Gertrude Hamilton, from flowers sent by Messrs. Dobbie and Co., Rothessay. Lithographed and printed by Guillaume Severeys.



TUFTED PANSIES
1. RAVENSWOOD. 2. EDINA. 3. ROTHES

that class rather than among the more fancy varieties of recent date. Beauty, too, is a quality that is not wanting in the self; in fact, they surpass the others in the estimation of many. The chaste delicacy of varieties like Ardwell Gem, Ariel, Wm. Niel and Duchess of Sutherland leaves little to be desired. These all approach the true *Viola* in habit as well as in purity of colour. Immediately we get edged flowers, such as Columbine, Hartree, and Merchiston Castle, we seem to get a delicacy of constitution; although, strange to say, in the cases of Blue Cloud and Duchess of Fife, both also edged flowers, the vigour of growth is in no way impaired. This can only be accounted for by the effect of one of the parents on the constitution, producing in the first-named varieties exquisite beauty in the flower, but defect in the constitution of habit. These facts are worthy of the careful attention of all who would attempt to raise new varieties. Many striped flowers of the York and Lancaster type are grown, but they are all open to the same objection as varieties of the Columbine type. They rarely possess a vigorous constitution and are unsuited for massing in the borders for bold effects. For this purpose there is nothing to equal good self-coloured varieties. Three groups of these might be arranged thus:—

YELLOWS of proved worth and suitability for border cultivation in clumps.—Bullion, Ardwell Gem, Lord Elcho, Grievie.

WHITES.—Countess of Hopetoun, Mrs. Kinnaird, Lady Dundonald, Crofthouse.

BLUES.—Archie Grant, True Blue, Duchess of Sutherland, Mrs. C. Turner.

Among meritorious varieties of recent introduction, the three figured in the coloured plate are acquisitions of great merit. They were introduced into commerce last year by Messrs. Dobbie and Co.

RAVENSWOOD (Baxter) is a flower of beautiful texture, very rich in colour, and of a remarkably robust habit.

EDINA (Dobbie) might very aptly be described as a dark Countess of Kintore, but it differs from that fine old variety in having a better habit. It is a most continuous bloomer, and appears gay and effective in all weathers.

ROTHES (London).—The best pure yellow tufted Pansy, absolutely without rays or markings of any kind. The flowers are very sweetly scented.

Other recent introductions of merit are:—**BRIDESMAID** (Dean).—A lovely flower, pale primrose in colour and without rays.

COUNTRESS OF WHARNCLIFFE (syn., Lord Fitzgerald).—A delightfully scented variety of the purest white.

DOROTHY TENNANT.—Fine pale purple, free grower and free bloomer; grand for masses.

DUCHESS OF FIFE.—Light primrose distinctly edged with pale blue; fine tufted habit.

H. M. STANLEY.—Purple, with a very decided dark stripe; one of the finest varieties in cultivation.

MOONLIGHT.—Quite a new combination of colours appears in this flower—yellow and pink; a charming variety.

ROSINE.—Blush-white suffused with rose colour, free and continuous bloomer.

SUNRISE.—A large flower of a dark rosy purple colour.

W. NIEL.—A most distinct variety of a pale rose colour; fine tufted habit.

WONDER.—A soft pleasing yellow flower of good form with most profuse blooming tendencies.

FAVOURITE.—A pale blue bedder in the way of Duchess of Sutherland, but quite distinct from that fine old variety.

PRINCESS BEATRICE.—Clear shining rose colour with dark centre. A large fine flower and a good grower.

The foregoing are all large flowered varieties, and cannot be too strongly recommended.

They are varieties with reputations which have stood the test of several years. The putting of new varieties of tufted Pansies on the market is in great danger of being overdone. One grower this season catalogues sixty new varieties. This is not the way to develop satisfactorily the great resources of these plants. The old methods are the best. We have known 10,000 seedlings grown and not ten selected to send out. A reference must in justice be made to the new type of tufted Pansies raised and recently introduced by Dr. Stuart, of Chirnside, N.B. Quite a number of them were grown for trial last year in the gardens of the Royal Horticultural Society at Chiswick. The flowers are small, about half the size of those of the ordinary varieties, but are remarkable for their purity of colour and sweetness of perfume. The habit of the plants is dwarf and spreading, forming real tufts of dark green foliage, which makes a most effective background for the blossoms, which are borne on erect footstalks 2 inches or 3 inches above the leaves.

VIOLETTA was the first of the section and gives it its name, and it is still the best.

SYLVIA is a larger flower than *Violetta*, of a beautiful creamy shade, and among the other varieties introduced the following are well worthy of special note.

SWEET LAVENDER.—An excellent light blue.

BLUSH QUEEN.—A very delicately coloured flower.

GEORGE MUIRHEAD.—A perfect gem. Fine yellow.

MRS. PRIMROSE.—A striking novelty, with a rather more erect habit than the type.

These are a few of Dr. Stuart's introductions. They represent only the beginning of a section, which if carefully grown and looked after is destined to supplant all the others.

W. C.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

WINTER KALES.—Upon no account should the plants be set out if in a small state, as it is much the wisest plan to wait until they are strong, but of course not overgrown, as they would suffer equally either way. Where it is decided through force of circumstances to plant out between widely disposed rows of Potatoes, or in each alternate row, it is very essential that the plants should be strong so as to be enabled to make headway at once. In planting arrange so that there should be a succession until late in the spring. The Scotch or curled Kales, both the dwarf and the tall varieties, come first, these being followed by the invaluable Cottager's, Read's Hearting, and last, but not least, the Asparagus Kale. On good land set out the plants 30 inches apart both in the rows and between the rows, the Asparagus being allowed 6 inches less in the rows.

PLANTING KALES.—In this season of drought more precautions have to be taken to ensure the plants taking readily to the soil. Where the plants have to go out between rows of Potatoes, the soil will certainly be very dry, as the Potatoes have extracted the moisture. The best course is to lift the plants with all the roots possible, gently easing them previously with a fork. Previous to planting, dip them in a puddle formed of soil and water, and if club is likely to be troublesome, pinch off all excrescences, adding some soot and lime to the puddle, also dressing the surface of the soil with lime. After planting attend to watering for a time or until it is seen the plants have taken to the soil. A good hoeing afterwards is generally sufficient to start them freely into growth.

SPROUTING BROCCOLI.—This requires a tolerably long season of growth to make large plants. Not

being nearly so hardy as the Kales, the plants should be set out quite 30 inches apart, also allowing if possible an extra 6 inches between the rows. The plants then by being freely exposed will become more hardened. The soil must not be too rich, or the stems will become too succulent to withstand even a tolerable amount of frost.

AUTUMN CABBAGE.—Good ground is essential for this crop, as when well grown they are tender and of delicious flavour. The soil must be both freely worked and well manured. If Savoy are large enough, these should also be planted. As a rule these are planted too early, especially the variety Tom Thumb. If a later batch of this or any other small-growing sort could be planted three weeks hence, they would prove most valuable. Unlike the larger-growing varieties, they are not nearly so susceptible to injury from frost. Chou de Burghley should be planted at the same time. This may be truly termed a very delicately flavoured winter Cabbage.

COUVE TRONCHUDA.—This is another of those little grown vegetables. Coming in as it does in the autumn months, it is invaluable. To grow it well, it must have the most liberal treatment. Being a large grower, the plants should be set out in a single row 3 feet apart. The midrib of the leaf is the edible part and is cooked in the same way as Seakale. When all the larger leaves are used up, the centre heart may be cooked like a Cabbage.

ONION FLY.—If this pest cannot be completely subdued, much may be done to lessen attacks. Soot, besides being distasteful, acts as a stimulant, this being freely sprinkled over the plants. Well-diluted petroleum, syringed lightly over the plants, also checks the fly, but care must be taken to keep it well agitated. As stated by a correspondent lately, a decoction of quassia chips, with a little approved insecticide, I should think, is good.

A. YOUNG.

HARDY FRUITS.

STRAWBERRIES.—All have suffered badly from the prolonged drought, even those that were kept well watered not producing such fine fruit as usual. The promise of abundance of runners is not good. As might be expected, the earliest and best runners are formed by vigorous young plants, and if many are required from older clumps, then must watering be persevered with while the drought lasts. Red spider is very troublesome this season, varieties not often overrun by it being badly affected. Those who have the advantage of a hose and a good pressure of water ought to be able to keep the foliage clean, but where neither labour nor water can be spared for heavily washing the leaves every evening, red spider must be kept down by other means, or the old plants as well as the runners will be badly crippled by it. The simplest and most effective remedy will be found in flower of sulphur. Squeeze a handful of this through a strip of scrim canvas or muslin bag into each 3-gallon can of water, stir it up with a syringe, and then spray it well over the upper and lower surfaces of the leaves. If rain washes it off before it has had time to destroy the red spider—and it takes about five days to do this properly—repeat the dose. The layering of young plants ought to be proceeded with before they lose their first formed roots, or otherwise subsequent progress will be slow. The soil in small pots is less easily kept in a moist state than is a layer of fresh rich soil over which can be drawn, if the weather keeps hot and dry, the old straw mulch. If a winter or early spring mulch of decayed manure was applied, the layers duly pegged down into this and the straw litter drawn up to them, moisture will be well enclosed, and strong well-rooted plants soon be had. If small pots are used, half plunge these and fasten the plantlets to the soil by means of good-sized pebbles or stones, these answering the double purpose of fixing them and also of conserving moisture where it is most needed. In any case, or whether the layers are placed into pots, a good thickness of fresh soil or old manure, never let them become very dry, and detach and plant out

before the former are crowded with roots, or the roots have spread very far in the two latter.

LATE STRAWBERRIES.—Where rows or beds are grown on warm borders and in the open only, the Strawberry supply will have been in many places of short duration. It is the cooler quarters that are producing the best, and in some respects the most valued, supplies of fruit. On wide north and north-east borders late varieties are doing remarkably well, the fruit being plentiful, large, and, not ripening under somewhat unnatural conditions, the quality is also superior. In these positions watering has been needed, and ought to be persevered with till the last of the fruit is gathered. The need for these late crops was never more apparent than now, there being no really good substitute for Strawberries in such tropical weather as we are passing through. Sir Joseph Paxton succeeds well in comparatively cool positions, or even quite at the foot of a north-west wall, and for growing just clear of walls with a northern aspect, some of the best are Loxford Hall Seedling, Latest of All, Countess and Waterloo. The two first named are far less liable to be crippled by red spider in these cool quarters than they are in the open.

RASPBERRIES.—These are failing badly on light, quick-drying soils, and nothing short of a heavy mulch of strawly litter—the whole of the ground about them being covered—and occasional thorough soakings will have prevented, or in some districts will prevent, the fruit from drying up instead of swelling to its full size. If sucker-growth is thick, thin out freely, or otherwise all will be soft and weakly, and the reverse of hardy and serviceable. Young plantations require the same attention in the way of mulching and watering as the old ones, as unless strong canes are formed the crop next season will be a light one. This should be a good season for autumn-fruiting varieties. Already they are on the point of flowering, and if the young or fruit-producing suckers have been duly freely thinned out, the ground mulched and water given, a fine lot of fruit should be had in August or September.

BUSH FRUITS.—Birds are very numerous and voracious, quite a variety in addition to blackbirds feeding on the Red and White Currants. Fine-meshed fish netting or three-quarters of an inch mesh galvanised wire netting closely fastened over the bushes is the only effective covering, and if most of the lateral growth is spurred back to the fourth or fifth joint, air will be admitted freely, and the fruit will hang well in either dry or wet weather. Black Currants are not interfered with till other small fruit is scarce, but as these do not hang long, it is useless to attempt keeping the fruit late—at any rate on the bushes, but it can be bottled. Gooseberries are fast changing colour, and these, again, will have to be netted over if ripe fruit is desired. Take the greatest care of the Red Warrington, as this keeps longer in a ripe state than any other variety.

PEARS.—During the last few days red spider has given unmistakable evidence of its presence on some of the wall trees, and unless its spread is checked it will so weaken the trees that the fruit will be smaller than usual, and many of the leaves will most probably drop prematurely. Among the worst affected is Knight's Monarch, and seeing that keeping the roots well supplied with water is said to be a preventive of this variety's much-to-be-regretted habit of premature fruit-dropping, overhead syringing nightly as well as a good soaking of water occasionally should be tried. Other heavily cropped trees are giving signs of suffering from want of water, and, if possible, they ought to have it freely, as it is very certain the rainfall, when it comes, will not reach many of the roots. If overhead syringing—a garden engine being of good service this season—cannot be resorted to often, shorten all lateral growth on the wall trees to the fourth or fifth joint and then thoroughly coat the leaves with flower of sulphur, mixed and applied as advised in the case of Strawberries. In the southern parts of the country the leading shoot on horizontally-trained trees is now suffi-

ciently firm to be cut back to a length of about 10 inches, or, say, just beyond the third course of bricks from the uppermost pair of branches. This will cause it to break strongly, and the three best placed upper shoots being selected and laid in one as a leader and one on each side of it, two pairs of branches will have been secured in one season. Leading shoots of all kinds of wall trees should be properly fastened to the walls before they become crooked and set, as it will be a difficult matter to accomplish this afterwards without breaking some of them. W. IGGULDEN.

PLANT HOUSES.

THE WEATHER.—FIRES.—If firing can at any time be entirely dispensed with even where the temperature needful is the maximum degree, the present surely is such an one. In doing without fires altogether for a few weeks, there need be a slight modification in the treatment of houses in which there is any suspicion of accumulated moisture. For instance, where there is a large water tank therein to add its quota at all times, there will be even with this hot weather some risk of too much moisture in the atmosphere if it be not dispelled. To effect this a slight amount of top ventilation should be left on all night, the house being shut up in the usual way during the afternoon whilst there is still sun power to run up or keep the temperature to 85° or 90° for a while. The use of the syringe with no firing should also be slightly modified, for it makes a deal of difference even between a slight fire and no fire at all in the atmospheric conditions of any plant stove. When the first thing in the morning the plants are found to be bathed in moisture it may be taken as a sign that this is too excessive. A slight amount of dew upon the foliage is, on the other hand, beneficial, the same being easily evaporated in due time. The conditions in every case should be carefully regarded and action be taken accordingly. For instance, it will be possible to dispense with morning syringings almost entirely in some cases, for it is needless to syringe when it is seen that the plants have already more moisture deposited upon them than they can throw off. In propagating pits with a close atmosphere and no fire heat some extra care will be needful to prevent injury by damping. Poinsettias, for instance, now striking will want looking after rather sharply. Dispensing with artificial heat at such times as the present is, I consider, refreshing and strengthening to the plants, but the dew point must not be maintained for too long a time. In some cases it will be found advisable to have a little fire put on every few nights to modify these conditions.

WATERING.—This necessary work wants looking after very closely. It is somewhat surprising what an amount of water some plants will take during hot weather, but they must be in good condition at the roots to do this. To over-water plants that are weakly in root action and which have possibly more soil to grow in than is really needful will only make matters worse. Just because a plant looks a little sickly it does not always follow that at such times it has been kept too dry at the roots, for the opposite may be the case. Palms when healthy will now take a large amount of water; in fact, it is hardly possible to over-water such plants, more particularly if they were not potted this past spring. With this they will also largely benefit by frequent applications of manure water or an artificial stimulant, an interchange of these being advisable where the former is of good quality and not thick, thus leaving a sediment upon the surface of the soil. Do not let healthy plants of Palms suffer in the least at the roots, nor from want of atmospheric moisture, the syringe being used freely, otherwise both thrips and red spider will soon attack them and spoil the foliage. The same applies to Tree Ferns both as regards watering at the roots and syringing overhead as well as under the fronds. If these be excessively pot-bound, a few holes may be made in the soil to let the water penetrate more freely into the ball, or pans can be

stood under the pots. Pouring water into the crowns will be a great help, the stems also being kept well moistened. Such quick-growing plants as Caladiums and nearly all the rest of the Aroids will take a large amount of nourishment, drought in any case seriously affecting their vitality. Such flowering plants as Allamandas, Clerodendrons, and Vincas will need most generous treatment; the first of these may possibly be planted out; if so, that is no exception to the rule. In any case the planted-out climbers must not escape notice; these often get on the dry side without showing their distress so quickly as pot plants, but nevertheless they suffer, and there is the after difficulty of thoroughly soaking all the soil. Dipladenias must, however, be an exception, for the more nearly these are treated like succulent plants, the safer and better will it be for them. Small decorative plants, as Crotons, Dracaenas, &c., that have to be confined at the roots to meet certain requirements, must be looked after very closely, otherwise their foliage will soon assume a sickly hue. When these plants are in use out of the plant stove now, the pots should be covered with Sphagnum Moss for the retention of moisture.

VENTILATION, &c.—The advice has already been given to leave on a little top air at night. This can soon be regulated to suit each case. In the morning do not allow any great advance in the temperature before more is added thereto; with a rise of 5°, this will be quite needful. It is always the better plan in hot weather to be in advance with airing than in arrears; otherwise there must of necessity be later on a greater inrush of external air, which does not do so much harm in the lowering of the temperature as it does in driving out the atmospheric moisture. I am not an advocate for any great amount of front air to plant stoves; where possible, I would dispense with it entirely. Where given, it should only be to a moderate extent. Rather more shading is better than admitting too much air in such a manner; the blinds can be run down earlier to meet this case. JAS. HUDSON.

ORCHIDS.

It is very interesting and instructive to compare the plants grown under our treatment in this country with those obtained from their native habitat as they are imported. In many cases the plants as they are in our hothouses show very long growths in proportion to their thickness, and one naturally asks, How is this? Take, for instance, *Cattleya Dowiana*. The native plants are distinguishable by short, rather thickish pseudo-bulbs, showing that they must grow on exposed places. *C. aurea* seems to grow under similar conditions, but neither of them will grow and flower regularly under cultivation for many years in succession, the growth in our hothouses being much longer and not so well matured as the native growth. In describing *C. aurea* in the first volume of the "Reichenbachia," the editor says it is in its native country attacked by a beetle which destroys the roots, and this may be the reason why large specimens are not imported into this country. The beetle has even been introduced with the plants, and it has to be destroyed by dipping them in a strong infusion of tobacco. It is singular that *C. gigas*, which grows with *C. aurea*, is not attacked by the beetle. I fancy the reason why these two—*C. Dowiana* and *C. aurea*—do not thrive is owing to the yellow colour of the flowers, which must also be contained in the leaves. I have observed that where this colouring matter tinges the leaves, stems or bulbs of plants, they nearly always lack vigour. The plants are now developing their flower-spikes where they are flowering. Those who cultivate these plants know well that flower sheaths are not at all freely produced. If they are not flowering, keep the plants at rest until the time arrives when they should start into growth again. It is not always possible to prevent this species starting into growth at the wrong season. Dryness at the roots and an intermediate temperature

are best. In connection with the *C. aurea* and *Dowiana* types, the rather pretty *C. Eldorado* should be mentioned as requiring the same treatment. They all come from hot districts, and when we can produce short stout bulbs, such as are grown in the native districts where the *Cattleyas* flourish, doubtless the results will be more satisfactory.

We are repotting *Dendrobiums* and *Cattleyas*. This work continues until all those plants that have passed out of bloom have either been repotted or surface-dressed. We repot the *Dendrobiums* after they have made considerable growth sometimes, for growth of the new pseudo-bulb does not always mean a corresponding root-development, the roots often not pushing freely until the sheaths are well developed. I have previously given full instructions as to the best treatment of these plants, and need only add that we are using more *Sphagnum* in the compost for *Cattleyas*, and the roots evidently run more freely in it. The deciduous *Calanthes* are now making roots freely, and during the present hot weather it has been necessary to water freely. These plants can take manure water as soon as the flower-pots they are growing in have become well filled with roots; it should be applied weak and about twice in a week; the tips of the leaves may be within about 6 inches of the roof glass. The late flowering varieties will not be so far advanced in their growth, and until they are well rooted great caution is necessary in watering. Our *Thunias* are flowering rather late this year. Of course, the late or early flowering of such plants depends to a great extent upon the time they were started into growth, and some of them have a tendency not to produce flowers at all, but instead to run up long Osier-like growths of a most inordinate length, especially when grown in a warm house. They will soon pass into their resting period when the bloom has passed away. The *Thunias* are truly handsome plants when well grown, and although the blooms do not last long and are very fragile, there is a rapid succession of them until the elegant drooping spike has flowered out to its extreme point. Let the *Pleiones* have sufficient water, and keep the plants in a light position in the *Cattleya* house until the bulbs are well formed. At this season of the year the grower of *Orchids* has to be on the alert to prevent aphides attacking his plants, and what is even more disastrous to them, yellow thrips. These troublesome pests are everywhere, and in a season like the present, with no rain for months, gardeners are at their wits' end how to find time for everything. Green-fly is easily observed and can be destroyed, but thrips are usually well down into the new growths and cannot be so readily observed. Certainly none of these parasites do so much harm when the cultural conditions are right.

Referring again to some of the occupants of the cool house, I may say that I have often seen the two splendid *Oncidiums*, *O. Marshallianum* and *O. macranthum*, quite disfigured with thrips, owing, I believe, to nothing else but injudicious treatment, probably keeping them too warm and too dry. They both do well in the cool house, and may be freely syringed during hot weather. The plants ought to be placed in each case near the roof glass. They are usually grown in flower-pots or teak baskets, but one of the best plants of *O. macranthum* I ever saw was merely fastened to a large block cut from an Apple tree, with some *Sphagnum* fastened at the bifurcation of two large branches. It continued in unwonted vigour for many years until another gardener took charge of it. The change of treatment caused it to decline, and when this happens the plant seldom recovers. The *Coelogynes* are making very good growth now, and I find that the shady side of the house suits them best. They can also stand a little manure water as often as the *Calanthes* aforesaid. Plants that were repotted in the spring have usually the pseudo-bulbs a little shrivelled; in fact, they are sometimes very much so. The most valuable variety is the pure white form, and this certainly does shrink considerably when it is necessary to repot it. The right thing is to get

the plants into good health with plenty of roots, and when it is necessary to repot them, do it very carefully and at the right time. The bulbs plump up again when growth is completed.

J. DOUGLAS.

CHRYSANTHEMUMS.

NEW AMERICAN CHRYSANTHEMUMS OF 1893.

THE progress of *Chrysanthemum* cultivation, and the extraordinary enthusiasm which that flower has excited in the United States of America during the last ten years, have been concurrent with the rapid and remarkable strides that have taken place in its popularisation in the Old World. It is generally conceded both here and in America that this advance is due primarily to the efforts of Dr. H. P. Walcott and Mr. John Thorpe, both of whom were among the earliest horticulturists in that great country to appreciate the value of the *Chrysanthemum* as an autumn flower. Indeed it is not saying too much to attribute to those two gentlemen the honour of being the first to raise new seedling varieties of that flower in the States, which seedlings very speedily became the means of attracting other growers to embark upon the same work, the names of whom are now almost as familiar to English cultivators as of those who first led the way. It is no small tribute to our cousins across the Atlantic to point out that there are now perhaps twice as many first-class raisers of new *Chrysanthemums* in the States as there are in France, a fact which may properly create some surprise, seeing that the French have been engaged in the work for a period extending considerably over sixty years.

Although Continental varieties may head the list of our premier show blooms, there is every indication that the competition between them and American raised varieties will yearly become more severe, and unless the French devote themselves more particularly to the production of good exhibition sorts from our point of view, and not theirs, that they may sooner or later have to be content with the second post of honour in place of the first, which they have held for a long time past.

It is as difficult not to be struck with the vast amount of attention that is paid to the popular autumn flower by the editors of the American gardening papers as it is with the very slight recognition which it receives at the hands of the directors of the French horticultural press. In the former we have lengthy interesting accounts of new introductions, novel seedlings, &c., reports of innumerable shows from the Atlantic to the Pacific, engravings of new varieties of distinguished merit, and a mass of other matter bearing in some way or other upon the popular favourite, while in the latter the same flower which has done so much to raise French horticulture in the estimation of a large body of the English gardening fraternity, amateur and professional, is so utterly neglected, that there is no writer in France that can claim to have devoted his attention seriously to it.

At some of the exhibitions in the States there is an interesting custom of presenting to every visitor what they call an exhibition souvenir. This consists of a neatly and sometimes artistically printed pamphlet, containing all particulars of the show and of the society under whose auspices it is held. Sometimes specially written articles on cultural or historical matters are given, a list of prize-winners, of the exhibits and subscribers, together with such other literary material likely to prove interesting to those who go to visit the show. Several of these souvenirs have been sent to me and are much appreciated, for they afford evidence of the determination on the part of the organisers to make their shows succeed.

And that they do succeed as a whole there can be no doubt, in spite of a few financial failures, as there must always be. It is not long ago since it

was reported in one of the American papers that the receipts at the *Chrysanthemum* show at Boston amounted to more money than was taken at all the other shows held by the society during the year. Probably some such experience could be related of those held at Philadelphia, Cincinnati, Buffalo, Providence, Indianapolis, Baltimore, Pittsburgh, and other important centres.

It is not therefore to be wondered at that important prizes are offered for competition, and that large numbers of new growers are yearly added to the lists. Still less is it a cause for wonder that raisers are springing up all over the country with hundreds of new seedlings to compete with existing varieties, many of which by reason of their European origin being unfitted for the climate of America, and giving cause for much disappointment when grown under such different conditions.

For several years past importations of new American seedlings have been regularly made by English importers, and their number has been steadily augmented. Unfortunately, these, like the Continental ones, require weeding, for many that do well in the States fail to respond to the opinion we have formed of them by verbal description when grown here. Leaving aside incurred varieties, which no florist but the English seems to be capable of producing in any number or with much satisfaction to ourselves, there is good reason for expressing gratification at the American *Chrysanthemums* as a whole.

It is not possible with American seedlings, as it is with the English or French, to state the exact number, or anything near it, of this season's novelties. The most that can be attempted is to give an idea of the number that may possibly be imported into this country, and this will no doubt be all that is necessary at present. There are unquestionably from two to three hundred varieties announced as new American seedlings and importations, but those which are mentioned hereunder are the ones we are most likely to see this autumn and next.

The sectional terms are by many of the distributors entirely ignored, so we are in doubt to what division of the *Chrysanthemum* a large proportion of the novelties belong. I have said before, and I do not hesitate to repeat, that for the mutual benefit of English and American cultivators it is a matter to be regretted that there is no kind of bond soever existing between the National *Chrysanthemum* Society of this country and that of America. Indeed, I am beginning to doubt whether such a society exists there at all, for no record of its existence seems to have appeared in any of the American papers that have come under my notice during the past twelve months, nor does private correspondence with well-known *Chrysanthemum* authorities elicit anything like satisfactory information upon the subject. If there were once established between the two societies some kind of reciprocal communication, a good deal of useful work might be accomplished with regard to classification and nomenclature, to say nothing of other matters of equal importance relating to the flower. For the present this seems far from being accomplished.

In the American novelties for 1893 will be found many varieties bearing quite distinctive names, although *Creole*, *Defiance*, and *Golden Ball* may be objected to on the ground of having been previously used. It has long been noteworthy in connection with varieties brought over from the other side of the Atlantic that the names are at once distinctive and of reasonable length, and it appears that the new varieties of this year are no exception to this general rule. It would be well if other raisers could be induced to imitate the Americans in this respect.

A. A. Sturges (Spaulding).—Long broad petals, deep golden yellow.

Ada Strickland (Spaulding).—Aureole; chestnut-red, broad flat ray florets.

Alba Venus (Smith and Son).—Reflexed; pure white, dwarf.

Amber Queen (Hill).—Chinese reflexed; soft amber.

American Flag (Spaulding).—Japanese; silvery rose, striped dark crimson.

Anna Woods (Hill).—Rosy magenta and silver.
Arthur Veitch (Spaulding).—Deep ox-blood red, reverse shaded copper-bronze.
A. S. Marie (Spaulding).—Japanese reflexed; long broad petals, rose, shading bluish.
A. T. Ewing (Hill).—Cream white and carmine-pink, broad petals.
Bryden, Junr. (Spaulding).—Japanese incurved; soft yellow, similar shade to H. Cannell.
Calendula (May).—Deep orange.
Charles L. Mitchell (Spaulding).—Japanese reflexed; broad petals, ivory white.
C. J. Osborne (Spaulding).—Japanese incurved; broad petals, rich gold, striped red.
Creole (May).—Japanese incurved; deep claret, reverse bright garnet, broad petals.
Defiance (Spaulding).—Japanese; broad petals, bright Indian-red, spotted old gold.
Dr. H. D. Hull (Smith and Son).—Long broad petals, cameo-pink.
E. G. Uihlein (Pitcher and Manda).—Reflexed; white, changing to lilac, marbled and veined light purple.
Emily Ladenberg (Spaulding).—Japanese incurved; large solid bloom, deep crimson.
Ermenilda (Smith and Son).—Pure rose-pink.
Fascination (May).—Long twisted petals, soft lemon.
Florence Boyd (Pitcher and Manda).—Rose-pink, lined white.
Frances T. Breese (Spaulding).—Deep golden yellow, dwarf.
F. Schuyler Matthews (Pitcher and Manda).—Broad incurved petals, salmon-pink, tipped old gold.
Garten Inspector Vogel (Pitcher and Manda).—Japanese; a yellow Col. W. B. Smith.
Geo. R. Gauze (Hill).—Semi-globular bloom, bright bronze or terra-cotta.
Gertie (Pitcher and Manda).—Incurved petals, pale primrose, hairy.
Gettysburgh (Henderson).—Deep crimson sport from Omar.
Gladette (Spaulding).—Deep salmon-pink.
Gloriana (May).—Broad incurved petals, clear lemon yellow.
Golden Ball (Gane).—Globular reflexed bloom, deep golden yellow.
Golden Wedding (Henderson).—Rich golden yellow, large blooms, long broad petals.
Good Gracious (Henderson).—Peach-pink, incurving petals, imported from Japan.
Grenadier (Henderson).—Deep red, reverse old gold.
Illuminator (May).—Broad straight petals, deep yellow.
J. D. Foot (Spaulding).—Large bloom, medium petals, shortening to centre.
Jeannette (May).—Incurved; bright golden yellow and crimson.
Jennie Williams (Hill).—Creamy white with yellow shadings.
Joey Hill (Hill).—Deep cardinal-red, faced old gold.
Joseph Clarke (Pitcher and Manda).—Incurved; deep golden yellow.
Judge Hoyt (Hill).—Anemone; pale pearl-pink.
Kamaba (Spaulding).—Seedling from E. G. Hill; yellow tipped old gold, petals broad and flat.
Louis Menand (Pitcher and Manda).—Japanese reflexed; deep rich crimson-maroon.
Mabel Simpkins (Spaulding).—Chinese; pure snow-white globular flowers.
Mark Twain (Henderson).—Chrome-yellow and cinnamon-red.
Marion Dingee (Spaulding).—Japanese incurved; sea-green shaded to snow-white.
Martha Duryea (Spaulding).—Thick broad petals, clear white.
Maud Dean (Hill).—Petals broad and incurving, pink, almost rose.
Mascotte (Spaulding).—Deep pink, lighter at tips, reverse silver, similar colour to Violet Rose.
Matchless (Spaulding).—Ball-like flower with incurving petals, bright lemon-yellow.
Miles A. Wheeler (Smith and Son).—Japanese incurved; light yellow, striped pink.
Miss Baldwin (Pitcher and Manda).—Reflexed; pure white, suffused pink.
Miss Frances Thorley (May).—Pure white, dwarf.
Miss Lydia Hopkins (Hill).—Broad petals, white, suffused bright pink.
Miss M. Clarke (Pitcher and Manda).—Japanese; long, drooping, twisted petals, soft pink.
Miss Sue Price (May).—Twisted petals, pink.
Mr. Jingle (May).—White, late.

Mrs. Alexander (Spaulding).—Japanese reflexed; colour white, spotted dark crimson.
Mrs. Bayard Cutting (Pitcher and Manda).—Japanese; deep rose, reverse silvery pink.
Mr. B. Spaulding (Spaulding).—Large blooms, colour deep lemon.
Mrs. Dudley C. Hall (Spaulding).—Incurved; yellow sport from St. Patrick.
Mrs. T. L. Ames (Pitcher and Manda).—Japanese incurved; orange-yellow.
Mrs. Henry Graves (Pitcher and Manda).—Incurved; peach-pink.
Mrs. Henszey (Pitcher and Manda).—Japanese; broad petals, rich scarlet.
Mrs. H. F. Spaulding (Spaulding).—Japanese incurved; white.
Mrs. Jewell (Pitcher and Manda).—Japanese; rich yellow, shaded bronze.
Mrs. J. M. Schley (Spaulding).—Japanese incurved; broad heavy petals.
Mrs. J. W. Crouch (Hill).—Japanese; broad petals, globular flower, purple.
Mrs. Leslie Ward (Pitcher and Manda).—Incurved; buff, shaded pink, tipped yellow.
Mrs. M. W. Redfield (Smith and Son).—Reflexed; peach-pink, dwarf.
Mrs. Stephen Ralli (Pitcher and Manda).—Japanese; rich golden yellow, petals broad, long and drooping.
Mrs. T. Denne (Pitcher and Manda).—Japanese incurved; broad, long twisted petals, deep pink, tipped lighter.
Mrs. Walter Cutting (Pitcher and Manda).—Japanese incurved; soft rose, lined white.
Nankin (Henderson).—Sulphur-yellow, shading to cream-white.
Niveum (Smith and Son).—Japanese; snow-white.
Nonesuch (Spaulding).—Japanese reflexed; style of Avalanche, colour snow-white.
Old Homestead (May).—Broad petals, white, lemon centre.
Parthenia (Smith and Son).—Reflexed; white.
Pearl Beauty (Pitcher and Manda).—Japanese incurved; pearly white.
Polo (Henderson).—A curious variety, long petals with crooked ends like a polo stick.
Portia (May).—Incurved; pink, dwarf.
Pres. Wm. R. Smith (Hill).—A pure self pink.
Primrose League (Pitcher and Manda).—Japanese; creamy white with primrose centre. First-class certificate N.C.S.
Redondo (Smith and Son).—Wheeler type; orange, reverse gold.
Robert McInnes (Hill).—Colour quite as bright as Mrs. C. W. Wheeler both in scarlet and gold; double globular flower.
Sans Peur (May).—Incurved; crimson inside, reverse buff.
Sir Edwin Saunders (Pitcher and Manda).—Japanese incurved; orange-buff or terra-cotta.
Stoneacre Gem (Spaulding).—Anemone; rich bronze and gold; late.
Summit (May).—Pale yellow, deeper in centre.
Sun God (Henderson).—Broad petals, deep yellow, marked bronze.
Temptation (May).—Cream-white, tinted pink; late.
The Tiger (Henderson).—Incurved; old gold and deep red.
The Tribune (Pitcher and Manda).—Japanese; long drooping petals, colour soft primrose.
Truth (May).—Twisted petals, deep ochre-yellow.
Turban (Spaulding).—Japanese reflexed; long petals, red-bronze, reverse gold.
Valentine (Spaulding).—Chinese reflexed; yellow, lower petals shaded bronze.
Walter Hunnewell (Spaulding).—Japanese; large blooms with broad petals, colour bronze-yellow.
Wang (May).—Broad petals, clear white.
W. G. Newitt (Hill).—Long drooping petals, pure white.
White Gem (May).—Broad petals, clear white.
Whitstone (Pitcher and Manda).—Reflexed; white.
W. J. Palmer (Pitcher and Manda).—Japanese reflexed; bright buff-yellow.
W. N. Rudd (Hill).—Pale lavender-pink, long petals.
Wyndmoor (Spaulding).—Japanese; large blooms, rich chestnut-red, brighter than W. W. Coles.

C. HARMAN PAYNE.

The drought.—Beyond local rainfalls, often as destructive in their volume and force as they are refreshing, there has been no variation in the

nature of the weather that has continued for some three and a half months, and there is, while I am writing, no prospect of change; so far from that being the case the heat is intensified. How much such a season as is the present compels us to recognise the immense value of water in gardening. It is true that communities must have elaborate systems of drainage, and the drains must be flushed from time to time, also that such drainage compels much ordinary use of water that seems to be waste. But that so far as utility is concerned nearly all this sewer or drainage water runs to waste there can be no doubt. Land that could be occasionally flooded with sewer water during the present drought should be productive beyond precedent, because of the great wealth of sunshine, and happy are those localities where sewage is so utilised. We pour into the sea enough of water, even if called sewage, to moisten abundantly hundreds of thousands of acres. What a boon would this be now if it could be poured amongst the orchards of our metropolitan area, or amidst the vegetable crops which now are becoming literally valueless from the drought. It was not so many years ago when a dry spell of weather prevailed that all sorts of suggestions as to the provision of reservoirs for water storage were made, few of which were ever acted upon. Only a reservoir of enormous dimensions could satisfy for one month the present needs of a farm of 500 acres, but a store of moderate dimensions might do much to render gardening more successful than it can be said to be just at present. We are now seeing in all directions crops failing. Happily all our established trees and shrubs suffer little, but newly-planted ones do much, and the surface crops must soon be exterminated.—A. D.

FLOWER GARDEN.

THE ROCK GARDEN.

WATER IN THE ROCK GARDEN.—V.

(5) THE BOG GARDEN.

As a pond should naturally occupy the lowest level in the rock garden, so should the bog bed have the next lowest position. Though we may have picturesque rock gardens without either a pond or bog bed, it cannot be denied that both form a very desirable addition. The bog bed will enable us to enliven the scene with a number of charming plants, which, though not strictly of an aquatic nature, love, nevertheless, an abundance of moisture, such as many *Cypripediums*, *Primulas*, *Dodecatheons*, *Pinguiculas*, the *Bavarian Gentian*, &c. In small rock gardens containing neither pond nor streamlet, owing, perhaps, to scarcity of water, it may often be the case that the comparatively small quantity of water required for a bog bed is easily obtained. Sometimes even a bog bed might be made, without introducing any water artificially, by utilising only the natural surface drainage of the surrounding land, but as this naturally would be fluctuating, an additional soaking would be required at least occasionally. In many cases the low part of the ground where the bog bed should be might be in itself of a swampy nature, and if so, very little labour will be required to turn such a spot into a picturesque bog garden.

Though the term "bog bed" might be suggestive of a formal bed, there should really be no visible hard-and-fast outline in the rock garden, and the bog bed should be amalgamated with its surroundings in such a way as to make it absolutely impossible to discern its real shape or extent. It is not at all necessary that there should be only one bog bed in

a rock garden, but we might have a number of them, and in different positions regarding light. Many of the moisture-loving plants prefer a sunny position, while others delight in shady nooks, and the requirements of the plants to be grown must therefore be our first consideration.

I will briefly discuss the merits and the practical construction of three different kinds of bog beds, viz. :—

- (1) Bog beds without cement.
- (2) Cemented bog beds.
- (3) Bog beds partly cemented.

(1) BOG BEDS WITHOUT CEMENT

are specially to be recommended when the water supply is an unlimited one. If in connection with a pond fed by a streamlet or waterfall, so much the better. The overflow water of the pond can then be utilised for feeding the bog bed, or if the water should only be running occasionally, a short pipe fitted with a regulating tap may be let into

advantage in rock gardens on a small scale, where the supply of water would be obtainable only through a small pipe. The cemented bog bed is best described as an irregular underground pond made of cement concrete and filled with soil as well as with water. A depth of about 12 inches to 15 inches should be quite sufficient. Besides being fitted with a supply pipe and tap, so arranged as to be within easy reach (though hidden from view), it should have an overflow and an outlet pipe fitted with another tap for completely emptying the whole at will. If the bed is of large dimensions it would be well to arrange for stepping stones here and there to ensure easy access to the plants. These stepping stones must be fixed on a solid foundation, but it is not at all necessary that they should rest directly on the bottom of the bed. When space is limited I often use for this purpose thin flat stones elevated and supported at each end by a miniature pillar of bricks and cement, thus forming a little bridge, as it were, and admitting of the space between the little pillars and beneath the stones being filled with the proper



A bog garden.

the side of the pond and connected with the bog bed. This arrangement would have the advantage of enabling us to keep the water supply under perfect control. The practical construction of such a bog bed is simplicity itself. All that is necessary would be to dig a pit of the desired size about 18 inches deep, spreading at the bottom a layer of porous stones, brickbats and a little charcoal, and covering the same with solid pieces of peat. Peaty soil, mixed with a little leaf-mould, Sphagnum Moss, sand and broken stone, is then added till the pit is filled up. A few larger stones are then placed judiciously, partly with a view to effect and partly to give shade or shelter to the plants to be grown by their side. If the ground is a heavy clay, the bottom of the pit must be drained to prevent the water becoming stagnant; but if the land is of a moderately porous nature, the water might be allowed to soak away naturally through the sides and bottom of the bed thus prepared, and the influx of water may be regulated according to the facility of drainage.

(2) THE CEMENTED BOG BED.

Though at first involving a little more expense, this kind of bed will be found of great

soil. The filling in of a bog bed constructed on this plan would otherwise be the same as the kind previously described. That every trace of cement-work would be hidden by soil, stones, or plants goes without saying. One great advantage in this bed is that the water supply and drainage can be regulated in the simplest manner by the mere turning of a tap. During a wet winter season the bed could be easily drained quite dry if that should be desirable for the plants.

(3) THE PARTLY CEMENTED BOG BED.

This is a form which I have used with great success when constructing rock gardens. The advantage I claim for it consists in the facility it affords for providing a graduated moisture, which makes it possible to grow plants requiring different degrees of humidity in the same bed. My plan of procedure is as follows: First of all a bog bed is constructed after the manner described above under the heading of "Bog Beds without Cement," but instead of having the sides more or less upright they are kept gently sloping. A winding trench is then excavated through this bed and secured with cement concrete in a similar manner to that described in the chapter devoted to stream-

lets. This water-tight trench need not be more than a foot wide and 6 inches or 8 inches deep when completed. The cemented sides should be level, so that when filled the water would flow evenly over the sides and into the not cemented parts of the bed, producing different degrees of moisture between the deep portions and the sloping sides, from which the water would drain away naturally. Before the water is admitted the trench is filled with loose stones and brickbats, and is then bridged over with large pieces of peat and covered with a few inches of suitable soil. It is then levelled so as to show no visible distinction from the rest of the bed. As soon as the trench is filled with water, however, the latter will rise by capillary attraction not only through the pieces of peat, but also the soil above it, showing even on the surface of the soil the course of the water-trench beneath. But if the soil is filled up to such an extent that the rising water cannot be seen on the surface, it would be well to mark the course of this underground trench with a few sticks projecting through the soil, to guide us when planting and enabling us to put all plants requiring an extra degree of moisture directly over the water-trench where the roots could help themselves to the liquid below just as they please. If this trench is fitted with a plug and waste pipe (directed into another part of the bed) so that all the water can be emptied occasionally, stagnancy will be prevented and the plants are sure to flourish. The engraving gives an excellent idea of a bog garden.

In concluding my essay on water in the rock garden, I may mention another method in the application of water, viz., for moisture-loving plants growing on a steep slope where the forms of bog bed just described would be impossible. In such a case an ordinary lead pipe a few inches underground and perforated at intervals will be found exceedingly useful, and may be regulated so as to supply a very small, but constant stream trickling slowly over rocks and soil throughout the summer months.

Exeter.

F. W. MEYER.

(To be continued.)

Pentstemon spectabilis (G. Soaper).—This was introduced by the Messrs. Low, of Clapton, many years ago from Mexico. The plant grows between 18 inches and 2 feet in height, the flowers being of a purplish violet shade, borne in branching panicles.—W. H. G.

Old plants with new names.—*Lychnis flos cuculi* plenissima semperflorens was sent out last year by a Continental grower as a startling novelty, but we cannot see any difference between it and the old *Lychnis f. c. plena*. So many old plants are now being sent out under new names at high prices, that it is time one or other of our societies took the matter in hand and endeavoured to put a stop to such practices. Apart from the expense, it is very annoying after growing a plant for several seasons to find that the extra time and care have been expended on something already in stock or, may be, discarded. If plant buyers would refuse to notice a novelty until it had been "Hall marked" this trouble would soon vanish.—W. CLIBRAN AND SON, Altrincham.

Ornithogalum pyramidale.—Mrs. Earle writes from the Woodlands, Cobham: "It may interest you to hear how I cultivate in a very hot dry sandy soil the *Ornithogalum pyramidale* figured in THE GARDEN of April 23, 1892, and which is so very seldom seen in gardens, probably because it degenerates, as it did with me if left alone, and then it seems hardly worth growing. If fine spikes are thrown up, this is a most satisfactory flower, as it travels well and every bud comes out in water just as well as if left growing—a very

useful habit. I take up the bulbs about the end of June, pick out all large ones and dry them well in a box. The smaller ones are planted in rather a shady situation to grow on for another year. The large bulbs are replanted in beds where they are to flower in very rich soil and mulched again in spring when they begin to come through, and kept well watered in dry weather. The size of the flower-spikes makes the trouble quite worth while. Whether in strong moist soils it would require this attention I cannot say."

Pentstemon humilis (*H. Soper*).—This is a perfect gem. The flower is particularly pleasing, the slender tube being white, tinged with a shade of lilac, and the spreading limb bright blue. This plant comes from the Rocky Mountains, from whence it was introduced by the Messrs. Backhouse, of York, many years ago. The sender says his plants are some 9 inches or 10 inches high, but we are told that in a wild state it is no uncommon occurrence to see it a foot or more high. It is a superb plant for the rock garden.—W. H. G.

Lilium elegans in variety.—The forms of this Lily are worth a note, as they are in full bloom, and, grouped with quite dwarf shrubs, the flowers are effective. But they are useful also for pots, and the dwarf kinds are especially suitable for this treatment. This note is prompted by a collection we noticed the other day in bloom—some in pots, others in the open. *L. elegans* is often called *L. Thunbergianum*, and its diversity of habit, also variability in the colours of the flowers, increase its interest. There is a large number of varieties, and one of the best is called *alutaceum*, which does not grow more than 1 foot in height, the flowers large and delicate apricot in colour spotted with black. This is a good kind for growing in pots, and also worthy of mention is *Prince of Orange*, the flowers of which are more of an orange shade. These dwarf varieties when planted amongst low shrubs make a striking picture, the flowers standing out in bold contrast against the leafage. A pleasing arrangement may be thus made and at little expense. There are many beds of shrubs which present a monotonous aspect through a want of colour. The beds want brightening, and this is gained by such Lilies as the forms of *L. elegans*. *Armeniacum* is late in bloom, the plant growing about 18 inches in height, the flowers rich orange-red in colour. Very dwarf is *bicolor*, the flowers apricot shot with scarlet, and then one may select such a variety as *Van Houttei*, the flowers of which are crimson. There are many other handsome kinds, quite a list, and all very distinct from each other. Besides planting these dwarf Lilies in beds filled with shrubs, they may be used to lighten the margin of the shrubbery or in the rockery. Groups of them in the border are also of value. This type of Lily is grown sparingly in gardens. It is not often one sees the many very dwarf varieties of bright distinct colour such as those mentioned. When in pots they are useful as a margin to groups or for the greenhouse.

A note on Campanulas.—Those who care for this beautiful family of plants will find a large number of species and varieties in bloom on the rockery at Kew. A very charming picture is produced by masses of the little pale blue-flowered *C. pusilla* against Moss-covered stones. This Bell-flower has quite established itself in a shady, moist corner, where the creeping Balearic Sandwort and hardy Ferns luxuriate. Springing out from between the stones the colonies of pale blue flowers have a great charm. The deep blue *C. pulla* is also succeeding well, and this species is exquisite in a large shallow pan. It used to be grown thus in the Chiswick Gardens and was always admired. *C. garganica hirsuta*, *C. persicifolia*, *C. excisa*, a break of feathery leafage, relieved by light blue flowers, *C. Portenschlagiana*, and many others are of note. Few plants are more charming on the rockery than these Campanulas, and they look well sending their flower-laden shoots over the surface of the stones, or hanging down from a ledge. In light soil and moderately open position they succeed well. Insufficient use is made of the

great and diversified family of Campanulas for the garden, and such kinds as *C. fragilis* and *C. garganica* are excellent for filling baskets suspended in the window. One sees them often in cottage windows blooming with great freedom.

HARDY PLANTS AND ALPINES AT THE TEMPLE SHOW.

OF course, as in every thing, there are differences of opinion as to the quality of the exhibits at this great show of the Royal Horticultural Society, but there can be no difference of opinion as to the quantity, as Mrs. Malaprop says, "Capparisons are odorous," and it seems somewhat invidious perhaps to compare this show with its predecessors; but, as far as my judgment goes, there were points of inferiority, for although there was a beautiful display of Orchids, the grand specimens which attracted everybody's notice last year were absent, while the pot Roses were decidedly inferior. This was entirely owing to the extraordinary weather we have had during the last two months; but of its superiority in one class there can be no manner of doubt. The large collections of hardy and herbaceous and alpine plants from all parts of the country were an exhibition in themselves. It is a far cry to Aberdeen, but from thence Messrs. Cocker and Son sent an admirable collection, while from the far south (Christchurch, in Hampshire) Mr. Prichard brought a fine collection. Then there were others from Backhouse, of York; Milmead Hardy Plant Nursery, of Guildford; Barr and Son, from Thames Ditton; Ware, from Tottenham; Paul and Son, from Cheshunt; Harkness, from Bedale, &c. Two questions force themselves upon one's consideration: firstly, are these very large collections, in which sometimes the same plant is repeated half-a-dozen times over, desirable? To me they seem to be confusing. What amateurs want is the opportunity of seeing in good condition the plants which they wish to add to their collections, and one's head gets confused by the numerous specimens of the same plants when one good one would have been sufficient; but, secondly—and arising out of this is the question which has recently been mooted in these columns, viz., whether beauty of arrangement gives the exhibitor an advantage over another who is indifferent in this matter—can anyone after seeing the exhibits of Messrs. Backhouse, of York, and the Milmead Plant Nursery have any doubt on the subject? In comparing Messrs. Backhouse's with theirs of last year, I think there was a falling off, probably owing to many of the plants utilised then being now, in consequence of the early season, past. I think, too, the Firs which were placed behind it were a mistake. It would have been much better if a few larger pieces of rock had taken their place. On the other hand, the Guildford Hardy Plant Nursery Co. certainly advanced in tastefulness of arrangement on their former exhibits; while in many of the other exhibits, the crowding together of the blooms and plants considerably detracted from their interest.

It would be almost impossible, and certainly wearisome to your readers, to enumerate the various subjects exhibited in all the collections. It must be borne in mind, too, that all these were from growers for sale; in fact, with the exception of a few members of the council—Sir Trevor Lawrence, Baron Schroeder, Mr. Crowley and Mr. Heywood—this characteristic marked the whole show, which was essentially a trade show. Taking, then, the two principal exhibits of alpine plants, Messrs. Backhouse and Son had in their collection *Lithospermum graminifolium*, Grass-like foliage, with bright blue, bell-shaped flowers on stems 4 inches to 6 inches high; *Saxifraga McNabiana*, one of the most beautiful of all the tribe, with white flowers delicately pencilled; *Primula sikimensis*, bright yellow; *Aquilegia alpina*, blue and white, the dwarfest and best of this pretty genus; *Anthericum liliastrium giganteum*, hardly to be considered dwarf enough for a rockery; *Daphne Cneorum*, a dwarf and fragrant *Daphne*, rosy pink,

delightfully scented; *Oxytropis pyrenaica*; *Armeria caespitosa*, a rare alpine gem, very minute dwarf foliage, with large showy heads of delicate rose flowers on stalks about 2 inches high. Another very dwarf and beautiful alpine is *Silene acaulis* with its Moss-like foliage, with bright pink, rose, or crimson flowers; it is, however, one of those plants which puzzle many of us. *Silene pusilla* with white flowers; *Achillea rupestris*, very dwarf and pretty species; *Azalea rosæiflora*, a dwarf shrubby habit, with double soft rosy salmon-coloured flowers; *Cypripedium acaule*, a North American Lady's Slipper; *Cypripedium Calceolus*, one of our native Orchids, and not very easy to manage; *Dianthus neglectus*, a pretty alpine Pink about which there is some dispute, and I believe M. Henri Correvon, of Geneva, asserts that the true *neglectus* has not yet been introduced to England. However that may be, one gets very different plants from different growers. *Dianthus alpinus* is one of the most charming rock plants we have, its dwarf, close foliage completely covered with large rosy pink flowers from 1½ inches to 2 inches in diameter; *Saxifraga lantoscana superba*, a fine plant much superior to the type, with long panicles of white flowers; *Aster alpinus albus*, a dwarf and pleasing variety of the alpine Aster; *Ramondia pyrenaica*, very beautiful, but the plant was a little past its best; the white variety forms a pleasing contrast; *Campanula garganica alba*, suitable plant for running over stones and rock-work; *Myosotis alpestris*, a dwarf variety of Forget-me-not. Unfortunately, it is difficult to keep this and other dwarf Forget-me-nots true in character when brought into cultivation, as they become more rampant and lose their dwarfness. *Gentiana verna*.—This lovely alpine was shown in good condition notwithstanding the forward character of the season; with me in the south it would have been out of flower long ago. *Gentiana bavarica*, somewhat similar to the preceding, but a little deeper in colour, dense in foliage, and flowers somewhat later. And last, but not least in beauty, though perhaps least in size, is that crux of all growers of alpine plants, *Eritrichium nanum*, smallest of all the Borage-worts, flowers of a brilliant sky-blue, not unlike the alpine Forget-me-not, but larger. It is a native of the high Alps, and is one of those plants which do not seem to accommodate themselves to lower localities. I have never seen it successfully grown by any amateur after its first year of introduction, and very few growers for sale seem to care to venture on the risk of growing it.

In the collection from the Guildford Hardy Plant Nursery were *Atragene alpina*, *Androsace glacialis*, a beautiful member of this charming alpine family—a synonym of *A. alpina*, purplish rose-coloured flower and dwarf in habit; *Ramondia pyrenaica alba*, *Saxifraga longifolia vera*—the queen of all Saxifrages, and these fine plants are specimens of the grandest stock of them that I have ever seen; *Pinguicula grandiflora*, the great Irish Butterwort, most lovely blue flower, but being essentially a bog plant, most of us find it very difficult to manage; *Gnaphalium leontopodium*, the celebrated Edelweiss of the Alps, is one of those plants which seem to accommodate themselves fairly well to lower altitudes, and most visitors who come to our gardens are very much astonished at seeing it grow so well; *Veronica glauca cerulea*, a bright sky-blue member of this very numerous family; *Anemone alpina*, a member of the family rarely seen in gardens, sometimes tinted with blue externally; *Dianthus superbus*, *Sempervivum Powellii*, *Cypripedium spectabile*, *Silene alpestris*, very pretty snow-white *Campion*, *Dianthus cruentus*, very bright flowery red; *Heuchera sanguinea splendens*, a very fine variety of this North American plant. Close to these was a fine plant of *Primula Reidi*, one of the most beautiful, and certainly the most fragrant, of its tribe. This was exhibited by Mr. G. F. Wilson, of Weybridge.

I had intended to have added to these observations some on herbaceous plants, but as I have only alluded to alpine plants, and my remarks have run out to a sufficient length, I should prefer giving them another time. DELTA.

FLOWER GARDEN NOTES.

BORDER CARNATIONS.—These are so rapidly growing in favour for all gardens, whether large or small, that no apology is needed for devoting a lengthy flower note to them at this particular season, especially as there will always be a number of people just starting their culture to whom a few hints may prove acceptable. If one were asked to name the most important factors for securing thoroughly good plants and plenty of flower, the answer would probably be, early and careful layering and close attention to the layers, early planting and suitable soil. By thoroughly good plants, I mean those with plenty of good healthy grass and throwing six, seven, and eight good stout flower-stalks, not poor weakly stuff, weakly in habit, with a few bits of yellow-looking grass that will never furnish good layers and with perhaps one little shrivelled flower-stalk. It is hardly worth growing border Carnations if better results than this cannot be obtained. The wonderful difference in the constitution of different varieties has been previously noted, and only those should be grown that can be classed A 1 in this respect. Very early layering will be possible this year, and the earlier the better; there is nothing like plenty of time to secure abundance of roots. Very much extra soil round the plants is not to be recommended, for high mounds dry out quickly, and the formation of a mass of roots is delayed if the late summer prove hot and dry, and much artificial watering is required. If the present drought continues, I should recommend easing up the soil gently round the plants with a fork, afterwards breaking it down and giving a good soaking of water. Two inches of fresh soil on the top of this will be all that will be necessary. This may consist of one part sandy loam and two parts of leaf soil, with a liberal dose of red sand added. Instructions should be given not to cut deeper than is absolutely necessary and to peg firmly. From the time the operation is performed the soil should not be allowed to get dry, but receive a good soaking every night if the state of the weather necessitates this. I plant out at the latter end of September or beginning of October, the beds being deeply forked and well broken up, receiving as manure a liberal dressing of horse droppings. The Carnation beds will be in another week the best thing in the flower garden. The plants, taking them all round, will average seven bloom-stalks each. I am inclined to think we shall have a brave show. The natural soil most suitable for these plants is undoubtedly a sandy loam, and if this is not to hand naturally, the beds for their reception should be stiffened or lightened as the circumstances of the case require.

Violets for autumn lifting that were planted on a due south or south-east border will want careful watching and an extra amount of attention this year. A good surface mulching and an occasional soaking of water will be highly beneficial; indeed it is doubtful if good plants will be secured this season without a little help of this description. Red spider where locally troublesome is almost sure to be to the fore, for it has a decided liking for Violet foliage, and when this is close on the ground the pest is not easily dislodged. The best plan is to encourage growth as much as possible, and to give the plants a good dipping in some insecticide when they are lifted. Early flowering of annuals spring-sown in the open ground is not likely to be secured this season. Looking through beds of Mignonette sown between Roses and annuals in outlying spots in the pleasure ground, or on slip border for cutting, I find seeds as a rule are only just (June 12) coming through. The floral display in this direction will be late and brief. Many herbaceous things, on the contrary, were in flower, and are over much earlier than usual, and borders of the same will want running through to remove dead flowers and flower-stalks, and to stake anything requiring support. The golden rule in this matter is not to stake any more than is absolutely necessary, and for the present season, with no rough winds or heavy rains to knock the things about, we are able to chronicle a minimum of staking. I have always,

for instance, had to give a little support to such things as *Spiraea filipendula* fl.-pl. and the double Peach-leaved Campanula, but this year the flower-stalks are standing up quite independent of stake or tie. We are likely to have a long Starwort season. *A. amellus* *bessarabicus* was out the first week in June; acris will soon follow, and several varieties of the *Novi-Belgii* section are developing their buds rapidly. I should like to caution any readers who contemplate naturalising Starworts in any outlying parts of the pleasure ground where rabbits are troublesome, that these mischievous animals are very partial to the young foliage, and will nibble it off quite to the ground level. There are not, unfortunately, many things they will not attack at the different seasons of the year—*Rhododendrons* among shrubs and *Daffodils* in flowers being two exceptions. I have never known them meddle with either the flowers or leaves of *Daffodils*. There must be something in the "flower of spring" to which they have a strong objection.

Claremont.

E. BURRELL.

THE DELPHINIUM.

DESPITE the drought, Delphiniums are blooming very finely indeed this season in gardens where the soil is not too light. I have a line of seedlings in a border of somewhat heavy loam with a low concrete wall behind the plants. This wall, shading the roots from the sun during the hottest part of the day, keeps the soil about them cool, and though the plants have occupied this position for some years, it is remarkable what a strong growth is made and what superb spikes of bloom are put forth. A little rich soil placed upon the surface in early spring is found very useful in assisting the plants to grow strongly. A neighbour of mine who prides himself upon his Delphiniums finds it advantageous to dust a little soot upon the surface about the roots as the growth becomes strong, as in addition to its being a valuable fertiliser, slugs and that class of vermin are kept from being troublesome. He makes a point of cutting away the flowering spikes as soon as they have become shabby, and by giving the plants two or three doses of liquid manure they are induced to throw up secondary growths which bloom later in the season. The Delphinium seeds very freely, and as a single spike will produce a great quantity, it is obvious that some amount of exhaustion comes to the plants if they mature the whole of the seed they produce.

There are no handsomer border flowers than the Delphiniums, and though blue is the prevailing hue of colour, yet the shades are extremely varied, and there are other tints in parts of the flowers. We have to thank Messrs. Kelway and Son, of Langport, for what they have done in the way of the improvement of this noble perennial, as year after year they bring to London collections of spikes of their own seedlings so fine in development that they command admiration. The species and their varieties which so charmed us of old have had to give place to the newer forms with their larger flowers and pleasing combinations of colour. And yet the old large blue *D. formosum*, with well-formed, shell-like, dark bright blue flowers with white centres can still hold its own, and it is also useful, apart from its beauty, for making a foreground to taller growing varieties because of its dwarf growth. Only recently I saw in a cottage garden in Essex a large clump that had probably occupied the same position for years. Roses, Pinks, and such things were but poor objects owing to the drought, but the Delphinium shone with a lustre peculiarly its own despite its surroundings.

The Delphinium, to be seen in its best character, must be liberally cultivated. It is found to flourish in a rich deep mellow loam, and when left alone for a few years very strong shoots are made, and they, if helped by mulchings of good manure in autumn and spring, bloom with great freedom. The Delphinium is frequently grown for exhibition, and it is the practice with some to lift the plants every two or three years, manuring the ground and replanting. This produces a strong growth and large and handsome spikes of fine colour, though some of the handsomest bunches of Delphiniums set up for show purposes have been composed of lateral spikes when at their best. In a time of drought, mulching and watering are highly beneficial. It is the custom to increase fine varieties by division of the roots, and in order to get the material out of which to make cuttings, the flower-spike should be cut away, this promoting growths from the ground. By removing these with care, each having an appropriate heel, and placing them singly in pots of fine soil, keeping them close for a time in a cold frame and occasionally sprinkling overhead, the cuttings soon make roots. When rooted, they can be planted out in a prepared bed, or if extra strong plants are required, they can be shifted on into larger pots and so grown on into size. Seedlings can also be raised by taking seeds from a few of the best varieties and sowing them as soon as ripe in boxes filled with a sandy compost. Perhaps the length of time required for the seeds to germinate deters many from attempting to raise seedlings, as the seeds will sometimes remain in the soil a whole year before they start into growth. The pans or boxes in which the seeds are sown should be placed in a cold frame and the surface of the soil kept moist as required, and when the plants have grown large enough to bear it, they should be transferred to a bed in the open to grow on into blooming size.

R. D.

Fragrance of Pæonies.—It is not customary to class the herbaceous Pæony among sweet-scented flowers, but many of the varieties are very much more fragrant than some Roses and Carnations. Some are quite delicately perfumed, and it is curious that some of them almost exactly mimic the queen of flowers in this respect. I gathered lately a bloom from a light pink variety, the name of which I did not know, and the odour was so much like that of *Gloire de Dijon* Rose that with closed eyes it was almost impossible to detect the difference. I think it doubtful if the fragrance of this extremely showy and very hardy plant is generally appreciated. Pansies give out a refreshing odour, which is most strongly marked when a shower of rain comes after some days of dry weather, or early in the morning after a still warm night.—J. C., *Byfleet*.

Lilium bulbiferum.—This is a very old garden Lily, but at the same time by no means a particularly common one. It belongs to the erect flowered section, and its immediate allies are the Orange Lily (*L. croceum*) and the group of different forms classed under the collective name of *L. davuricum* or *L. umbellatum*. *L. bulbiferum* grows 3 feet or 4 feet high, while the flowers, instead of being arranged in a close compact head, as in most of the forms of *umbellatum*, are disposed rather in a deltoid raceme. The flowers are borne on long stalks, so that each individual bloom is almost if not quite clear of its neighbour, and in a vigorous specimen the head of flowers often forms quite a broad pyramid. The colour of the flower is a warm orange-red, a very pleasing and attractive tint. The specific name of *bulbiferum* is derived from the small bulbils which form in the axils of the leaves, especially towards the

upper part of the stem, this feature being present in very few Lilies. The most pronounced in this respect are this Lily, *Lilium tigrinum*, and the comparatively new Indian *L. sulphureum*, while *L. umbellatum* will also produce a few bulbils at times, especially if the flower-stem has been broken off near the top. *L. bulbiferum*, which is a native of Central Europe, flowers in June, at much the same time as *L. umbellatum*, while in addition to the above mentioned points of difference between the two, it may be noted that blooms of *L. bulbiferum* retain their freshness longer than those of the others—certainly a desirable feature. In any mention of these erect-flowered Lilies the Orange Lily (*L. croceum*) must not be passed over, as its rich reddish orange tint is very bright and effective, and as a rule it does not commence to bloom till the flowers of *L. umbellatum* and *L. davuricum* are all over, though in the case of *L. croceum* some forms bloom certainly earlier than others. In addition to the features mentioned above it is one of the cheapest of Lilies, and will thrive in an open sandy loam if allowed to remain undisturbed. —H. P.

NOTES ON HARDY PLANTS.

Cistus algarvensis.—This, by many supposed to be among the tenderest of the Cisti, has again (the same plant) come through the winter safely with me, without the least protection, on the high part of a bit of rockery. Perhaps there is something in the fact that it has its roots in dry stuff largely impregnated with the crumbling portions of Derbyshire "tufa." Anyhow I have had plants growing well during summer in different conditions, and they used to die without exception during winter excepting this one. It may or may not be the position or the soil of the present plant that has helped it to live through the winter, but I think there is something in the tufa idea, because not only has the plant endured more cold, but it has assumed a more stunted, rugged, or short twiggy habit than is generally the case, and this change of habit I should not much hesitate in attributing to the excess of crumbling limestone. The observation may be taken for what it is worth, but for my own part I have concluded to grow Cisti with plenty of lime at the roots. It may not be equally well adapted for all the kinds, but the most that could happen would be no worse than our general experience of Cisti dying off in winter.

Saponaria ocymoides splendidissima.—A plant under this name has been largely distributed, and it has been claimed for it that it is distinct and of better (presumably darker) colour than another variety that had preceded it by some years under the name of *S. o. splendens*. This plant, even the type, happens to be a great favourite here, and every variety offered in commerce has been tried. The name *splendidissima*, as applied to the plant, is a misnomer. It is not the biggest or the darkest flower that has been produced by seed, and it does not differ in any perceptible degree from the supposed previous kind called *splendens*. It is well known that the flowers of this *Saponaria* vary very much in colour, according to the position and soil in which the plants may be grown. I have seen plants with larger flowers of more crimson colour than either of the two that have been dubbed with such pretentious names. I think it questionable if any good can come of applying names with such superlative meanings to flowers with but slight distinctions, and certainly it is liable to lead to confusion when such a name as *splendidissima* is applied to seedlings from such variable species as *Saponaria ocymoides* is known to be.

Eriogonum sub-umbellatum.—This is a smaller plant than *umbellatum*, with a less stiff habit, more twiggy and spreading. It is, however, a shy bloomer, but for my own part I do not mind that, for in the case of this plant there are charms in the absence of flowers. Its somewhat spatulate leaves, of but an inch or so long, are set on beautifully coloured, wiry stems. From spring onwards the leaves are of many tints, the young ones being greyish green on the upper sur-

face and almost white on the other side. Owing to the irregular way in which they are posed, both surfaces are well displayed. When the leaves become matured, they are more yellow, and, still later, terra-cotta coloured, so that altogether the pretty tufts of but a few inches high are bright and beautiful objects, even without flowers, through the summer. Even in winter, owing to the persistency of the foliage, the plant is just one of those subjects that contribute to make the rockery look warmer and more effective in winter than other parts of the garden.

Cotoneaster congesta.—In a certain way this is the best shrub I know for furnishing the irregular surfaces of rockery stones. From some cause or other, its new growths seek to develop in continuous contact with stone; so much so, that I have seen it take sharp corners or right angles in the neatest possible fashion. It has a very crowded habit, slow-growing, and it may not increase more



Veronica pinguifolia. (See p. 519.)

than a few inches in its spread during the first two or three years. Afterwards it grows more quickly, but it never makes a big shrub like any of the microphylla varieties, and being evergreen and producing showy fruit into the bargain, it may be judged how useful it will prove on rockeries.

Astragalus hypoglottis albus.—This is a characteristic rock plant. Just now it is covered with its white clusters of blossom, but slightly raised above the flat mats of herbage. Certainly it is one of the root-runners, but only in a moderate degree, never to the extent that you do not know where you may or may not find it. I think it would please most people; at any rate, I have noticed that most people admire it here.

Oncocyclus Iris.—The delightful paper of Mr. Ewbank leaves hardly anything more to be said on the culture of these. He has made the subject attractive and the cultural treatment plain. Still, somehow, I for one am not tempted,

because, off and on, I have managed to grow most of the older kinds as I think to perfection, so far as growth is concerned. But even an Iris of this most aristocratic section is not a thing to rave about unless it deigns to flower sometimes. To manage to grow the plants well only intensifies the disappointment when flowers fail to appear. Even in one of the sunny States of North America a friend of mine says that it is "no great trick to grow these plants, but there is no certainty as to flowers." This is precisely my experience, and if our esteemed friend in the Isle of Wight has to adopt all the special means that he describes in a climate where he has three times more sunshine and three times less rainfall than most of us in the north, and seeing that a maximum of sunshine and a minimum of rainfall are favourable to these Irises, I fear many of us could not have well-grounded expectations for success. It is only natural that there should be some plants that cannot be well grown in certain climates, and so far as Yorkshire is concerned, and perhaps the majority of the counties, I fear the *Oncocyclus* Irises must be included. J. Wood.

Woodville, Kirkstall.

Pink Her Majesty.—The blooms of two plants of this which flowered last year annoyed me by splitting at the calyx, and the same thing has happened this season. Mr. Crook seems to be more fortunate in this respect. The flowers have not much scent. —E. C. Buxton.

Lilium pomponium.—Among a showy group of cut flowers exhibited by Mr. Ware at the Forestry Exhibition, Earl's Court, on June 14, were some good examples of this Lily, which to the eye formed a very attractive feature, but their heavy disagreeable smell was so overpowering, that the group would have been far better without them. By no stretch of imagination can the smell of this Lily be termed pleasant, but some of the others that are really agreeable when first expanded, and not too numerous, become after being open a few days (especially in a confined atmosphere) very unpleasant. This fact should be borne in mind more often than it really is where Lilies are employed for decorations. —H. P.

Geranium balkanum.—In reference to the note of "Senex" on page 514, I must say that, from a gardener's point of view, the plants which I raised from seed three years ago as *G. balkanum* are very distinct in habit from, and superior to, the plant I have grown for at least a dozen years as *G. macrorrhizon*. Not being able to find any authority for the name, I sent a piece to central authority, and had the name *G. macrorrhizon* given. But, however similar the characters may be, the new form is much dwarfer and more floriferous than the old plant, and a dozen or more now flowering from the same seed packet are perfectly constant in these characters. It is not a first-class plant, the dull purplish red of the flowers being against it, but in other respects the habit is excellent—though I wish to find out who gave it the name of *balkanum*. —C. WOLLEY DOD, Edge Hall, Malpas.

Some choice Dianthus.—A box of blooms of forms of the garden Dianthus has just been forwarded by Mr. John Forbes, Buccleuch Nurseries, Hawick, N.B., by way of showing what pretty things are available for border decoration. Dianthus Cockscumb is a very fine form of the double Sweet William, large, very full, and bright in colour, being of a pleasing magenta-crimson, a capital border plant. Talisman is a pale coloured double Sweet William. Diadem is a large single Sweet William, white centre, crimson zone, and a broad, stout, smooth white margin. Satellite is

something in the same way, but smaller. *D. Clove* Pink is a good-sized flower of a deep pink, much fimbriated, and highly attractive. The collection included *D. alpinus*, *D. neglectus*, a single form of *D. plumarius*, and examples of Mrs. Sinkins, Her Majesty, and *albus magnificus*, three white Pinks, quite distinct, the last named large, pure, full, and deeply fimbriated. Most interesting was a collection of mule Pinks, which included *Diana*, pale rosy purple; *Miss Paterson*, pale lilac-rose; *Napoleon III.*, bright crimson, very fine; this makes a charming bed, but it does not succeed well in a dry position and in light soil; *Compactus*, bright pale rose, flushed with crimson, very good indeed; *Fettes Mount*, soft bright pink, large, and very fine; and *Marie Pare*, pure white, a collection that anyone with a small garden might grow and find full of interest. The ordinary Pinks mentioned above are propagated by means of cuttings or pipings taken at this season of the year, and if inserted in pots of sandy soil, a layer of sand being placed upon the surface before the cuttings are put in it, well sprinkled overhead, and then placed under a hand-light, they strike in a few weeks. The hybrid *Dianthus*es can be increased by means of side growths, which root readily in pots of sandy soil or in a bed in a cold frame. As a rule, the fine double Sweet Williams seed very sparingly indeed, if at all, and thus cuttings must be fallen back upon as a means of reproduction.—R. D.

NOTES OF THE WEEK.

Aerides expansum Leoniae is in bloom in the Kew collection. It is a handsome form, the flowers large and white, with the bold lip striped with deep rose in the centre.

Yuccas at Bitton.—We regret that owing to a mistake the group of *Yuccas* figured in THE GARDEN was not credited to its true home, Bitton, where *Yuccas* have long been well done. We refer to the engraving published in THE GARDEN June 3 (p. 445).

Chamærops Fortunei in the open air.—I have in my garden a fine Palm (*Chamærops Fortunei*) about 20 years old, which is out both in the summer and winter. This year it is throwing up a flowering stem and will shortly be in bloom. Does this Palm often flower in this country, as I cannot recollect to have seen one before?—F. D. HALL, *Manby Rectory, Louth*.

Azolla pinnata fruiting.—It may be of some interest to record that *Azolla pinnata* (syn., *caroliniana*) is now fruiting abundantly in a shallow, partially dried-up pond at Mount Usher, Co. Wicklow. It is, I believe, very unusual for it to fruit in Great Britain or Ireland, although it does on the Continent. It has been out all winter, and multiplied to such an extent as to become a great nuisance.—GREENWOOD PIM.

Gladiolus Watsonianus is an interesting type in bloom in the Cape house at Kew. The leaves are long, deep green, narrow and abundant, the flowers produced freely in slender spikes. The colour is distinct, the segments salmon-scarlet, the upper ones marked with crimson down the centre. It is worth a note for its distinctive colour.

Larkspurs.—I do not know if this season has been generally favourable to Delphiniums, but I never saw a finer show than I have had here. I have many very beautiful varieties, and their height has in some cases been over 12 feet, while hardly any are under 8 feet or 9 feet. Some plants have had fifteen to eighteen spikes, each of them with several branches, so that the general effect has been quite striking.—W. D. R. D., *Castle Douglas*.

Strawberries in Derbyshire.—Our earliest dish was gathered on June 7, fully three weeks earlier than last season, the sort being Noble. The fruit was the largest that I have ever seen. My employer told me the flavour was excellent. Crescent Seedling came in a week later, followed by James Veitch, Competitor and President. Waterloo has not begun to colour yet. We have got a

heavy crop of extra large fruit.—T. COCKERELL, *The Gate House, Wirksworth, Derbyshire*.

Luddemaunia Pescatorei is a very beautiful and distinct Orchid in bloom in the Kew collection. The plant is in a basket suspended near the light, and the sturdy spike, covered with brownish hairs, bears upwards of forty flowers, produced close together on the pendent stem. The individual flowers are of rich colour, the sepals shaded with reddish crimson, and the petals, which are smaller, are yellow, the lip of the same colour. It is an Orchid well worth growing for its bold spike and striking aspect.

Achimenes tubiflora.—This we noticed in bloom recently in the stove at Kew, the flowers produced freely on long slender stems, the specific name being most appropriate. The tube of the flower is very long and the expanded portion of the purest white, whilst the leaves are hirsute and deep green. This is an *Achimenes* well worth a place in every stove for the purity of its handsome and graceful flowers. A group of it mixed with Ferns would be charming. Unfortunately, it is only in a place like Kew that one meets with such a beautiful and uncommon thing, but it should be widely cultivated.

Escallonia Phillipiana is one of the most interesting shrubs in bloom now, and it is in full beauty when the majority of shrubs have quite passed their best. A group of this is very beautiful, the slender shoots quite wreathed with clusters of pure white flowers. It is not particular as to soil or situation, thriving in ordinary ground, and in even the atmosphere of suburban districts. The way to get the full beauty of its crowded stems of flowers is to group the shrub. We noticed lately a break of it which was in anything but a congenial spot and too crowded to reveal its true beauty, but the plants were a picture of flowers and graceful growth.

Three Strawberries.—Mr. Allan sends us from Gunton Park his three new Strawberries. Lord Suffield, of medium size and good shape, is a finely flavoured kind. Gunton Park, a very large and showy Strawberry, seems to have a good flavour, but is, we think, too large. Strawberries good in shape, like Lord Suffield, are the best. After all, it is a question of flavour, and that might be as precious in a fruit one half the size of Lord Suffield as in one much larger. Form and natural shape are considerations that should not be wholly left out. Empress of India, too, seems a promising kind, but the value of these can be best got by comparison in the open air side by side with the best kinds already known.

A noble weed (Verbascum Thapsus).—I send you a photograph showing a plant of this growing in the shade in a dry corner. The plant, which has never had any water, is 6 feet 6 inches high.—A GLOUCESTERSHIRE PARSON.

Charming photograph, showing the fine habit of the plant in flower. However, it is not nearly so valuable as the equally hardy and long-blooming *Verbascum phlomoides*, which is a most precious flower, very handsome and large in bloom, rich in colour, fine in form, and with the peculiarity few hardy plants have of blooming the whole summer and autumn. This is abundantly wild in France, and we saw it in great quantity last year in Touraine on rubbish heaps and in rough places.—ED.

The white Antirrhinum.—This is one of the most beautiful flowers of the garden in full beauty at present. A bed of it is charming, and we notice that in all gardens much use is made of this distinct kind. A stock is very quickly raised from cuttings, and the pure white flowers associate well with shrubs. A bed of it may be margined with the deep crimson kind for contrast, or the varieties may be kept apart, one to each bed. There are a great many forms of the homely Snapdragon, but none excel these two, whilst the speckled and bizarre-marked types are not effective, although pleasing in a sense in the exhibition tent. A great fault with many new kinds is their dwarf habit. They are a few inches only in height, and bear the spikes of bloom close upon the leaf-

age. One loses all the grace and freedom of the Snapdragon in this form. Such plants may be adapted for eglings, but they are not welcome.

Cistus laurifolius.—This, introduced from Spain in the year 1731, is the hardiest of the Rock Roses, and there are several specimens in bloom at Kew, particularly near the main entrance from the green. *C. laurifolius* forms a bushy, leafy and rather tall shrub, the flowers of the type large, pure white, with pale yellow stamens in the centre; whilst those of the variety *maculatus* are still bolder, each segment being enriched with a crimson blotch at the base. Both are planted hard by each other, but the variety *maculatus* is the finer and more effective of the two. This Rock Rose is quite hardy here, and the chief requisite is an open, sunny dry spot, not exposed to cold cutting winds. Grouped on the turf, this fine species is very striking.

Romneya Coulteri (the Californian Tree Poppy) at Exeter.—I saw this magnificent Poppy in flower this week at Veitch's Exeter nurseries. The plant is in the rock garden under the south end wall of their New Holland house, where it was planted about two years since, and is now more than 3 feet each way and covered with bloom and bloom-buds. The flowers are about 6 inches across, pure white, with a mass of yellow stamens in the centre. Each petal is frilled the whole depth, and has quite the appearance of a goffered frill. Here also was *Notospartium Carmichaeliae*, very curious and strikingly pretty with its Broom or rather Rush-like foliage and its elegant racemes of small Pea-like flowers. This is planted on the west wall of the same house, where it is perfectly hardy and has for its companions *Carpenteria californica* and *Fremontia californica*, both of which were in full flower about a fortnight since.—W. M.

The drought.—We have suffered greatly in these gardens from the prolonged drought. Red Currants have suffered terribly; nearly all the leaves have fallen off. Black Currants have shed the greater part of their fruit. Two espalier Apple trees in the open and one Pear tree on a south wall are dead. Cauliflowers have all turned in at once. Winter greens of all kinds have to be watered twice a day. Gooseberries are covered with filth. Potatoes look well, and there is a good crop. Onions (spring-sown) are dying off; Tripoli never looked better. Peas look remarkably well. Herbaceous borders are quite dried up; dozens of plants have perished. Bedding plants, especially *Calceolarias*, are going off badly. Dwarf Roses are looking very bad; standards look much better. Climbing Roses on a south wall have been one mass of bloom, especially W. A. Richardson.—THOS. COCKERELL, *The Gate House, Wirksworth, Derbyshire*.

Rose Lamarque in New Zealand.—The September number of THE GARDEN is just to hand in which is a woodcut of this Rose. About five years ago I began to cultivate Roses, and that was one that was sent me. Not knowing its habit, I planted it in the open, where it had only a few blooms, but some grand canes. It was on a Brier stock, and was planted below the bud joint and very soon made roots of its own. It was then placed behind a wooden building 12 feet by 9 feet, which it soon covered, and the first year there were at one time 370 blooms all showing. Then it was removed to the east coast, 150 miles from Invercargill, which is in the south. To-day I had a beautiful bloom for my coat. The season is equal to your November, and from past experience I shall be getting a bloom every week during the winter. It has not been pruned for three years, but had to be cut well back on removal. The soil is a stiff clay. This was removed 2 feet deep and filled in with very old cow manure. Should I think it equal this November to your woodcut, I will send a photo. for you to see what the New World can do.—JOHN W. MEYER, *Evansdale, New Zealand, May 14*.

Delphiniums among shrubs.—The Delphiniums—those varieties with light blue flowers in particular—look well planted amongst shrubs.

A border of conifers and similar things in the Chiswick garden is now very bright through this judicious contrast of colour—deep green foliage against tall spikes of flowers of various shades. The plants have increased to large bold clumps, sending up a forest of spikes as tall as the shrubs themselves, and they remain in beauty for a considerable season.

SOCIETIES AND EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY.

JUNE 20.

THIS meeting was a very full and comprehensive one, the hall being well filled. The Tea Rose show occupied more space than probably upon any previous occasion. When the excessive heat of the past week and the long-continued drought are both taken into consideration, this show is all the more remarkable for its excellence. Orchids, which one might be inclined to think would have prematurely faded, were shown in fairly large numbers, Cattleyas of various kinds being the most prominent of these, and in quite fresh condition. Cut specimens of hardy shrubs, hardy, herbaceous, and bulbous plants were shown in quantity. Fruit was best represented by Cherries in great variety (showing the earliness of the season) and by Strawberries, also in good condition. Melons were not so good, as one might expect, considering the warm and favourable weather for ripening, but some fine Queen Pines were shown, well-ripened fruits, it being now quite a treat to see English-grown examples of this fine old variety. From a cool orchard house were sent well-ripened fruits of Peaches (early varieties). The show of Tea-scented Roses was undoubtedly a very fine one; the flowers were, on the whole, in the finest possible condition both in size and colour. It was particularly noticeable how much superior were the exhibits from the east coast, Colchester and Ipswich being almost invincible, the majority of the best prizes going eastwards, particularly in the trade classes.

Orchid Committee.

No first-class certificates were awarded, but an award of merit was voted to—

CATLEYA WARCEWICZI (GIGAS) VAR. *SANDERÆ*, in which the distinguishing characteristic was the deeper mauve-coloured sepals and petals, the lip also being of a darker shade than in the type. The flowers were only just expanded, and had not, therefore, attained to their proper size, which would be quite up to the average. From Messrs. Sander and Co., St. Albans.

Botanical certificates were awarded to—

DENDROCHILUM FILIFORME.—A fine old Orchid not nearly enough seen, although it was introduced as long ago as 1836 from Manila. Its pale yellow and slender racemes were produced in the utmost profusion upon the plant shown, a cultural commendation being likewise awarded. From Messrs. Sander and Co.

EPIDENDRUM FORGETIANUM, certainly not a showy species, but interesting as a distinct one. The growth is dwarf and compact, the spikes slender, the colour a tawny yellow with darker veins. From Messrs. Sander and Co.

ODONTOGLOSSUM PERUVIENSE, more interesting as a botanical curiosity than for its showy character, the growth dwarf, the spike slender, the flowers small and in colour a light brown and pale yellow. From Messrs. Charlesworth, Shuttleworth and Co., Heaton, Bradford.

LUISIA VOLUCRIS, which in growth much resembles *Vanda teres*, but is more robust. The flowers are small and produced close to the axils of the leaves. From Sir Trevor Lawrence.

LUISIA AMESIANA.—A species with more slender, but similar growth, the flowers greenish yellow

with dark brown lips. From Sir Trevor Lawrence.

HEXESIA BIDENTATA.—Of small growth, not unlike the minor forms of *Maxillarias*, the flowers, small and of an orange-scarlet shade, being produced upon short spikes. From Sir Trevor Lawrence.

Messrs. B. S. Williams and Son, Upper Holloway, had a group of well-grown plants, comprising *Cattleya Mossiæ* in excellent variety, *C. Wagneri*, a beautiful Orchid; *Epidendrum vitellinum*, extra fine; *Cypripedium selligerum majus*, with twin flowers; *C. superciliare*, a fine hybrid with grand flowers; *C. superbiens* and *C. grande*; *Dendrobium Dearei*, well flowered, and *D. Jamesianum*; *Odontoglossum luteo-purpureum*, two fine spikes, and *O. hastilabium* (award silver Flora medal). Messrs. H. Low and Co., Clapton, had a smaller group containing *Disa grandiflora*, good colour; *Cattleya gigas Sanderiana*, extra large flowers; *Cattleya Schroederiana*, *Saccolabium giganteum*, *Cypripedium bellatulum*, with fine flowers, *Phalaenopsis Luddemanniana*, *Masdevallias*, and *Lælias*, with *Aerides Houlettianum*, a darker variety than *A. virens* (silver Banksian medal). Messrs. Lewis and Co., Southgate, sent a group comprising *Cattleya Mossiæ* in excellent forms and *C. gigas*, with *Oncidium macranthum* and several *Cypripediums* (award silver Banksian medal).

In addition, Messrs. Sander and Co. had very superior varieties of *Odontoglossum vexillarium* all in excellent health; one called *superbum* had small flowers, but quite distinct in colouring, a rich mauve-pink pervading the entire flower, with a dark maroon blotch upon the lip, edged with white; another called *Measuresianum* had long spikes with as many as nine flowers, in which the lip of each had a clear citron-yellow marking on a white ground and velvety crimson lines; another had extra large flowers of rich colour. *Epidendrum vitellinum majus* was also shown well, likewise *Cattleya granulosa* (the type with spotted sepals and petals), and a golden yellow form devoid of spots, the lip in both cases being identical. *Sobralia xantholeuca* was also shown; this is a lovely species with its pale lemon-yellow flowers, the lip being darker. It is one of the most beautiful of the whole family. Messrs. Charlesworth, Shuttleworth, and Co. showed *Gramangis Ellisii*, with orange and brown Chysis-like flowers of waxy substance, the spike dense and stout. Mr. Statter, Stand Hall, Manchester, showed *Odontoglossum Wilckeanum superbum*, a fine dark form, and *Cypripedium Alyngi* (of concolor affinity), the flowers forming part of a branching spike, the pouch or lip being white, the rest of the flower suffused and lined with rosy purple on a white ground; this Orchid obtained the first prize and Veitch Memorial medal at the recent Manchester show as the best new Orchid in commerce. Sir Trevor Lawrence had in addition *Phaius Humbloti* with two good spikes, having over twenty flowers and buds on them, a first-rate example, and *Lælia crispilabia*, a small variety with orange lip and pale mauve sepals and petals. Mr. Schofield, Rawtenstall, sent *Lælia Arnoldiana*, which has an affinity with *L. purpurata*, the lip being more of a rosy purple, the rest of the flower a rich mauve. From Messrs. Backhouse and Son, York Nurseries, came *Disa Veitchi* (racemosa \times grandiflora) with richly coloured flowers, a very fine addition. Mr. Norman Cookson showed *Selenipedium caudatum Wallisi*, extra vigorous flowers, with remarkably long tail-like appendages from 18 inches to 2 feet in length, and a pretty small growing seedling *Cypripedium*. From the Botanic Gardens, Glasnevin, came *Aerides virens* (?), so named, but which appeared to be a much darker form than usual. Mr. Chas. Winn, Selly Oak, had *Cypripedium Psyche* (a hybrid of concolor-bellatulum relation), the ground colour a pearly white with dark chocolate markings and spots. In Messrs. Sander and Co.'s exhibit further note should be made of *Cattleya gigas* (Warcewiczii) var. *purpurea*, in which the lip was of an extra dark shade, a purplish crimson, and of *C. gigas* var. *Sanderiana*, a form with extra large flowers, the lip broad and massive; *Pescatorea Klabochorum* was in this group. Mr.

Wells, Bromfield, Sale, showed *Cattleya Mossiæ* delicata, a distinct form, and *Lælio-Cattleya Phœbe*, which has small pale orange sepals and petals and a velvety crimson lip.

Floral Committee.

A first-class certificate was awarded to

CRINUM POWELLI ALBUM, a pure white variety, with large bell-shaped flowers produced in large trusses, distinct and fine. From Mr. Moore, Botanic Gardens, Glasnevin.

Awards of merit were voted to

BORDER CARNATION [HAYES SCARLET, one of the finest pure scarlet Carnations yet seen, the flowers extra large, the form excellent; the petals smooth, the growth vigorous; a decided acquisition. From Mr. Martin Smith, Hayes Common, Kent.

BORDER CARNATION KING ARTHUR, also a fine variety, the flowers a shade or two darker in colour, with a suspicion of relation to the Malmaison family by the formation of the pod, the flowers rather fuller than in the first-named kind. From Mr. Martin Smith.

CALOCHORTUS VENUSTUS VAR. *VESTA*, *C. VENUSTUS ROSEUS*, and *C. VENUSTUS OCULATUS*, three fine and distinct forms of the *Mariposa* Lily, very much admired and exceedingly handsome. The three kinds were shown by M. van Tubergen, Junr., and the two latter by Mr. G. F. Wilson, whose flowers were taken from plants growing in the open border, a photograph of which was likewise exhibited.

TUBEROUS-ROOTED BEGONIA COUNTESS OF CRAVEN.—An extra fine, pure white, double variety, large in size, of full form and good substance. From Messrs. J. Laing and Sons.

TUBEROUS-ROOTED BEGONIA JOHN FRASER.—An exceedingly dark velvety crimson—an intense colour and very full. From Messrs. J. Laing and Sons.

GLOXINIA PRINCESS MAY.—A fine white erect seedling, the flowers large, the habit good, the throat having a faint shading of lemon-yellow. From Messrs. J. Laing and Sons.

CLIMBING ROSE ALLISTER STELLA GRAY, the flowers of which are much like those of *Perle d'Or*. A *Polyantha* variety, this new kind is evidently of vigorous habit and free-flowering, whilst it is quite distinct. From Mr. A. H. Gray, Bath.

H.P. ROSE MERRIE ENGLAND, which has bi-coloured flowers after the style of *Pride of Reigate*, but of lighter shades, being very pretty as a novelty. The flowers are large and the growth apparently free. From Messrs. Harkness and Son, Bedale.

H.P. ROSE MRS. HARKNESS, which, as shown, bore a close resemblance to *Paul's Early Blush*. The colour is a pale fleshy pink, the flowers large, and the petals shell-like in form. One might surmise that it has some relation to *H.P. Her Majesty*. From Messrs. Harkness and Son.

Mr. Charles Turner had a grand group of finely-grown *Malmaison* Carnations in two kinds, the pink and the blush coloured; the flowers were extra large and fresh; with these were plants of *Germania*, still one of the very best of the pure yellow kinds, the flowers also large and fine. With these were some cut examples of *Turner's Crimson Rambler*, new *Polyantha* Rose, evidently cut from outdoor plants; in many respects this was the best exhibit of this remarkable new Rose, as it goes to prove the freedom of flowering with an extraordinary vigorous growth, the old wood of last year being stout and strong, whilst nearly every lateral bore a large truss of flowers, the best of which were all but expanded before the first showed signs of dropping. These growths were 6 feet or more in length, and caused great attraction. Previous exhibits have proved it to be a splendid pot Rose, this showed it to be one of the finest of garden Roses (silver Flora medal). Messrs. E. D. Shuttleworth and Co., Peckham Rye, sent a large display of hardy herbaceous flowers and Roses, the former including choice kinds of *Delphiniums* and *Pinks*, as *Anne Boleyn* and *Mrs. Welsh*, *Gaillardias* in variety,

with Liliams in the same (silver Banksian medal). Messrs. Barr and Son had another of their choice groups of hardy flowers, embracing splendid varieties of Delphiniums, *Hemerocallis Thunbergi*, *Alstroemerias*, *Eryngium giganteum*, *Lilium Washingtonianum*, and other good things (silver Banksian medal). Messrs. Paul and Son showed Roses Charles Gater, a fine dark garden Rose, and Paul's Early Blush, another very promising variety, and two boxes of superb flowers of Her Majesty, large in size and deep in colour (silver Banksian medal). Messrs. W. Paul and Son showed Roses also, and included H.P. Spenser, a beautiful pale flesh-pink Rose, a shade darker than Baroness de Rothschild, and of much substance; also H.P. Clio, rather larger than Spenser, but paler in colour, a promising Rose of vigorous growth and globular form (silver Banksian medal). Mr. C. J. Grahame, Croydon, exhibited cut blooms of H.P. and Tea-scented Roses, extra good for the season; the former included A. K. Williams, Viscountess Folkestone, Heinrich Schultheis and Marie Baumann, all of fine quality, whilst of the Teas, Princess of Wales, Francisca Kruger, Innocente Pirola and Hon. Edith Gifford were the best (bronze Banksian medal). Mr. Tasker, Middleton Hall, Brentwood, also showed cut Cannas, very fine, and some good cut Roses.

Messrs. Sander and Co. showed a fine example of *Aristolochia gigas* Sturtevantii, the flower quite freshly expanded and of extra size, the odour from which is not in any sense pleasant, more particularly in hot weather. With this was *Maranta Leonia*, a distinct species with dark olive-green foliage overlaid with silvery markings and mid-ribs, the reverse of the leaves of a purplish shade. M. van Tubergen, Junr., had three forms of *Lilium Martagon*, Max Leichtlin, Frank Miles, and G. F. Wilson, the last being the most richly coloured. Messrs. J. Laing and Sons had, besides the certificated Begonias, other fine varieties, the best of which were those with traces of B. Pearcei in their constitution, but much more robust; these possessed richly marked foliage that was of itself quite ornamental, the flower-spikes being stout and self supporting with the shades of orange in the blossoms peculiar to this section; this is a fine break in the tuberous section.

From Messrs. J. Veitch and Sons came a fresh addition to the pitcher family in *Heliophora nutans*, to which a botanical certificate was awarded. It has the pitchers after the manner of the dwarf *Sarracenias*, but devoid of the lid, the substance being of greater texture, the growth stout and sturdy; this is an introduction from Roraima, British Guiana. *Drosera auriculata*, a climbing species of minute growth, was also shown—a very singular and interesting plant. The same firm also showed very fine cut specimens of *Notospartium Carmichaelia*, a Broom-like plant with pale lilac flowers, very distinct; also *Escallonia philippiana* from Bolivia, a species having small white flowers densely produced, and *Andromeda speciosa cassinaefolia*, with its pure white flowers.

The prize for Delphiniums, offered by Messrs. Kelway and Sons, was awarded to Mr. Joseph Brutton, Yeovil—Model, Lord Beresford, Lorenzo and Britannia being the finest, all the spikes being very vigorous and branching.

Tea Rose Show.

As before alluded to, the exhibits were remarkably fine and the competition very keen in nearly every class. Finer blooms have rarely been shown. In the amateurs' division for twenty-four singles, Mr. Budd, of Bath, was first, with flowers of average size, but very fresh, the finest being Comtesse de Nadaillac, Boule d'Or, Etoile de Lyon, Marie van Houtte and Souvenir d'un Ami. Mr. Knight, Sittingbourne, was second, being very close to the winner, but not so well set up; Miss Ethel Brownlow, Mme. de Watteville and Innocente Pirola were here finer than in the winning stand. In the class for twelve single trusses were some of the finest Roses of any with nine competitors. Rev. A. Foster-Melliar, Sproughton Rectory, Ipswich, was first, having also in his stand

the finest Rose in the show in Souvenir d'Elise Vardon, a grand flower, very full, and fine in colour; others included Marie van Houtte, Catherine Mermet, Comtesse Panisse, Comtesse de Nadaillac, Anna Olivier, Ernest Metz, Souvenir d'un Ami, Souvenir de Thérèse Levet, Mme. Angèle Jacquier, and Boule d'Or, all superior flowers. Mr. Lindsell, Hitchin, was a close second, but the blooms lacked fulness, Caroline Kuster, Niphetos, The Bride, and Souvenir d'Elise being his best flowers. In the next class, Mr. Grahame, Croydon, was first, Comtesse de Nadaillac, Ethel Brownlow, and Innocente Pirola being the best in a fine stand. Mr. R. Langton, Hendon, was second, eight lots being staged. For six trusses of one kind, Mr. Foster-Melliar was first, again staging Souvenir d'Elise Vardon, all superior blooms. Mr. Mawley, Great Berkhamsted, came in a good second with Innocente Pirola, fourteen exhibitors staging. For six distinct kinds, three trusses, Mr. Lindsell was first, staging very even and richly coloured flowers of Caroline Kuster, Comtesse de Nadaillac, Souvenir d'Elise, Etoile de Lyon, Innocente Pirola, and Jean Ducher, Rev. F. R. Burnside, Hereford, following a good second, eight competing and all showing well. For an arrangement of cut Tea Roses Mr. O. G. Orpen took first prize with a lightly-made and very tasteful bouquet, yellow and apricot shades prevailing, the second prize going to Mr. Bloxham for a neatly-arranged basket.

In the trade classes Mr. F. Cant, Colchester, was a grand first with blooms of the highest order of merit and in the prevailing kinds already quoted, with other good ones added thereto. Mr. B. Cant, Colchester, followed extremely close, and Messrs. D. Prior and Son, also of Colchester, came in a good third. For twelve distinct kinds, three trusses, Mr. F. Cant held his own again with fine blooms, very even and fresh, Messrs. Prior in this case being second. Mr. F. Cant was again first for twelve single trusses with large blooms of fresh and bright colour, Messrs. Prior following extremely close again. This latter firm was first with grand blooms, very large and richly coloured, of *Maréchal Niel*; finer could hardly be produced. The competition, although not so keen, was remarkably even in all of the trade classes.

Fruit Committee.

There were numerous exhibits before this committee, Strawberries, Cherries and Melons being shown in quantity. Two collections of Queen Pine-apples and a few vegetables were also sent. From Mr. R. Parker, Impney Gardens, Droitwich, came six fruits of Queen Pine of large size, a trifle over-ripe, but well finished. The fruits averaged quite 5 lbs. to 6 lbs. in weight (a silver Banksian medal was awarded). Mr. E. Beckett, Aldenham House Gardens, Elstree, also sent six Queen Pines of great merit, the fruits, though a little smaller than the first-named, being well finished (silver Banksian medal). Mr. O. Thomas, the Royal Gardens, Frogmore, sent a collection of Strawberries and Cherries. There were fourteen varieties of each, comprising the following kinds: of Cherries, Late Duke, Royal Duke, Black Tartarian, Bigarreau Napoleon (very fine), Monstrous Bigarreau, Frogmore Bigarreau, Early Frogmore Bigarreau, Knight's Early Black, Governor Wood, Old White Heart, Adam's Crown, Black Eagle, Florence, and Reine Hortense—a very fine collection. Of the Strawberries, the best were Dr. Hogg, J. Veitch, Sir Harry, Vicomtesse Héricart de Thury, Noble, Sir J. Paxton, very fine, Countess, Unser Fritz, and Aromatic (silver Banksian medal). Messrs. Veitch, Chelsea, also staged an interesting collection of Cherries from pyramid trees grown in the open ground; these comprised some good fruit, little inferior to that from walls. Some of the light coloured sorts were large and well finished. The best were May Duke, Mammoth, Royal Duke, Black Hawk, Nouvelle Royale, Reine Hortense, Bigarreau de Schercken, and Knight's Early Black. Mr. Allan, Gunton Park, Norwich, again staged his new Strawberries in splendid condition, the fruit of Gunton Park and Lord Suffield being very fine. The committee were pleased to

see these new fruits in such excellent condition being superior if possible to those certificated in 1891. A new seedling Strawberry named G. Rundle was sent by Messrs. Cannell, Swanley. It is of good flavour, but too near Dr. Hogg to merit a special award. Very fine President Strawberries gathered from young plants came from Mr. McKellar, Abney Hall Gardens, Cheadle. These had been grown in ten months from time of planting, the fruits being large and highly coloured, but not of good shape. The same exhibitor also sent a fruiting branch of a small-leaved Orange named *Myrtifolia*, stated to be very prolific and dwarf.

Mr. J. Douglas, The Gardens, Great Gearies, Ilford, sent a new seedling white Grape, a cross between Black Hamburg and White Muscadine. The berries are large, round, and of good flavour. This the committee desired to be sent a little later to test its keeping qualities. Some very fine pods of *Musa Cavendishi*, but much over-ripe, were staged by Mr. A. Gant, Beswick Gardens, near Shrewsbury. A dish of a seedling Apple named Corsham Seedling was sent by Mr. W. C. Button, The Nurseries, Corsham, but over-ripe. Melons were staged in quantity. Mr. Ashton, Glossop Hall Gardens, Derby, sent a seedling, but too ripe. Large fruits came from Mr. A. Bishop, Westley Hall Gardens, Bury St. Edmunds. Mr. C. Brooks, Red Rice, Andover, and Mr. H. S. Easty, Sudbury, also sent Melons, but none were considered worth a distinct award. Some very highly coloured Peaches grown in a cool orchard house were sent by Messrs. Rivers, Sawbridgeworth. The varieties were Alexander, Waterloo, and Amsden June. Mr. P. Crowley, Waddon House, Croydon, sent Asparagus in a dried state to show its value in that condition when preserved; also dry grass boiled. This was an interesting exhibit, the cooked Asparagus being good and very tender. Some fine clusters of Tomatoes were sent by Dr. Kirby (gardener, Mr. Webster), Helsby Hall, Beckenham, the fruits being shown on the branches.

ROYAL BOTANIC SOCIETY.

FLORAL FETE, JUNE 21.

THE annual children's floral parade and fête were held on Wednesday last at Regent's Park, and the gathering was the best we have seen. The attendance was large and, fortunately, the weather kept fine, although at one time threatening. The exhibits were very numerous, and many of the arrangements of flowers showed great taste, although some were the reverse of pretty. A great fault is the desire to get a block of rich colour, gaudy it may be, but not artistic. The finest exhibit of all, a sedan chair from Mr. Youens, was adorned simply with white Marguerites and the rosy flowers of Mme. Crousse Pelargonium on a green ground. In some of the classes there were ten and eleven entries, comprising flower-adorned mail-carts, goat-chaises, ponies, and sedan chairs. Several of the exhibits were quite wanting in good taste, but, on the whole, the procession of vehicles of various descriptions was picturesque. In the large tent there were several choice arrangements. A splendid collection of Roses came from Messrs. Wm. Paul and Son, Waltham Cross, and a silver-gilt medal was awarded. The flowers were fresh and charming for colour, especially the Teas and dark coloured Hybrid Perpetuals. A promising new Tea is Grand Duke Luxembourg, which was given a certificate; the flowers were rich rose in colour, fragrant, and not stiff. A silver medal went to Mr. G. Mount, Canterbury, for an extensive display of Roses, and Mr. Frank Cant, Braiswick Nurseries, Colchester, also showed this flower in fine character, receiving a similar award. He had some of the finest blooms of the variety Ernest Metz that we have seen this season. A silver medal went to Messrs. J. Laing and Sons, Forest Hill, for a collection of tuberous Begonias, including many beautiful novelties, also Caladiums; whilst Mr. John R. Box, Croydon, also had a silver medal for a group of Caladiums and tuberous Begonias, representing very fine varieties,

arranged pleasingly with Ferns. The display made by Mr. Charles Turner, Slough, comprised Souvenir de la Malmaison Carnation, pink, and also the typical variety, and that fine Polyantha Rose, Crimson Rambler. A miscellaneous arrangement came from Mr. R. Scott, gardener to Mrs Foster, The Holme, Regent's Park, and Mr. Chard, Brunswick Nursery, Stoke Newington, had table decorations. There were window plants and various other less important features.

A full prize list is given in our advertising columns.

The weather in West Herts.—The weather during the past week remained exceedingly warm until Tuesday, when a change to much cooler conditions took place. The highest temperatures in shade during the six days ending Monday varied only from 81° to 88°. The hottest day of all was Monday, when the thermometer in the shade rose as high as 88°, which is the highest reading I have yet (eight years) recorded here at any period of the year. On the other hand, on Tuesday the temperature at no time exceeded 67°. The nights were all more or less warm, but in no way remarkably so. On Monday the temperature of the ground at 1 foot deep rose to 74°, and at 2 feet deep to 67°. On the same day last year the readings at these depths were respectively 59° and 57°, or 15° and 10° cooler. A few trifling showers have occurred here to-day (Wednesday), but before that there had been no rain whatever for a fortnight. The difference between the readings of a dry bulb thermometer and one with its bulb kept constantly moist on Saturday afternoon exceeded 20°. Owing to the great heat during the daytime and the comparative coldness of the nights this proved a very trying week to the Roses, the air being moreover singularly dry, even for a summer month.—E. M., Berkhamsted.

Bad Tomatoes.—We read in the *Times*: "Henry Levy, an auctioneer at Covent Garden, was fined £20 and costs for selling seventy-two boxes of Tomatoes unfit for human food." It is probable that the auctioneer may not have been guilty of any fraudulent intention in the matter, as Tomatoes are among the things that perish quickly in transit, and Covent Garden salesmen usually offer for sale all that is consigned to them. The evil results from bringing Tomatoes long distances. In Touraine last autumn we saw the growers packing fruit for the London markets—gathering it before it was ripe, so that it might

travel better. For the consumer there is no substitute for the ripe and freshly gathered Tomato, while restaurants and shops are pretty full of Tomatoes unripe and half rotten. Owing to the dark heavy colour of the Tomato, decay is not so evident in it as in many other fruits and vegetables, and hence the large consumption of Tomatoes far from wholesome, we fear.—*Field*.

To Chrysanthemum growers for exhibition.—Will you kindly insert a few lines in your next issue to call the attention of those interested, to the fact that bones are being sold which if used for crocking pots will go putrid in a short time and entirely ruin the plants. I should advise all growers to turn out some of their plants to see the condition they are in, for if transferred to clean pots with fresh drainage within a fortnight not much harm will have been done, but in a month the bones I have been using go into a wet putrid mass of living filth. Those who have not yet done their final potting can test the bones before use.—P. W.

PUBLIC GARDENS.

A pleasure ground for Sandgate.—The South-Eastern Railway Company has agreed to give over Sandgate Castle, an ancient fortification, to the town of Sandgate for the purpose of its being made a pleasure resort. The company purchased the building from the Government for £20,000, and they are only to receive a nominal rental of £10 per annum.

Opening of a park for Stockton.—On the 8th inst. the opening took place of a park for Stockton-on-Tees. The park, which is situated in the south-west part of the borough, comprises 36 acres of land given by Major Ropner, J.P., and 3 acres purchased by the Corporation. The estimated cost for laying out the park was about £11,000, but this will be greatly exceeded.

Another open space for Hackney.—An addition to the open spaces of the metropolis has been made by the opening of St. Thomas Square, Mare Street, by Countess Brownlow. This ground is one and a half acres in size and occupies a prominent position about halfway down the main street of Hackney. It has been laid out as a public recreation ground by the Metropolitan Public Gar-

dens Association at a cost of £350, and will now be handed over to the Hackney District Board. Countess Brownlow, who was accompanied by Earl Brownlow, was received by the Earl of Meath and the vice-chairman of the association and representatives of the local board. The Earl of Meath said that the association, since 1884, had opened 92 acres of open spaces in London at a cost of nearly £30,000.

Rose Mme. Alfred Carrière.—In *THE GARDEN* of June 10 (page 473) "A. H." says of the Rose Mme. Alfred Carrière that it is not to be found in any English Rose catalogue. Allow me to suggest two Rose growers who mention it in their catalogues, viz., Cranston, of Hereford, and Dicksons, of Chester. In the former of these it is called a hybrid Noisette, raised by Schwartz. In Dicksons it is simply called a Noisette.—M. E. C.

Nelumbium speciosum.—I have a pond in my garden in which I have some, and hope to have more, good aquatics. I should have liked to try *Nelumbium speciosum* after your article last week, but I cannot obtain it. If any of your readers are breaking up a plant I should much like to make the attempt. I do not see why a plant which will thrive in America should not at least live in Kent.—MEDWAY.

Chrysanthemums in Australia.—A New South Wales correspondent writes concerning the recent Chrysanthemum season in that colony as follows: "Our season this year has been a disastrous one, rainy and misty nearly the whole time the blooms were out, so that they damped terribly, and mine, although covered, were almost reduced to pulp. A few very fine ones were, however, shown. Some good seedlings have been raised here, and I hope I shall be able to give a better account next season."—C. H. P.

Names of plants.—*Clibran and Son*.—1, *Lilium Thunbergianum* fl.-pl.; 2, *Lilium armeniacum*; 3, next week.—*J. H.*—1, *Cattleya Mossiae*; 2, please send fertile fronds. The leaves of the *Gloxinias* are covered with thrips. The leaves of the *Cypripedium* seem to us to have been burned.—*F. Hand*.—*Zenobia speciosa*; if the leaves are silvery it is the variety *pulverulenta*.—*A. W. P.*—*Scuticaria Hadweni* if with short leaves.—*H. T.*—1, *Thalictrum anemonoides*; 2, *Caltha leptosepala*.—*M. T. W.*—1, *Phlebodium aureum*; 2, *Dictyoxiphium panamense*.—*George Hudson*.—1, *Ranunculus parnassifolius*; 2, *Ranunculus Thora*.—*H. J.*—1, *Cattleya speciosissima*; 2, *Masdevallia Harryana*; 3, *Odontoglossum luteo-purpureum*.—*J. M.*—*Salvia asperata*.



